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October 29, 2020

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

**Re: Mark Owen No. 9 Reserve Pit
2019 Annual Groundwater Monitoring Report
Case No. AP56
Lea County, New Mexico**

Dear Mr. Billings,

Please find enclosed the following report:

Mark Owen No. 9 Reserve Pit – 2019 Annual Groundwater Monitoring Report, Section 34 –Township 21 South – Range 37 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,

A handwritten signature in black ink, appearing to read "Jason Michelson".

Jason Michelson
Project Manager

Encl. Mark Owen No. 9 Reserve Pit – 2019 Annual Groundwater Monitoring Report

Chevron Environmental Management Company

2019 ANNUAL GROUNDWATER MONITORING REPORT

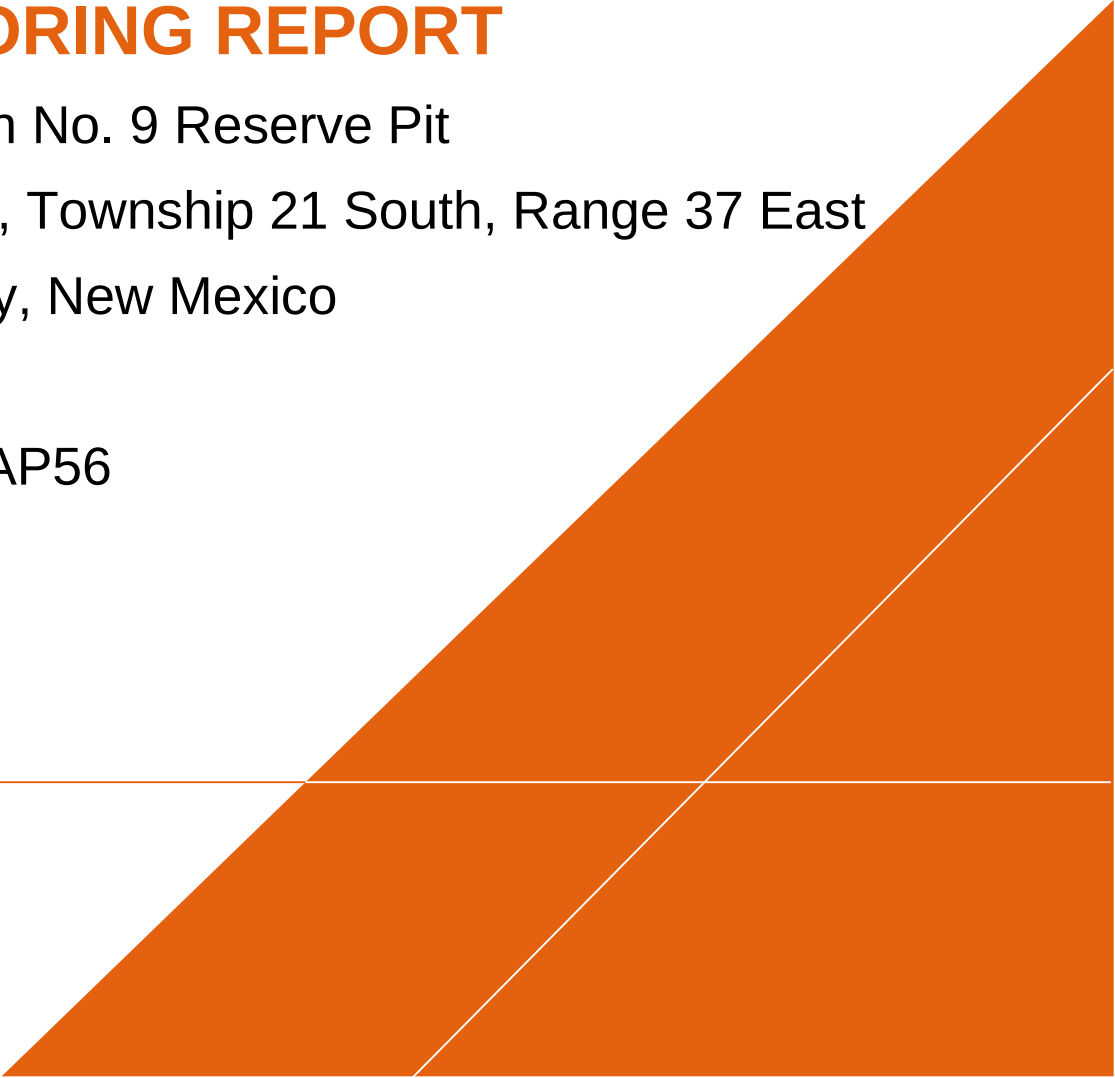
Mark Owen No. 9 Reserve Pit

Section 34, Township 21 South, Range 37 East

Lea County, New Mexico

Case No. AP56

October 2020

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a complex, angular form that extends from the bottom edge towards the top right corner.

2019 ANNUAL GROUNDWATER MONITORING REPORT

Mark Owen No. 9 Reserve Pit



Ryan Nanny
Project Geologist



Scott Foord, P.G.
Certified Project Manager

Prepared for:

Jason Michelson

Project Manager

Chevron Environmental Management
Company

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Our Ref.:

30006543

Date:

October 2020

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CONTENTS

1	Introduction	1
2	Groundwater Monitoring Results	1
2.1	Groundwater Gauging Data	1
2.2	2019 Groundwater Analytical Results	2
2.2.1	Chloride	2
2.2.2	TDS	3
2.2.3	Sulfate	4
3	Summary	4

TABLES

Table 1	2019 Potentiometric Elevation Data
Table 2	2019 Groundwater Analytical Summary - Inorgancis

FIGURES

Figure 1	Site Location Map
Figure 2	Site Details Map
Figure 3	Quarterly Potentiometric Surface Maps 2019
Figure 4	Quarterly Chloride Isoconcentration Maps 2019
Figure 5	Quarterly TDS Isoconcentration Maps 2019
Figure 6	Quarterly Sulfate Isoconcentration Maps 2019

APPENDICES

Appendix A	Site Background
Appendix B	Field Methodology and Documentation
Appendix C	Cumulative Summary of Groundwater Analytical Results
Appendix D	Cumulative Summary of Groundwater Potentiometric Elevation Data
Appendix E	Analytical Reports - 2019

1 INTRODUCTION

Arcadis U.S., Inc. (Arcadis) has prepared this report for Chevron Environmental Management Company (CEMC), which summarizes quarterly groundwater monitoring activities conducted in 2019 at the Mark Owen No. 9 Reserve Pit (Site). Data presented in this report was collected during four quarterly groundwater monitoring events conducted in April, June, September, and November 2019.

The Site is in the NW/4 of the SE/4 of Section 34, Township 21 South, Range 37 East of Lea County, New Mexico. Latitude and longitude coordinates for the Site are 32° 25' 56.49" N and 103° 08' 46.27" W.

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**. Additional Site background information is in **Appendix A**.

2 GROUNDWATER MONITORING RESULTS

Groundwater at the Site is monitored quarterly from a network of 25 monitoring wells and one recovery well. A Site Details Map is presented as **Figure 2**. Arcadis performed quarterly groundwater sampling events on

- April 4th and 5th,
- June 17th, 18th and 21st,
- September 10th, 11th and 12th, and
- November 18th, 19th and 23rd, 2019.

Field monitoring methodologies are in **Appendix B**.

2.1 Groundwater Gauging Data

Groundwater and light non-aqueous phase liquid (LNAPL) measurements collected during the quarterly monitoring events conducted in 2019 indicated:

- Groundwater elevations ranged from:
 - o 3,366.65 ft AMSL (MW-14) to 3,375.82 ft AMSL (MW-16) during the April 2019 gauging event,
 - o 3,366.35 ft AMSL (MW-14) to 3,377.36 ft AMSL (MW-19) during the June 2019 gauging event,
 - o 3,365.92 ft AMSL (MW-14) to 3,375.65 ft AMSL (MW-16) during the September 2019 gauging event, and
 - o 3,366.29 ft AMSL (MW-14) to 3,375.94 ft AMSL (MW-16) during the November 2019 gauging event.

- The groundwater elevations during the 2019 period appear to be consistent with historical levels, with groundwater flow generally to the south-southeast.
- Potentiometric elevation data for the sampling events are presented in **Table 1**. Groundwater potentiometric surface maps for April, June, September, and November 2019 are presented on **Figure 3**.
- The calculated gradient was:
 - o 0.0069 feet/foot (ft/ft) for the April 2019 gauging event,
 - o 0.0103 ft/ft for the June 2019 gauging event,
 - o 0.0074 ft/ft for the September 2019 gauging event, and
 - o 0.0074 ft/ft for the November 2019 gauging event.
- LNAPL was not detected during any of the 2019 quarterly monitoring events.

2.2 2019 Groundwater Analytical Results

All 25 monitoring wells and the one recovery well were sampled at the Site during the April, June, September, and November 2019 sampling events. Groundwater analytical results for chloride, total dissolved solids (TDS), sulfate and total alkalinity were compared to the New Mexico Environment Department Water Quality Control Commission (NMWQCC) Groundwater Standards. A summary of the groundwater sample analytical results is presented in **Table 2**.

Cumulative summary tables of groundwater analytical results and potentiometric elevation data obtained for the Site from 2007 through 2019 are presented in **Appendices C** and **D**, respectively. Copies of the certified analytical reports and chain-of-custody documentation from Xenco Laboratories (April 2019 event) and Eurofins TestAmerica are provided in **Appendix E**.

Isoconcentration maps for chloride for the 2019 quarterly sampling events are presented on **Figure 4**. The isoconcentration maps for TDS for the 2019 quarterly sampling events are presented on **Figure 5**. The isoconcentration maps for sulfate for the 2019 quarterly sampling events are presented on **Figure 6**. The groundwater analytical results are further summarized below.

2.2.1 Chloride

Chloride concentrations exceeded the NMWQCC standard of 250 milligrams per liter (mg/L) as follows:

- April Sampling Event
 - o 23 of 26 wells (MW-01 through MW-18, MW-21, MW-23 through MW-25 and RW-1).
 - o Chloride concentrations exceeding the NMWQCC standard ranged from 261 mg/L (MW-03) to 10,100 mg/L (MW-13).
- June Sampling Event
 - o 22 of 26 wells (MW-01 through MW-06, MW-08 through MW-18, MW-21, MW-23 through MW-25 and RW-1).

- o Chloride concentrations exceeding the NMWQCC standard ranged from 252 mg/L (MW-03) to 11,300 mg/L (MW-01).
- September Sampling Event
 - o 23 of 26 wells (MW-01 through MW-06, MW-08 through MW-18, MW-20, MW-21, MW-23 through MW-25 and RW-1).
 - o Chloride concentrations exceeding the NMWQCC standard ranged from 279 mg/L (MW-03) to 10,600 (MW-21).
- November Sampling Event
 - o 23 of 26 wells (MW-01 through MW-03, MW-05 through MW-18, MW-20, MW-21, MW-23 through MW-25, and RW-1).
 - o Chloride concentrations exceeding the NMWQCC standard ranged from 267 mg/L (MW-03) to 11,300 mg/L (MW-21).

2.2.2 TDS

TDS concentrations exceeded the NMWQCC standard of 1,000 mg/L as follows:

- April Sampling event
 - o 22 of 26 wells (MW-01, MW-02, MW-04 through MW-18, MW-21, MW-23 through MW-25 and RW-1).
 - o TDS concentrations exceeding the NMWQCC standard ranged from 1,110 mg/L (MW-02) to 17,900 mg/L (MW-21).
- June 2019
 - o 23 of 26 wells (MW-01 through MW-06, MW-08 through MW-18, MW-20, MW-21, MW-23 through MW-25, and RW-1).
 - o TDS concentrations exceeding the NMWQCC standard ranged from 1,080 mg/L (MW-03) to 25,100 mg/L (MW-21).
- September sampling event
 - o 21 of 26 wells (MW-01, MW-02, MW-05, MW-06, MW-08 through MW-18, MW-20, MW-21, MW-23 through MW-25 and RW-1).
 - o TDS concentrations exceeding the NMWQCC standard ranged from 1,200 mg/L (MW-02) to 26,900 mg/L (MW-21).
- November 2019
 - o 21 of 26 wells (MW-01, MW-02, MW-05, MW-06, MW-08 through MW-18, MW-20, MW-21, MW-23 through MW-25, and RW-1).
 - o TDS concentrations exceeding the NMWQCC standard ranged from 1,120 mg/L (MW-02) to 22,000 mg/L (MW-13).

2.2.3 Sulfate

Sulfate concentrations exceeded the NMWQCC standard of 600 mg/L as follows:

- April sampling event
 - o 1 of 26 wells (MW-13) at a concentration of 936 mg/L.
- June sampling event
 - o Sulfate was not analysed during this sampling event.
- September sampling event
 - o 1 of 26 wells (MW-13) at a concentration of 849 mg/L.
- November sampling event
 - o 1 of 26 wells (MW-13) at a concentration of 683 mg/L.

3 SUMMARY

In summary, the quarterly monitoring activities conducted at the Site in April, June, September, and November 2019 indicated the following:

- 25 monitoring wells and 1 remediation well were gauged and sampled during all 2019 events.
- Groundwater elevations at the Site have remained relatively consistent over the last 2 years.
- Potentiometric surface conditions were consistent with historical results, with groundwater flow to the south-southeast.

Groundwater sample analytical results reported for the April, June, September, and November 2019 sampling event indicated:

- Chloride exceeded the NMWQCC groundwater standard in
 - o 23 wells in April,
 - o 22 wells in June,
 - o 23 wells in September, and
 - o 23 wells in November;
- TDS exceeded the NMWQCC groundwater standard in
 - o 22 wells in April,
 - o 23 wells in June,
 - o 21 wells in September, and
 - o 21 wells in November;
- Sulfate exceeded the NMWQCC groundwater standard in

- o 1 well in April, September, and November.
- o Sulfate was not analysed during the June 2019 quarterly sampling event.
- Chloride and/or TDS concentrations have remained relatively stable in 22 out of 26 wells (MW-01, MW-02, MW-03, MW-05, MW-06, MW-07, MW-08, MW-09, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-22, MW-24, MW-25, and RW-1).
- Chloride and TDS have exhibited a downward trend in well MW-04 since April 2019.
- Chloride and TDS exhibited an upward trend in well MW-20 during the first three quarters of 2019, however, showed a slight decrease in the fourth quarter of 2019.
- Chloride exhibited an upward trend in wells MW-21 and MW-23 since April 2019.
- TDS exhibited an upward trend in well MW-21 during the first three quarters of 2019; however, showed a slight decrease in the fourth quarter of 2019.
- TDS exhibited an upward trend in well MW-23 during the first two quarters of 2019; however, showed a downward trend in the last two quarters of 2019.

TABLES



Table 1
2019 Potentiometric Elevation Data
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9 Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-01	3405.22	4	16'-51'	4/4/2019	53.97	31.57	3373.65
				6/17/2019	54.00	31.56	3373.66
				9/11/2019	54.03	31.25	3373.97
				11/18/2019	54.03	31.62	3373.60
MW-02	3409.77	4	22'-57'	4/4/2019	60.00	35.10	3374.67
				6/17/2019	60.40	35.13	3374.64
				9/11/2019	60.32	35.41	3374.36
				11/19/2019	60.21	35.23	3374.54
MW-03	3408.61	4	19'-54'	4/4/2019	57.55	33.72	3374.89
				6/17/2019	57.64	33.80	3374.81
				9/11/2019	57.50	34.07	3374.54
				11/19/2019	57.44	33.83	3374.78
MW-04	3406.30	4	16'-51'	4/4/2019	54.01	31.80	3374.50
				6/17/2019	54.30	31.89	3374.41
				9/11/2019	54.21	32.14	3374.16
				11/19/2019	54.28	31.95	3374.35
MW-05	3403.68	4	15'-50'	4/4/2019	52.63	30.60	3373.08
				6/17/2019	52.70	30.72	3372.96
				9/11/2019	52.65	30.99	3372.69
				11/18/2019	52.64	30.91	3372.77
MW-06	3401.82	4	10'-45'	4/4/2019	48.62	28.51	3373.31
				6/18/2019	48.68	28.64	3373.18
				9/11/2019	48.59	28.91	3372.91
				11/19/2019	48.64	28.70	3373.12
MW-07	3403.63	4	13'-48'	4/4/2019	51.07	29.32	3374.31
				6/17/2019	51.24	29.45	3374.18
				9/11/2019	51.14	29.90	3373.73
				11/19/2019	54.11	29.48	3374.15
MW-08	3398.76	4	20'-50'	4/4/2019	53.27	26.65	3372.11
				6/18/2019	53.30	26.77	3371.99
				9/11/2019	53.24	27.03	3371.73
				11/19/2019	53.30	26.92	3371.84
MW-09	3406.31	4	20'-50'	4/4/2019	53.35	33.61	3372.70
				6/17/2019	53.52	33.69	3372.62
				9/10/2019	53.34	33.88	3372.43
				11/19/2019	53.38	33.80	3372.51
MW-10	3400.65	4	30'-60'	4/4/2019	61.35	30.03	3370.62
				6/17/2019	62.27	30.18	3370.47
				9/10/2019	61.49	30.57	3370.08
				11/18/2019	61.50	30.45	3370.20
MW-11	3413.22	4	40'-80'	4/4/2019	81.27	42.01	3371.21
				6/18/2019	80.95	41.96	3371.26
				9/10/2019	80.92	42.00	3371.22
				11/18/2019	81.75	41.99	3371.23
MW-12	3418.90	2	45'-65'	4/4/2019	65.99	47.41	3371.49
				6/18/2019	66.12	47.38	3371.52
				9/10/2019	65.90	47.37	3371.53
				11/18/2019	65.79	47.40	3371.50
MW-13	3395.11	2	22'-42'	4/4/2019	45.07	27.42	3367.69
				6/18/2019	45.10	27.60	3367.51
				9/10/2019	45.09	27.98	3367.13
				11/18/2019	45.04	27.36	3367.75
MW-14	3396.91	2	25'-45'	4/4/2019	47.73	30.26	3366.65
				6/18/2019	47.82	30.56	3366.35
				9/10/2019	47.70	30.99	3365.92
				11/18/2019	47.66	30.62	3366.29
MW-15	3402.28	2	24'-44'	4/4/2019	46.65	28.12	3374.16
				6/17/2019	46.72	28.27	3374.01
				9/11/2019	46.59	28.56	3373.72
				11/19/2019	46.67	28.33	3373.95

Table 1
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CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9 Reserve Pit
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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)
MW-16	3415.43	2	33'-53'	4/4/2019	55.13	39.61	3375.82
				6/17/2019	55.09	39.56	3375.87
				9/10/2019	54.85	39.78	3375.65
				11/19/2019	54.94	39.49	3375.94
MW-17	3427.10	2	36'-86'	4/4/2019	82.85	55.01	3372.09
				6/18/2019	81.50	54.93	3372.17
				9/10/2019	80.92	54.94	3372.16
				11/18/2019	80.84	54.92	3372.18
MW-18	3409.96	2	25'-65'	4/4/2019	66.47	38.40	3371.56
				6/18/2019	66.55	38.45	3371.51
				9/10/2019	66.56	38.50	3371.46
				11/18/2019	65.89	38.49	3371.47
MW-19	3409.48	2	32'-57'	4/4/2019	NM	39.14	3370.34
				6/18/2019	60.44	32.12	3377.36
				9/10/2019	60.19	39.20	3370.28
				11/18/2019	59.77	39.16	3370.32
MW-20	3393.79	2	13'-58'	4/4/2019	62.00	25.31	3368.48
				6/18/2019	62.45	25.57	3368.22
				9/10/2019	62.13	26.13	3367.66
				11/18/2019	62.16	24.98	3368.81
MW-21	3395.16	2	20'-40'	4/4/2019	40.81	25.87	3369.29
				6/18/2019	40.86	25.81	3369.35
				9/10/2019	40.76	26.17	3368.99
				11/18/2019	40.67	25.98	3369.18
MW-22	3414.32	2	55'-65'	4/4/2019	NM	43.48	3370.84
				6/18/2019	57.12	43.50	3370.82
				9/10/2019	67.03	43.52	3370.80
				11/18/2019	67.08	43.48	3370.84
MW-23	3403.09	2	36'-46'	4/4/2019	47.51	32.58	3370.51
				6/18/2019	47.50	32.60	3370.49
				9/10/2019	47.38	32.86	3370.23
				11/18/2019	47.52	32.74	3370.35
MW-24	3411.08	2	51'-61'	4/4/2019	63.72	38.10	3372.98
				6/18/2019	63.75	38.07	3373.01
				9/10/2019	63.74	38.17	3372.91
				11/19/2019	63.65	38.15	3372.93
MW-25	3405.83	2	34.5'-44.5'	4/4/2019	48.21	32.01	3373.82
				6/18/2019	48.30	32.15	3373.68
				9/10/2019	48.24	32.33	3373.50
				11/19/2019	48.27	32.22	3373.61
RW-1	3404.58	6	20'-50'	4/4/2019	53.21	30.83	3373.75
				6/17/2019	53.40	30.91	3373.67
				9/11/2019	53.33	31.16	3373.42
				11/18/2019	53.28	31.00	3373.58

Notes:

¹ TOC - Top of Casing

² MSL - Mean Sea Level

³ bgs - below ground surface

⁴ NM - Not Measured

Professional Survey conducted by West Company of Midland, Inc. in March 2013 and January 2015.

Table 2
 2019 Groundwater Analytical Summary - Inorgancis
 CEMC
 2019 Annual Groundwater Monitoring Report - Mark Owen No. 9 Reserve Pit
 NW/4, SE/4, Section 34, Township 21 South, Range 37 East
 Lea County, New Mexico

Sample I.D. No.	Replacate Sample I.D.	Date	Groundwater Quality			
			Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolved Solids
			(mg/L)	(mg/L)	(mg/L)	(mg/L)
NMWQCC Human Health Standards			NMWQCC Other Standards for Domestic Water Supply ²			
				250	600	1,000
				mg/L	mg/L	mg/L
MW-01		04/05/19	208	7,800	333.0	13,300
		06/21/19	175	11,300	NA	24,400
		09/12/19	168	8,170	363	15,700
		11/23/19	179	11,000	347	19,000
MW-02		04/05/19	293	295	193	1,110
		06/21/19	NA	281	NA	1,210
		09/12/19	298	322	183	1,200
		11/23/19	289	307	162	1,120
MW-03		04/05/19	277	261	96.9	878
		06/21/19	NA	252	NA	1,080
		09/12/19	317	279	117	934
		11/23/19	260	267	113	974
MW-04	DUP-2	04/05/19	214	3,460	180	5,960
		06/21/19	NA	1,860	NA	4,370
	DUP-3	06/21/19	207	2,350	NA	4,370
		09/12/19	205	345	67.7	920
	DUP-1	09/12/19	214	339	62.9	892
		11/23/19	213	117	52.7	486
MW-05		11/23/19	207	166	63.4	492
		04/05/19	263	3,900	273	7,260
		06/21/19	222	5,090	NA	12,000
		09/12/19	279	4,260	288	9,560
MW-06	DUP-1	11/23/19	237	4,680	271	9,500
		04/05/19	173	877	250	1,880
	DUP-1	04/05/19	179	911	247	2,060
		06/21/19	NA	910	NA	2,870
		06/21/19	NA	905	NA	3,060
		09/12/19	168	959	213	2,630
MW-07	DUP-2	11/23/19	188	433	117	1,320
		04/05/19	204	434	153	1,120
		06/21/19	NA	151	NA	782
		09/12/19	214	89.7	50.6	545
		09/12/19	196	249	98.9	858
		11/23/19	206	326	119	968
MW-08	DUP-2	04/05/19	185	2,150	572	4,260
		04/05/19	188	2,200	579	6,030
		06/21/19	NA	2,200	NA	6,810
		09/12/19	177	2,180	563	5,690
		11/23/19	169	2,170	557	6,380
MW-09		04/05/19	280	4,600	304	8,120
		06/21/19	264	5,420	NA	11,700
		09/12/19	270	4,850	286	10,700
		11/23/19	279	5,020	334	5,860
MW-10		04/05/19	314	2,530	183	4,790
		06/21/19	295	2,420	NA	5,350
		09/12/19	298	2,500	159	5,280
		11/23/19	292	3,720	129	5,170
MW-11	DUP-1	04/05/19	192	5,050	194	10,000
		06/21/19	178	5,020	NA	14,200
		09/11/19	158	5,050	218	15,000
		09/11/19	168	5,030	215	14,600
		11/23/19	181	5,150	138	12,500
MW-12		04/05/19	299	1,460	225	3,080
		06/21/19	279	1,470	NA	4,480
		09/12/19	568	1,550	207	5,090
		11/23/19	298	646	154	3,440
MW-13		04/05/19	202	10,100	936	17,400
		06/21/19	191	10,700	NA	24,400
		09/11/19	196	10,400	849	26,600
		11/23/19	179	6,380	683	22,000
MW-14		04/05/19	332	956	200	2,120
		06/21/19	306	908	NA	2,500
		09/12/19	307	953	186	2,320
		11/23/19	314	963	181	2,030
MW-15		04/05/19	209	1,020	495	2,560
		06/21/19	NA	958	NA	2,920
		09/12/19	363	990	494	2,990
		11/23/19	217	456	241	1,450
MW-16		04/05/19	317	306	224	1,130
		06/21/19	NA	386	NA	1,480
		09/12/19	1,020	410	213	1,340
		11/23/19	281	368	186	1,230
MW-17		04/05/19	214	9,400	584	17,200
		06/21/19	187	10,300	NA	23,200
		09/11/19	186	9,030	544	21,200
		11/23/19	194	9,050	488	17,900

Table 2
2019 Groundwater Analytical Summary - Inorganics
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9 Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 East
Lea County, New Mexico

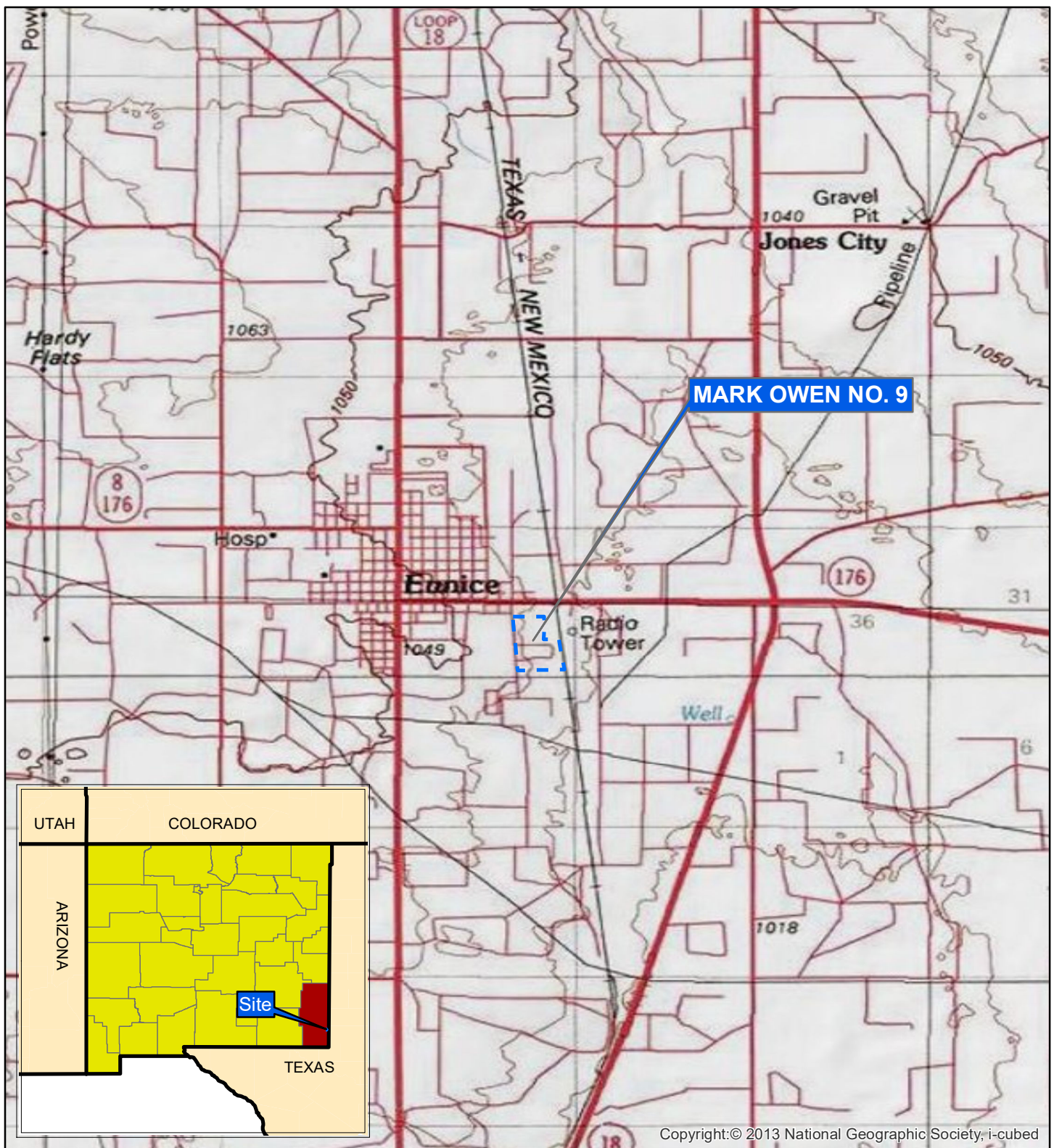
Sample I.D. No.	Replacate Sample I.D.	Date	Groundwater Quality			
			Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolved Solids
			(mg/L)	(mg/L)	(mg/L)	(mg/L)
NMWQCC Human Health Standards			NMWQCC Other Standards for Domestic Water Supply ²			
				250	600	1,000
				mg/L	mg/L	mg/L
MW-18		04/05/19	229	1,360	138	2,810
		06/21/19	211	988	NA	3,170
		09/11/19	1,580	1,220	134	3,540
		11/23/19	196	1,040	123	2,760
MW-19		4/5/2019	210	72.6	92.2	529
		06/21/19	562	78.1	NA	516
		09/11/19	382	82.1	97.9	599
		11/23/19	203	86.6	85.8	476
MW-20		04/05/19	265	187	208	969
		06/21/19	261	197	NA	1,330
		09/11/19	382	401	378	2,500
		11/23/19	324	274	245	1,460
MW-21		04/05/19	206	9,640	525	17,900
		06/21/19	195	10,400	NA	25,100
		09/11/19	223	10,600	536	26,900
		11/23/19	200	11,300	486	21,300
MW-22		04/05/19	227	87.4	36.6	437
		06/21/19	210	80.9	NA	521
		09/11/19	196	79.7	44.5	444
		11/23/19	210	84.5	50.4	360
MW-23		04/05/19	267	4,990	247	9,600
		06/21/19	264	6,770	NA	15,100
		09/11/19	698	5,270	240	12,500
		11/23/19	240	8,680	346	11,500
MW-24		04/05/19	185	1,670	203	3,390
		06/21/19	192	1,590	NA	4,760
		09/12/19	223	1,530	188	4,380
		11/23/19	200	2,230	284	3,640
MW-25		04/05/19	247	2,150	560	4,600
		06/21/19	NA	2,140	NA	6,760
		09/12/19	261	2,160	529	6,340
		11/23/19	237	1,360	289	6,180
RW-1		04/05/19	242	8,000	347	13,600
		06/21/19	NA	7,870	NA	15,400
		09/12/19	186	9,460	350	17,800
		11/23/19	229	8,000	285	12,800

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) Bolded and colored 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 than actual result; however reported value was verified by the laboratory.

FIGURES

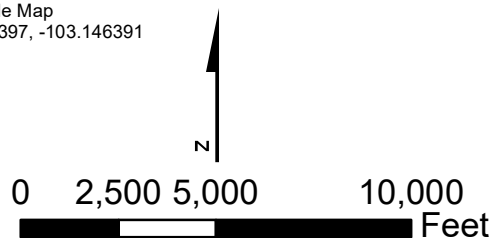




Copyright:© 2013 National Geographic Society, i-cubed

Notes:

1. Datum: D_WGS_1984
2. Source: United States Geological Survey
7.5 Minute Quadrangle Map
3. Site Location: 32.432397, -103.146391



Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

SITE LOCATION MAP



FIGURE

1

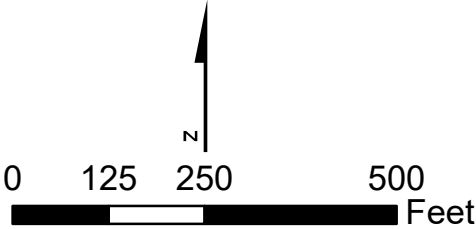


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- | | |
|-------------------------------|-------------------|
| Monitoring Well | Reserve Pit |
| 2018 Monitoring Well Location | Fence Line |
| Recovery Well | Property Boundary |
| Globe Monitoring Well | Railway Line |

Notes:
1. Datum: D_WGS_1984
2. Site Location: 32.432397, -103.146391



Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

SITE DETAILS MAP



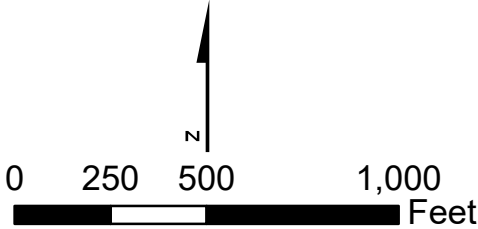
Document Path: \\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\HES Transfer\04 Field Investigations\2019\6 - Annual GWMRMark Owen\GIS - Mark Owen\ Figure 3 - GW Map 2019 Combined



Legend

- Monitoring Well Location
- 2018 Monitoring Well Location
- Recovery Well
- Globe Monitoring Well Location
- Potentiometric Contour and Elevation
- Groundwater Elevation (ft above mean sea level)
- Approximate Groundwater Flow
- Property Boundary

Notes:
1. Datum: D_WGS_1984
2. Site Location: 32.432397, -103.146391



Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

**QUARTERLY POTENTIOMETRIC
SURFACE MAPS
2019**

ARCADIS

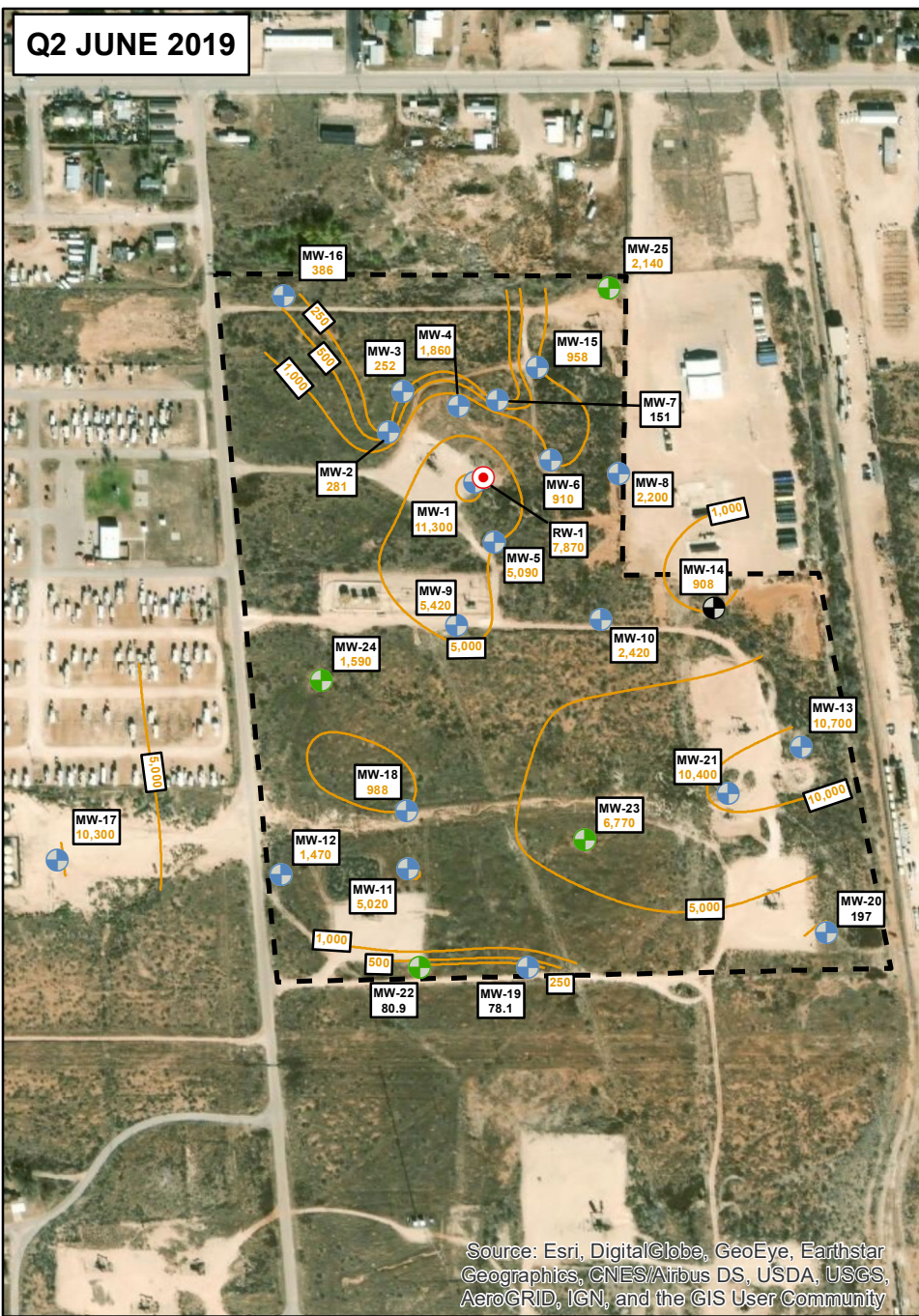
FIGURE 3

Document Path: \\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\IHES Transfer\04 Field Investigations\2019\6 - Annual GWMR\Mark Owen\GIS - Mark Owen\ Figure 4 - Chloride Map 2019 Combined

Q1 APRIL 2019



Q2 JUNE 2019



Q3 SEPTEMBER 2019



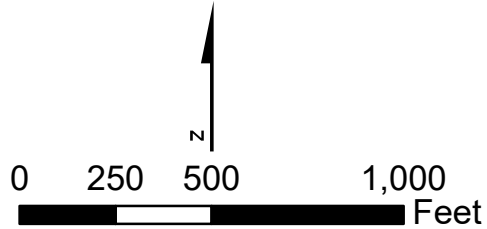
Q4 NOVEMBER 2019



Legend

- Monitoring Well Location
- 2018 Monitoring Well Location
- Recovery Well
- Globe Monitoring Well Location
- Chloride Isoconcentration Contour
- Chloride Concentration (mg/L)
- Chloride Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply
- Property Boundary

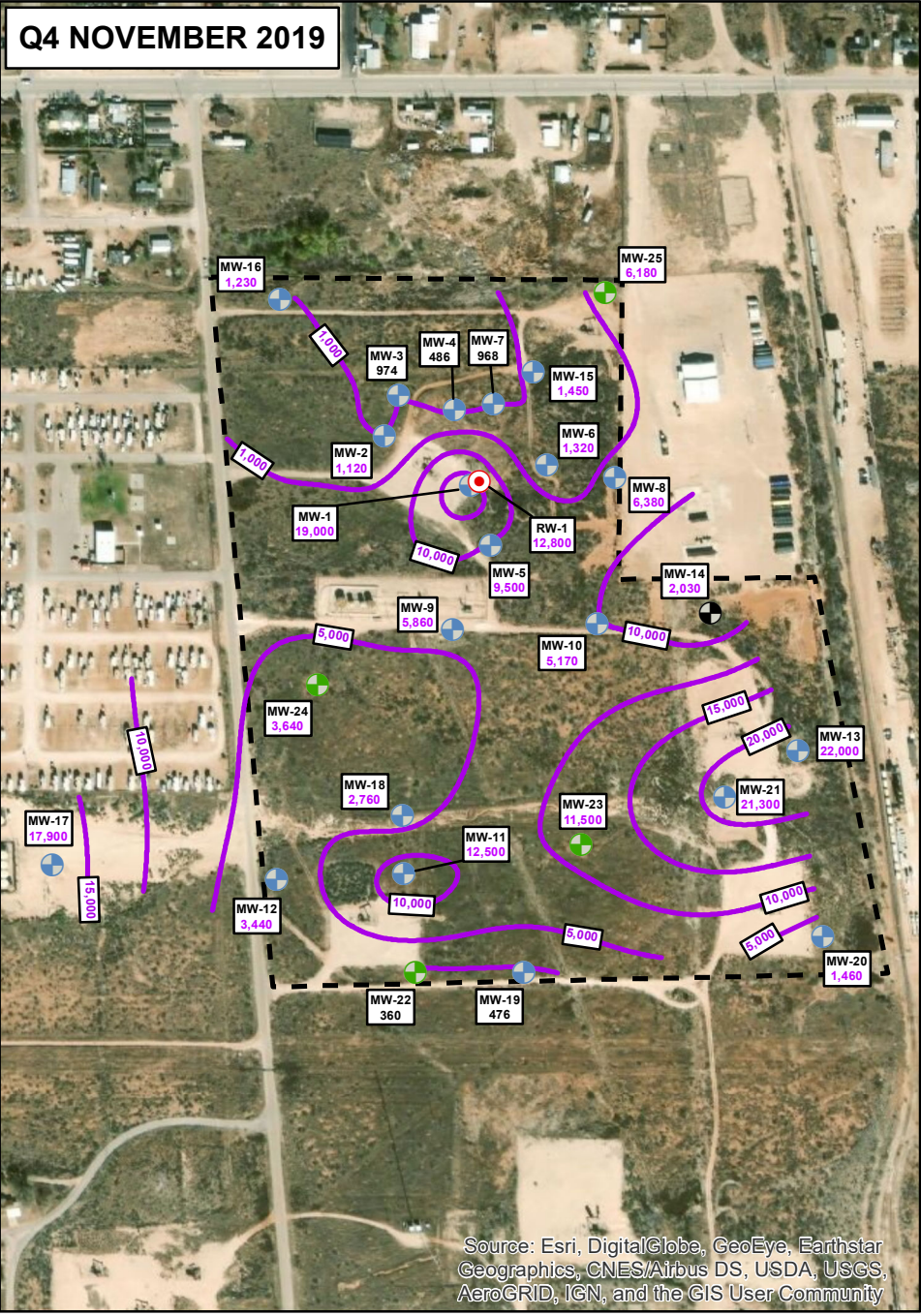
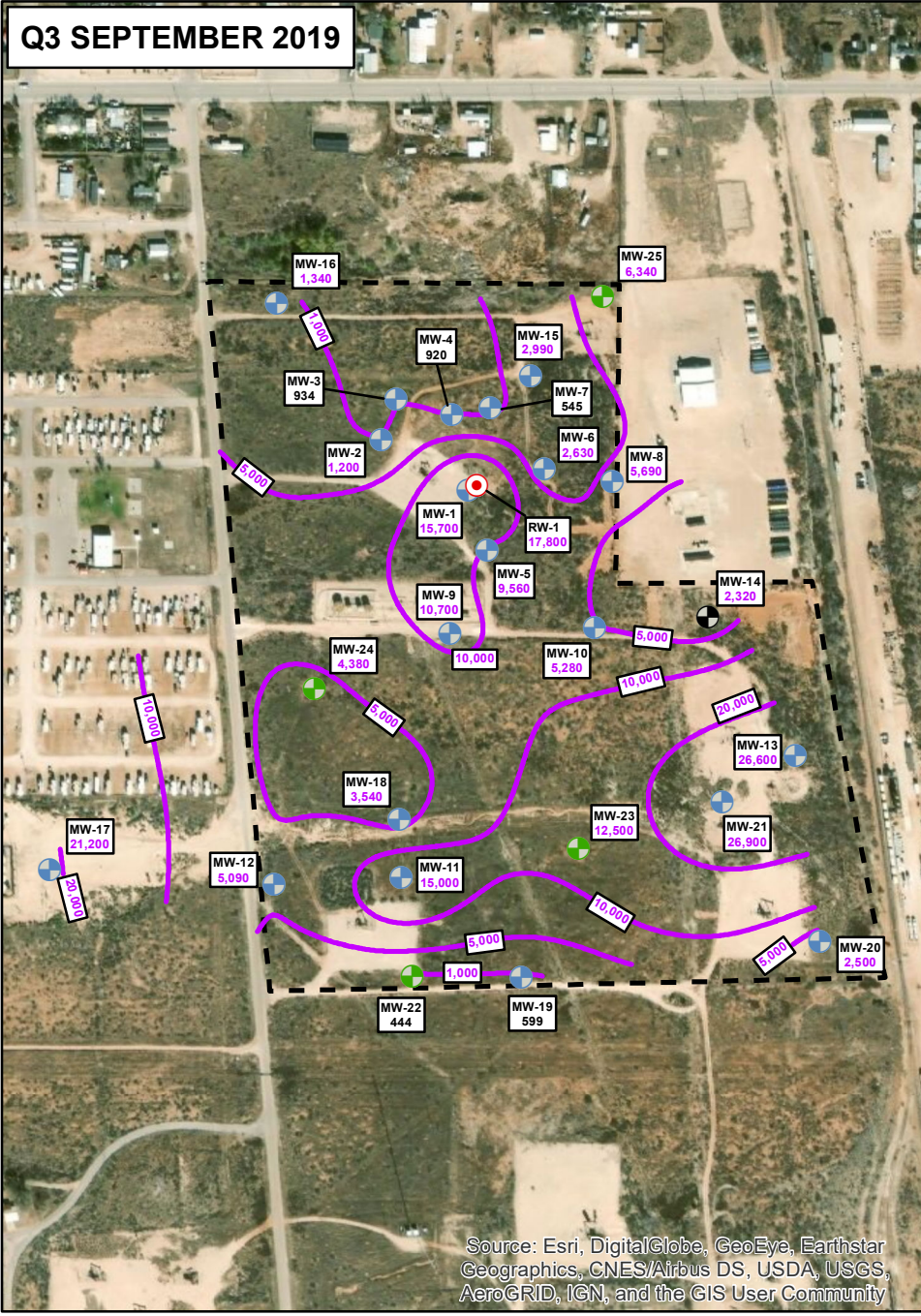
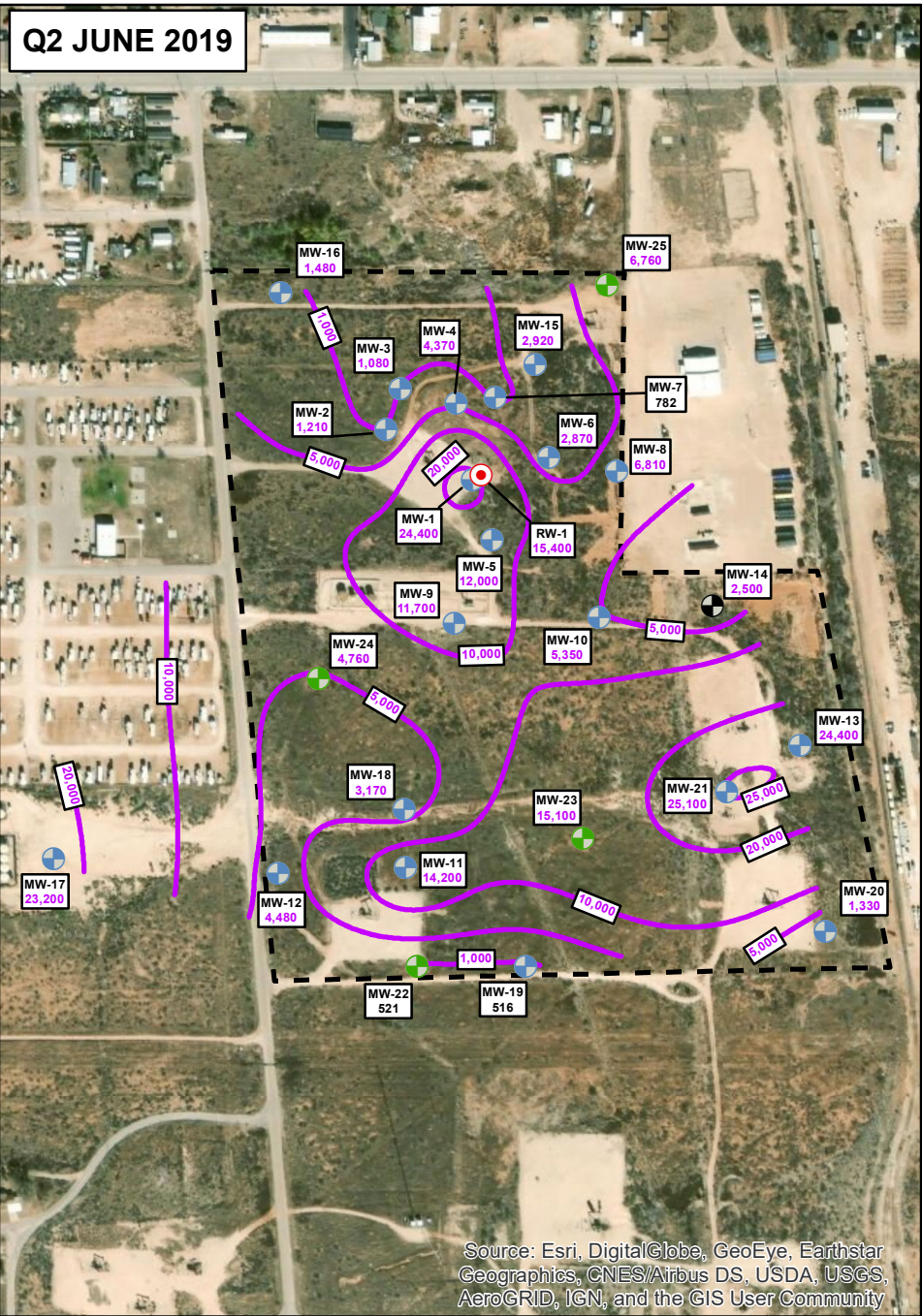
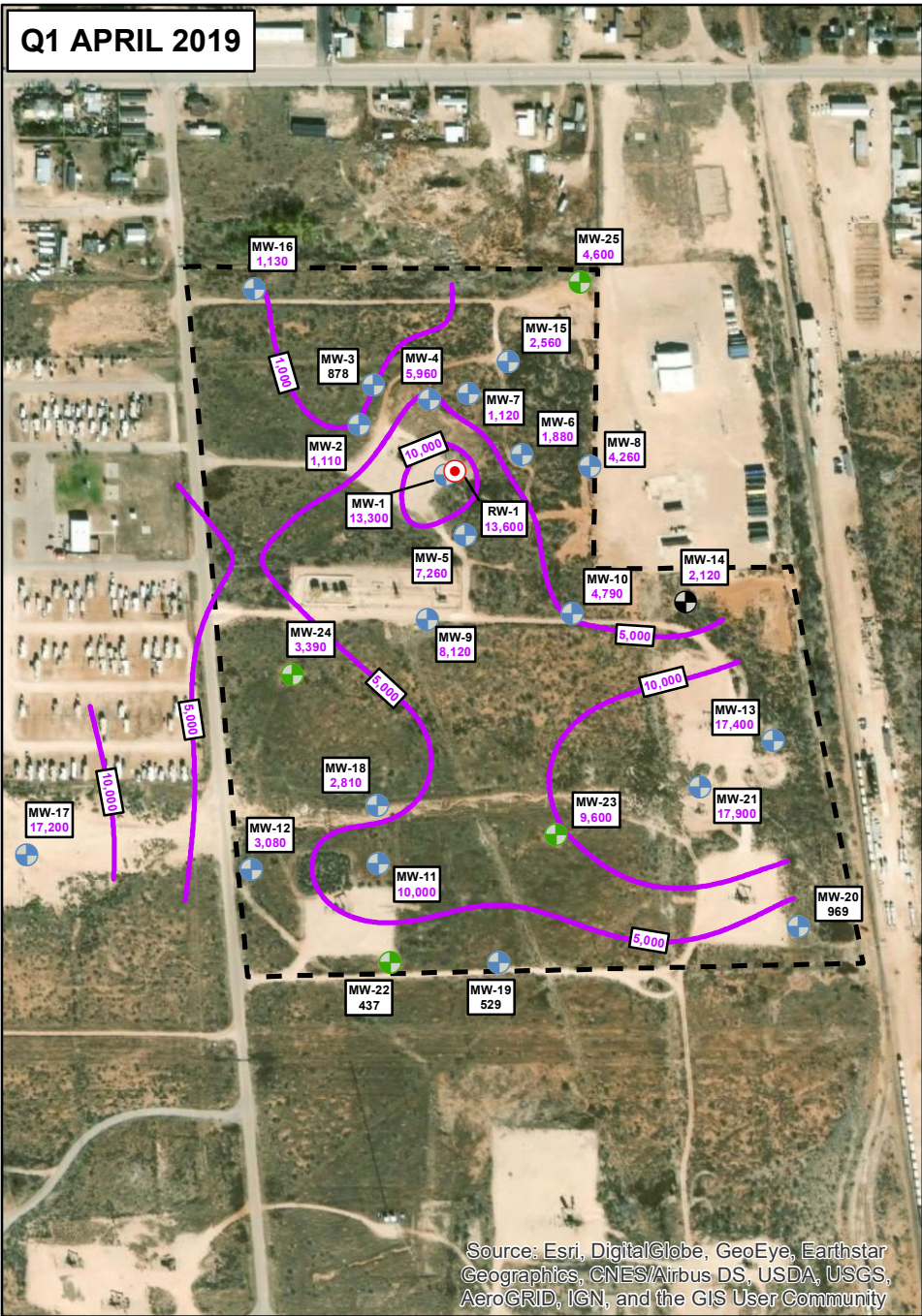
Notes:
1. Datum: D_WGS_1984
2. Site Location: 32.432397, -103.146391



Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

QUARTERLY CHLORIDE ISOCONCENTRATION MAPS
2019

Document Path: \\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX\ENV\Mark Owen\GIS - Mark Owen\Figure 5 - TDS Map 2019 Combined.mxd



Legend

- Monitoring Well Location
- 2018 Monitoring Well Location
- Recovery Well
- Globe Monitoring Well Location
- Total Dissolved Solids (TDS) Isoconcentration Contour
- 974 TDS Concentration (mg/L)
- 1,120 TDS Concentration (mg/L) Exceeds NMWQCC
- Other Standards for Domestic Water Supply
- Property Boundary

Notes:

- Datum: D_WGS_1984
- Site Location: 32.432397, -103.146391

0 250 500 1,000 Feet

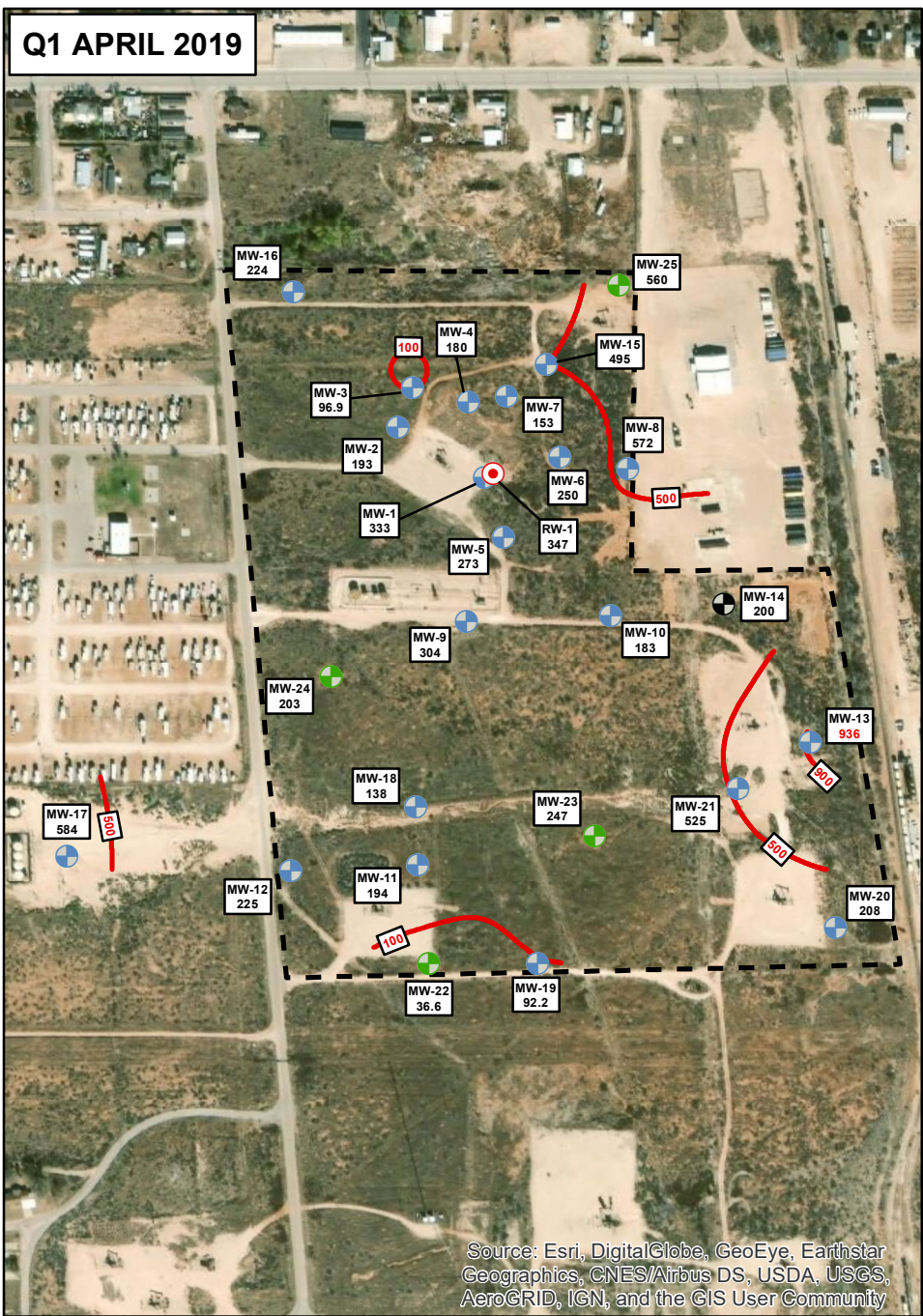
Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

QUARTERLY TDS ISOCONCENTRATION MAPS 2019

ARCADIS | **FIGURE 5**

Document Path: \\arcadis-us\officedata\Houston-TX\ENV\ChevronTexaco TX8\IHES Transfer\04 Field Investigations\2019\6 - Annual GWM\Mark Owen\GIS - Mark Owen\ Figure 6 - Sulfate Map 2019 Combined.mxd

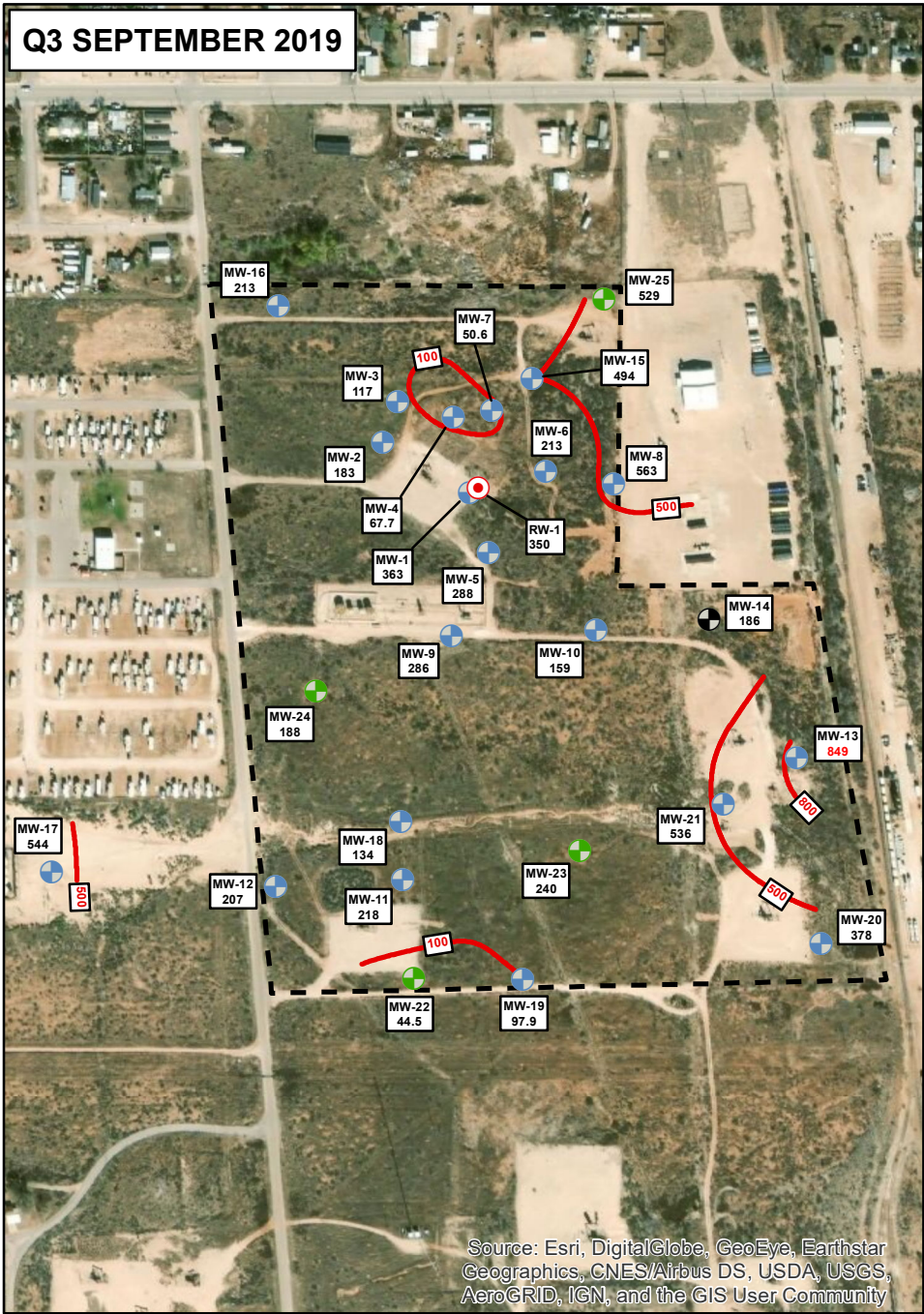
Q1 APRIL 2019



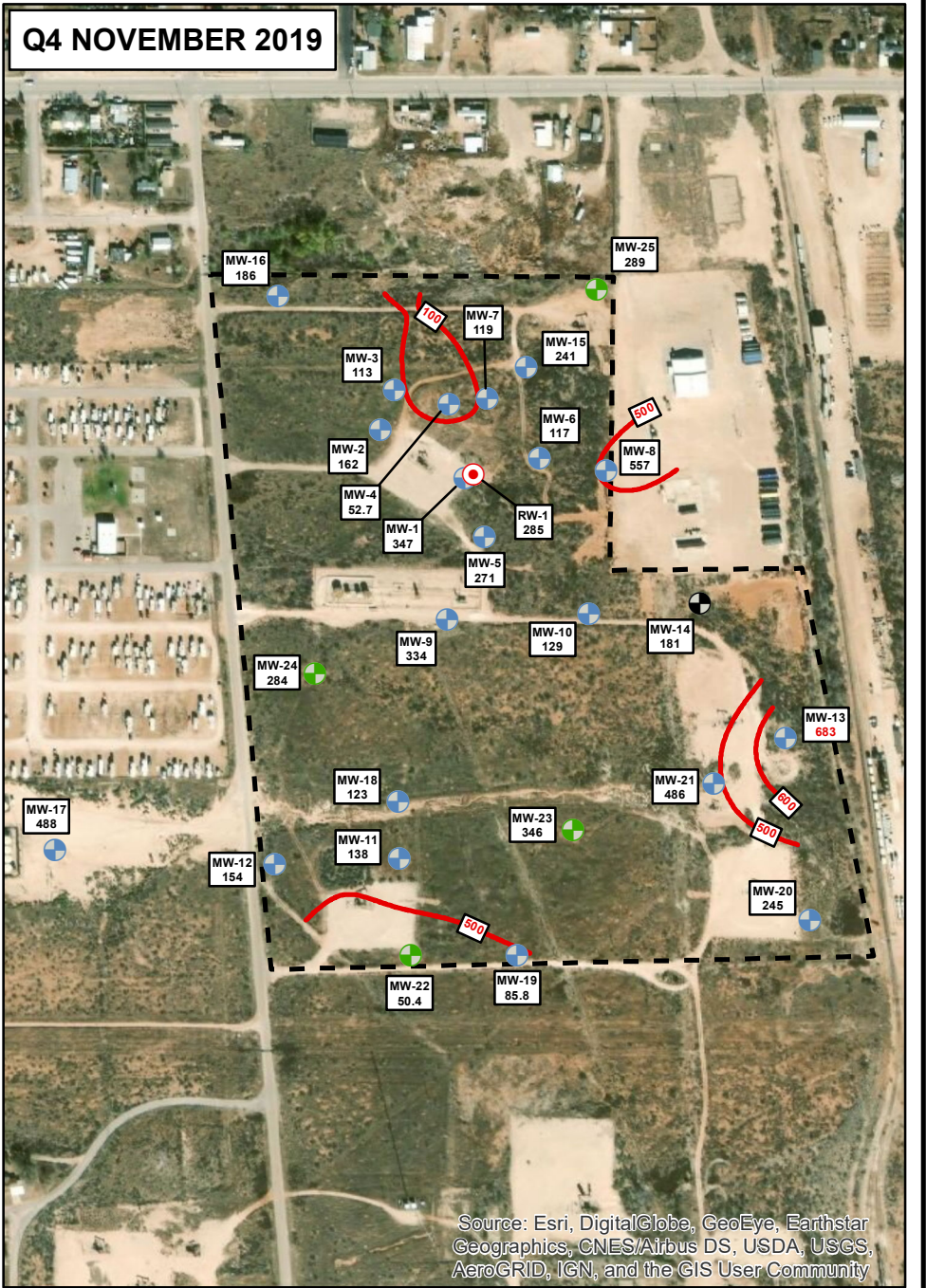
Q2 JUNE 2019



Q3 SEPTEMBER 2019



Q4 NOVEMBER 2019



Legend

- Monitoring Well Location
- 2018 Monitoring Well Location
- Recovery Well
- Globe Monitoring Well Location
- Sulfate Isoconcentration Contour
- Sulfate Concentration (mg/L)
- Sulfate Concentration (mg/L) Exceeds NMWQCC
- Other Standards for Domestic Water Supply
- Property Boundary

Notes:

1. Datum: D_WGS_1984
2. Quarter 2 Groundwater Samples were not collect for sulfate Analysis
3. Site Location: 32.432397, -103.146391

0 250 500 1,000 Feet

Chevron Environmental Management Company
Mark Owen No. 9 Reserve Pit
Lea County, New Mexico

**QUARTERLY SULFATE
ISOCONCENTRATION MAPS
2019**

ARCADIS | **FIGURE 6**

APPENDIX A

Site Background



REGULATORY BACKGROUND

On March 13, 2007, GHD, on behalf of CEMC, submitted a Stage 1 Abatement Plan (AP) for the Mark Owen No. 9 Reserve Pit to the New Mexico Oil Conservation Division (OCD). The OCD requested additional information on the soil and groundwater and GHD completed the investigations in October 2007. An Interim Investigation Report was submitted to the OCD in March 2008 summarizing the results of the October 2007 investigation.

A revised AP was submitted to the OCD in September 2013. Administrative approval for the AP was received by the OCD on November 13, 2013. The scope of work outlined in the AP was completed during 2014 and 2015. Ongoing quarterly groundwater monitoring has been completed since 2010.

REGULATORY FRAMEWORK

The OCD has regulatory jurisdiction over corrective actions conducted at the Site. The OCD, in accordance with guidance outlined by the Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993), require remediation of chlorides in groundwater to below the New Mexico Water Quality Control Commission (NMWQCC) human health standards or background. In addition to chloride, total dissolved solids (TDS), sulfate, and total alkalinity are analyzed for in each groundwater sample collected on-Site. The human health standards for the four constituents of concern (COCs) set forth in the New Mexico Administrative Code 20.6.2.3103B are shown in the NMWQCC table below.

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride	250
Sulfate (SO ₄)	600
Total Dissolved Solids (TDS)	1,000
Alkalinity	No NMWQCC Standard

Note: mg/L = milligrams per liter

Historically, groundwater was also analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX). With concurrence from the OCD, these constituents were removed from the sampling parameters following the November 2013 groundwater sampling event, as no exceedances of applicable regulatory standards were reported during monitoring events in 2013.

HYDROGEOLOGY ASSESSMENT

On December 6, 2017, and August 6, 2018, GHD and CEMC submitted to the New Mexico Office of the State Engineer (NMOSE) applications to install additional monitor wells at the Site to further delineate the chloride plume and evaluate Site hydrogeological conditions. NMOSE approvals for installation were received on December 13, 2017, and August 10, 2018.

Soil Boring and Monitor Well Installation

Four monitoring wells, MW-22 through MW-25, and one soil boring, BH-C, were installed at the Site on September 11 through 14, 2018, with the use of roto sonic drilling equipment by Cascade Environmental Drilling Services (Cascade). A monitor well was not installed at the location of boring BH-C because no saturated sand stratum was encountered.

All monitor wells were constructed using a 2-inch diameter Schedule 40 PVC threaded casing and a 10-foot long well screen (0.01-inch slot size). Well construction details included a sand filter pack around the well screen, a two-foot thick hydrated bentonite seal above the filter pack, and cement/bentonite grout to the surface. An aboveground shroud was installed around each monitor well to prevent damage from Site activities. The wells were secured with a locking watertight cap and padlock to deter tampering and/or introduction of surface water runoff into the well. Well registration documentation was submitted to the NMOSE by Cascade in December 2018.

The monitor wells were surveyed by High Mesa Consulting Group in October 2018, to determine exact well top of casing and ground surface elevations relative to a Site temporary bench mark.

GEOLOGY/HYDROGEOLOGY ASSESSMENT

Site Setting

The Site is located 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 feet in Monument Draw.

Regional Geologic Conditions

The region is characterized by a surface cover of up to 200 feet of unconsolidated to semi-lithified sediments of the Ogallala Formation consisting of sand, clay, and fluvial gravel. The upper portion of the Ogallala Formation has been heavily cemented by caliche. The Tertiary-aged sediments are underlain by the Triassic-aged Dockum Group shale ("red beds").

Site Geology

The Site boring logs used to interpret the Site geology included the logs from the October 2018 GHD field work and logs from previous groundwater assessments. The locations of the soil borings and monitor wells are shown on Figure 2. The subsurface stratigraphy typically included the following:

- A thin (0 to 2 feet) surface layer of unconsolidated fine sand
- A zone of caliche-cemented fine sand, typically 15 to 20 feet below the ground surface (ft bgs)
- An underlying unconsolidated fine sand layer ranging from 20 to greater than 30 feet thick
- A 1 to 3 foot thick calcite cemented sandstone, typically at the base of the caliche cemented sand or within the caliche cemented sand
- Gravelly sand layer, typically 5 or less feet thick, just above the Dockum "redbeds"

- Red and gray weathered shale “redbeds” of the Triassic Dockum Group that form the underlying confining layer

Geological Cross-Sections A-A' through E-E' displaying the Site geology are presented on Figures 3A through 3E, respectively. The cross-sections display an apparent dip in the bedrock surface to the southwest, whereas the ground surface slopes primarily down to the east, resulting in a thinner Ogallala section in the eastern portion of the Site. The unconsolidated sand and gravelly sand layers form the uppermost permeable water-bearing unit. The cross sections are available in the *2018 Annual Groundwater Monitoring Report*.

The boring for the proposed new well to the east of the property, BH-C, unexpectedly contained no loose sand and no water-saturated deposits. The upper caliche cemented sand zone transitioned to an unusually thick cemented sandstone zone, which continued to the top of the Dockum “redbeds.” Therefore a monitor well was not installed and the borehole was plugged and abandoned.

Hydrogeologic Conditions

Regional groundwater flow in the Ogallala Aquifer is controlled by the slope of the land surface to the south with localized eastward flow into the valley of Monument Draw. The aquifer typically behaves as an unconfined aquifer. Monument Draw is an intermittent stream that contains water only after heavy rains (Texas Water Development Board [TWDB], 2008)¹. The Dockum Group Shale is considered the underlying aquitard for the Ogallala Aquifer.

Site Hydrogeology

Groundwater beneath the Site is found within the lower Ogallala deposits. The depth to groundwater at the Site ranges from approximately 25 to 45 ft bgs, based on the groundwater monitoring event conducted in September/October 2018. The saturated thickness of the unconfined aquifer ranges from approximately 15 to 30 ft. The saturated thickness varies in conjunction with the elevation of the top of the Dockum shale. The thickest saturated portion of the Ogallala is to the southwest where the bedrock surface of the Dockum is the lowest. A dry borehole was encountered at BH-C, east of the property boundary of the Site.

At the Site, the local groundwater flow direction trends to the southeast and east with an average horizontal hydraulic gradient of approximately 0.0037 feet per foot (ft/ft), as presented in the attached figures. The southeast groundwater flow direction observed at the Site is consistent with the regional groundwater flow direction to the southeast in the Ogallala Aquifer. The deflection to the east at the eastern property boundary is likely related to the break of the slope of the land towards the Monument Draw to the east.

APPENDIX B

Field Methodology and Documentation



FIELD METHODOLOGY

Prior to sampling, static fluid water levels were measured with a conductivity/water level indicator probe to the nearest hundredth of a foot and recorded. In addition, a conductivity probe was used to record the conductivity levels every 2 feet in each well to evaluate the vertical distribution of chloride-affected groundwater. After recording conductivity levels, discrete samples were collected at the interval of highest conductivity using a Hydrasleeve™. All non-disposable groundwater sampling equipment was thoroughly decontaminated between measurements to prevent possible cross-contamination between wells. Laboratory-supplied sample containers were filled directly from the Hydrasleeve™. Groundwater samples were placed on ice in insulated coolers and chilled to a temperature of approximately 4°C (40°F). The coolers were sealed for shipment with proper chain-of-custody documentation and shipped to Eurofins TestAmerica, located in Houston, Texas, for analysis of total alkalinity (as CaCO₃) by Standard Method (SM) 2320B, chloride and sulfate by Environmental Protection Agency (EPA) Method 300.0, and total dissolved solids (TDS) by SM 2540C.



Chain of Custody

Work Order No: _____

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 (813-820-2000)

www.xenco.com Page 1 of 3

Project Manager:	Christopher Knight	Bill to: (if different)	Kegan Boyer
Company Name:	GHD	Company Name:	Chevron EMC
Address:	2135 S Loop 250 W	Address:	1400 Smith Street Room 07076
City, State ZIP:	Midland, TX. 79703	City, State ZIP:	Houston, TX. 77002
Phone:	512-506-8803	Email:	Janie.Smith@ghd.com, Christopher.Knight@ghd.com, Stephanie.castracane@ghd.com

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

Project Name:		Mark Owen No. 9		Turn Around		ANALYSIS REQUEST												Work Order Notes				
Project Number:		046121/2019		Routine ☐																		
P.O. Number:				Rush:																		
Sampler's Name:		Justin Lixen		Due Date:																		
SAMPLE RECEIPT		Temp Blank: Yes No		Wet Ice: Yes No																		
Temperature (°C):		0.510.4		Thermometer ID																		
Received Intact:		Yes No		Correction Factor: -0.1																		
Cooler Custody Seals:		Yes No N/A		Total Containers:																		
Sample Custody Seals:		Yes No N/A																				
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth	Number of Containers	Alkalinity	Chloride	Sulfate	TDS											Sample Comments	
AW-1-W-190405		GW	4-5-19	1120		1	X	X	X	X												
mw-2-W-190405				1110																		
mw-3-W-190405				1035																		
mw-4-W-190405				1045																		
mw-5-W-190405				1150																		
mw-6-W-190405				1025																		
mw-7-W-190405				1055																		
mw-8-W-190405				1140																		
mw-9-W-190405				1200																		
mw-10-W-190405				1210																		

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 Ti 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 Ti U 1631 / 245.1 / 7470 / 7471: Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		4-5-19/10:11	2		
3			4		
5			6		

12.5

Location

Mark Owen 9

Date

4-4-19

121

Project / Client

046121

CEmc

Gwm

J. Nixon J. Piggy

645 Load truck

went to U-80° 10 mph

4 gas # 8301 mid H2S # 07429 A+

Solonist # 07089 mid

head to site

845 Sign in @ Envia Fmr

Review TGSM / SSA

Begin profiling + TD wells

Set hydro sleeves @ highest

conductivity levels

1245 Kegan stopped bus on-site

(CEmc pm). Visit west + south side

1705 finish site

head to office - construction on 176

Unload truck

1920

finish for day

4-4-19

122¹¹

Location

Mark Owen 49

Date

4-5-99

Project / Client

046121

CPRC

Gunn

Darius J. Pigg

645

load truck

weather 4-76° 15 mph (cloudy)

4965-48301 1425 07429 Act

705

head to site

go to chevron office - (1-ched

closed for Friday's off).

920

Arrive @ site

Review To Sm / SSA

Begin sampling

See Sampling sheet attached
for dup's + times

1405

finish @ site

head to Xerox

1620

drop off samples @ lab

unload truck

1730

finish paperwork - send
to Stephanie.

1735

finish for day

4-5-99

MONITORING WELL SAMPLE DATA SHEET
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9
LEA COUNTY, NEW MEXICO

profile sheet

profile sheet

Well	Duplicate Sample	Depth to Water (DTW)	Depth to Product (DTP)	Total Depth	Sample Date	Sample Time	Total Alkalinity SM2320B	Metals 6010	TDS SM2540C	Chlorides, Bromides, & Sulfates EPA 300
MW-1					4-5-19	1120	x	x	x	x
MW-2						1110	x	x	x	x
MW-3						1035	x	x	x	x
MW-4						1045	x	x	x	x
MW-5						1150	x	x	x	x
MW-6	Dup1					1025	x	x	x	x
MW-7						1055	x	x	x	x
MW-8	Dup2					1140	x	x	x	x
MW-9						1200	x	x	x	x
MW-10						1210	x	x	x	x
MW-11						1330	x	x	x	x
MW-12						1400	x	x	x	x
MW-13						1230	x	x	x	x
MW-14						1220	x	x	x	x
MW-15						1015	x	x	x	x
MW-16						955	x	x	x	x
MW-17						945	x	x	x	x
MW-18						1345	x	x	x	x

MONITORING WELL SAMPLE DATA SHEET
CHEVRON ENVIRONMENTAL MANAGEMENT COMPANY
MARK OWEN #9
LEA COUNTY, NEW MEXICO

Well	Duplicate Sample	Depth to Water (DTW)	Depth to Product (DTP)	Total Depth	Sample Date	Sample Time	Total Alkalinity SM2320B	Metals 6010	TDS SM2540C	Chlorides, Bromides, & Sulfates EPA 300
MW-19					4-5-19	1310	X	X	X	X
MW-20						1250	X	X	X	X
MW-21						1240	X	X	X	X
MW-22						1320	X	X	X	X
MW-23						1300	X	X	X	X
MW-24						1230	X	X	X	X
MW-25						1005	X	X	X	X
RW-1						1130	X	X	X	X

Mark Owen No. 9

Well ID: MW-25

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-16

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-17

Date and Time: 4/4/2019

DTW

[illegible]

Mark Owen No. 9

Well ID: MW-15

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-6

Date and Time: 4/4/2019

DTW

[illegible]

Mark Owen No. 9

Well ID: Mw-4

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-7

Date and Time: 4/4/2019

DTW

TD

[illegible]

Mark Owen No. 9

Well ID: MW-2

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-11

Date and Time: 4/4/2019

DTW

Depth	Conductivity ~	Temperature °C
42.01		
44	5115	20.2
46	5603	20.2
48	6269	20.2
50	6965	20.1
52	7228	20.1
54	7373	20.1
56	9982	20.1
58	10200	20.1
60	10800	20.1
62	11000	20.0
64	11100	20.0
66	11200	20.0
68	11300	20.0
70	11400	20.0
72	11900	19.9
74	11900	19.5
76	11900	19.9
78	12000	19.9
80	12000	19.9
TD 81.27		

TD

Mark Owen No. 9

Well ID: NW-18

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-12

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: *Mu-2*

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-19

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-20

Date and Time: 4/4/2019

TD

Depth	Conductivity~	Temperature °C
25.31		
26	1573	19.1
28	1567	19.0
30	1567	19.0
32	1579	19.0
34	1568	19.1
36	1566	19.2
38	1563	19.2
40	1565	19.4
42	1564	19.4
44	1565	19.4
46	1562	19.5
48	1563	19.5
50	1563	19.5
52	1561	19.5
54	1562	19.5
56	1562	19.5
58	1562	19.5
60	1563	19.5
62	62.28	

TD

Mark Owen No. 9

Well ID: MW-22
Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-14

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-21

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: 14W-23

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: Rw-1

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-1

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-5

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-8

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW.9

Date and Time: 4/4/2019

[illegible]

Mark Owen No. 9

Well ID: MW-24

Date and Time: 4/4/2019

[illegible]

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
X MW-1	6/17	31.56	54.00	
X MW-2	6/17	35.13	60.40	
X MW-3	6/17	33.80	57.64	
X MW-4	6/17	31.89	54.30	
MW-5	6/17	30.72	52.76	
MW-6	6/18	28.64	48.68	
X MW-7	6/17	29.45	51.24	
MW-8	6/18	26.77	53.30	
MW-9	6/17	33.69	53.52	
MW-10	6/17	30.18	62.27	
MW-11	6/18	41.96	80.95	
MW-12	6/19	47.36	66.12	mucky bottom
MW-13	6/18	29.60	45.10	was already unlocked when we arrived.
MW-14	6/18	30.56	49.82	
X MW-15	6/17	28.27	46.72	
X MW-16	6/17	39.56	55.09	
MW-17	6/18	54.93	81.50	
MW-18	6/19	38.45	66.55	
MW-19	6/18	32.12	60.44	
MW-20	6/19	25.57	62.45	
MW-21	6/18	25.81	40.86	
MW-22	6/18	43.50	57.12	
MW-23	6/18	32.60	47.50	
MW-24	6/18	38.67	63.75	gauging done on 6/21. missed on the 18th.
MW-25	6/18	32.15	48.30	
X RW-1	6/17	30.91	53.80	

Well Inspection Checklist and Reporting Form

Site Name/ Location Mail Down ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification MW-1 Inspection Date 06/17/18 Inspector BS
 Measured Well Depth 54.00 Measuring Point TOE Depth to water 31.50

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ Y N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A
- Does bailer/pump travel freely to and from bottom of well? ☒ Y N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y ☒ N N/A
- Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance? Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ Y N N/A

NOTES AND

OBSERVATIONS:

Sand T-Post is old snow fence
by the well along w/ rolls of black wire.

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification MW-2 Inspection Date 06/17/19 Inspector TSC/cr
 Measured Well Depth 60.40 Measuring Point TOC Depth to water 35.13

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.)

☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

☒ N N/A
- Does bailer/pump travel freely to and from bottom of well?

☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y ☒ N/A
- Does the bailer contain excessive amounts of silt or rust?

Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance?

Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional?

☒ N N/A

NOTES AND

OBSERVATIONS: Very Sand around the well

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification MW-3 Inspection Date 06/17/19 Inspector GBL/CR
 Measured Well Depth 57.68 Measuring Point TOC Depth to water 33.50

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? ☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y ☒ N/A
- Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance? Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owens
Chevron Fuller Project Number B0047270.0007
 Well Identification MW-4 Inspection Date 06/17/19 Inspector BS/CR
 Measured Well Depth 80.9' Measuring Point TOC Depth to water 53.40

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|-----|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N/A | |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? ☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y ☒ N/A
- Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance? Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS: Well ID just marked on map.

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Allen Chevron Fuller Project Number B0047270.0007
 Well Identification mw-5 Inspection Date 04/17/19 Inspector LB
 Measured Well Depth 52.76 Measuring Point TOC Depth to water 30.72

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|---------------------------|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | ☐ N | ☐ N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | ☐ N | ☐ N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | ☐ N | ☐ N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | ☐ N | ☐ N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | ☐ N | ☐ N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | ☐ N | ☐ N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | ☐ Y | ☒ N | ☐ N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|-------------------------|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | ☐ N | ☐ N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | ☐ N | ☐ N/A |
| Does bailer/pump travel freely to and from bottom of well? | ☐ Y | ☐ N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | ☐ Y | ☐ N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | ☐ Y | ☐ N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☐ Y | ☐ N | ☒ N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | ☐ N | ☐ N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Maricaven Chevron Fuller Project Number B0047270.0007
Well Identification mw-6 Inspection Date 06/18/19 Inspector LR
Measured Well Depth 48.68 Measuring Point TDL Depth to water 28.64

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification MW-7 Inspection Date 06/17/19 Inspector OSCR
 Measured Well Depth 52.24 Measuring Point TOC Depth to water 28.45

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|-----|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N/A | |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? ☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y ☒ N/A
- Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance? Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND
OBSERVATIONS:

Well ID is not marked as M.P.

Well Inspection Checklist and Reporting Form

Site Name/ Location max even Chevron Fuller Project Number B0047270.0007
 Well Identification MW-6 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 53.30 Measuring Point TOL Depth to water 26.74

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|---|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Marathon Chevron Fuller Project Number B0047270.0007
Well Identification MW-9 Inspection Date 4/17/19 Inspector LB
Measured Well Depth 53.52 Measuring Point TDC Depth to water 33.69

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.)

Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Chen Chevron Fuller Project Number B0047270.0007
Well Identification mw -10 Inspection Date 06/17/19 Inspector LB
Measured Well Depth 62.27 Measuring Point TOC Depth to water 30.18

VISUAL INSPECTION

- | | | | |
|--|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well?..... | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration?..... | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location mark awen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification mw-11 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 80.95 Measuring Point TOL Depth to water 41.96

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Weir Chevron Fuller Project Number B0047270.0007
 Well Identification MW-12 Inspection Date 4/18/19 Inspector LB
 Measured Well Depth 106.12 Measuring Point TDC Depth to water 47.36

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|---|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS: possible muddy bottom.

Well Inspection Checklist and Reporting Form

Site Name/ Location maxil well Chevron Fuller Project Number B0047270.0007
Well Identification MW-13 Inspection Date 11/14/19 Inspector LB
Measured Well Depth 45.10 Measuring Point TOL Depth to water 27.60

VISUAL INSPECTION

- | | | | |
|--|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well?..... | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration?..... | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS: was already unlocked when we arrived.

Well Inspection Checklist and Reporting Form

Site Name/ Location max k lwen Chevron Fuller Project Number B0047270.0007
 Well Identification mw-14 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 47.82 Measuring Point TOC Depth to water 30.56

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification MW-15 Inspection Date 06/17/19 Inspector BC/CR
 Measured Well Depth 46.72 Measuring Point TOC Depth to water 28.27

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|----------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | ☒ | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | ☒ | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | ☒ |
| Is the lock on the well cover/cap clean and fully functional? | ☒ | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mert Owen Chevron Fuller Project Number B0047270.0007

Well Identification MW-16 Inspection Date 06/21/19 Inspector OSC/CR

Measured Well Depth 55.09 ~~39.56~~ Measuring Point TOC Depth to water 39.56

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? ☒ Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? ☒ Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y ☒ N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y ☒ N N/A

Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A

Does water appear discolored or have an unusual odor or appearance? Y N ☒ N/A

Is the lock on the well cover/cap clean and fully functional? ☒ Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Marathon Chevron Fuller Project Number B0047270.0007
 Well Identification MW-17 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 21.50 Measuring Point TOL Depth to water 54.93

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|---|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location main well Chevron Fuller Project Number B0047270.0007
 Well Identification MW-1E Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 466.55 Measuring Point TDC Depth to water 38.45

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location maine wen Chevron Fuller Project Number B0047270.0007
Well Identification MW-19 Inspection Date 06/10/19 Inspector LB
Measured Well Depth 100.44 Measuring Point TOL Depth to water 32.12

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location marc lewen Chevron Fuller Project Number B0047270.0007
Well Identification mw-20 Inspection Date 06/18/19 Inspector LB
Measured Well Depth 102.45 Measuring Point TOL Depth to water 25.57

VISUAL INSPECTION

- | | | | |
|---|----------|----------|------------|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 5) Is well cap in place and in good condition? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | <u>N/A</u> |

PHYSICAL INSPECTION

- | | | | |
|---|----------|----------|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Does bailer/pump travel freely to and from bottom of well? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | <u>Y</u> | <u>N</u> | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | <u>N</u> | <u>N/A</u> |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location mark allen Chevron Fuller Project Number B0047270.0007
 Well Identification MW-21 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 45.26 Measuring Point TOL Depth to water 45.41

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location mark allen Chevron Fuller Project Number B0047270.0007
 Well Identification mw-22 Inspection Date 02/12/19 Inspector LB
 Measured Well Depth 57.12 Measuring Point TOL Depth to water 43.50

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | <u>N/A</u> |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Marik Leach ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification mw-23 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 47.50 Measuring Point TDL Depth to water 32.00

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|---|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location marle well Chevron Fuller Project Number B0047270.0007
Well Identification MW-24 Inspection Date 06/18/19 Inspector LB
Measured Well Depth 103.75 Measuring Point TCL Depth to water 38.07

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | <u>N</u> | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.)

Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS: mi

Well Inspection Checklist and Reporting Form

Site Name/ Location marc wen Chevron Fuller Project Number B0047270.0007
 Well Identification mw - 25 Inspection Date 06/18/19 Inspector LB
 Measured Well Depth 48.30 Measuring Point TOL Depth to water 32.15

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.)

Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen ~~Chevron Fuller~~ Project Number B0047270.0007
 Well Identification 720-1 Inspection Date 06/17/13 Inspector BS/ER
 Measured Well Depth 5340 Measuring Point TDC Depth to water 30.91

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.)

☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

☒ N N/A
- Does bailer/pump travel freely to and from bottom of well?

☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y ☒ N/A
- Does the bailer contain excessive amounts of silt or rust?

Y N ☒ N/A
- Does water appear discolored or have an unusual odor or appearance?

Y N ☒ N/A
- Is the lock on the well cover/cap clean and fully functional?

☒ N N/A

NOTES AND

OBSERVATIONS:

(1) plastic drum T-Ports, old brass fence
eround well. (See photo.)

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-1
Static Water Level: 31.56
Stop Time: 1521

Date: 06/17/19
 Personnel: OS/CR
 Total Depth: 54.00
 Start Time: 1508

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-2
Static Water Level: 35.13
Stop Time: 1425

Date: 06/17/19
 Personnel: BS/CR
 Total Depth: 60.40
 Start Time: 1419

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-3
Static Water Level: 33.80
Stop Time: 1412

Date: 06/17/19
Personnel: JSL/CIR
Total Depth: 57.64
Start Time: 1401

$$\Delta S_{\text{eq}} HSc \rightarrow 54$$

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-4
Static Water Level: 31.89
Stop Time: 1840

Date: 06/17/19
Personnel: BCF/R
Total Depth: 54.30
Start Time: 1436

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark owen

Well Identification: mw-5

Static Water Level: 30.72

Stop Time: _____

Date: 06/17/19

Personnel: JL / CR

Total Depth: 52.740

Start Time: 1 536

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: mw-6
Static Water Level: 28.64
Stop Time: 1320

Date: 02/18/19

Personnel: JL/LB

Total Depth: 48.68

Start Time: 1317

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mock Duck
Well Identification: MW-7
Static Water Level: 28.45
Stop Time: 1340

Date: 06/17/19
Personnel: BSC/CR
Total Depth: 52.24
Start Time: 1336

x 500 175

Well Conductivity Profile Field data Sheet

Site Name: mark Owen
Well Identification: mw-e
Static Water Level: 26.77
Stop Time: 1335

Date: 06/18/19

Personnel: JL/LB

Total Depth: 53.70

Start Time: 1331

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark wen
Well Identification: mw - 9
Static Water Level: 33.69
Stop Time: _____

Date: 06/17/19

Personnel: JL/LP

Total Depth: 83.52

Start Time: 1557

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark wen
Well Identification: MW-10
Static Water Level: 30.18
Stop Time: _____

Date: 06/17/19

Personnel: JL / CN

Total Depth: 62.27

Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark owen
Well Identification: mw - 11
Static Water Level: 41.96
Stop Time: 11:44

Date: 06/18/19

Personnel: JL/LB

Total Depth: 86.95

Start Time: 11:40

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark owen
Well Identification: mw-12
Static Water Level: 47.38
Stop Time: 11:58 am

Date: 06/18/19
 Personnel: JL/LN
 Total Depth: 606.12
 Start Time: 11:54 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark wen
Well Identification: mw-13
Static Water Level: 27.00
Stop Time: 10:15 am

Date: 06/18/19

Personnel: JL/LB

Total Depth: 45.10

Start Time: 10:13 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark oven
Well Identification: mw-14
Static Water Level: 36.56
Stop Time: 9:42 am

Date: 06/18/19

Personnel: JL/LB

Total Depth: 47.82

Start Time: 9:39 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Jones
Well Identification: MW-15
Static Water Level: 25.77
Stop Time: 1320

Date: 06/17/19
Personnel: JB / CR
Total Depth: 86.72
Start Time: 1322

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MLW-16
Static Water Level: 39.56
Stop Time: 1304 / 1816

Date: 06/17/19
Personnel: OB/CB
Total Depth: 55.09
Start Time: ~~1306~~ 1304

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark oven
Well Identification: mw-17
Static Water Level: 54.93
Stop Time: 12:53

Date: 06/18/19

Personnel: JL/LR

Total Depth: 81.50

Start Time: 12:47

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mare Owen
Well Identification: mw-18
Static Water Level: 36.45
Stop Time: 11:26 am

Date: 06/16/19

Personnel: JL / LB

Total Depth: 46.55

Start Time: 11:20 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark ower
Well Identification: mw-19
Static Water Level: 32.12
Stop Time: 12:37 pm

Date: 06/18/19

Personnel: JL/LB

Total Depth: 600.44

Start Time: 12:34 pm

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark oven

Well Identification: MW-20

Static Water Level: 25.57

Stop Time: 10:44 am

Date: 06/18/19

Personnel: JL / LB

Total Depth: 62.45

Start Time: 10:37 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark oven
Well Identification: mw-21
Static Water Level: 25.81
Stop Time: 10:29 am

Date: 06/18/19

Personnel: JL / LB

Total Depth: 410.26

Start Time: 10:26 am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: marla owen
Well Identification: mw-22
Static Water Level: 43.50
Stop Time: 12:16 pm

Date: 06/18/19

Personnel: JL / LR

Total Depth: 57.12

Start Time: 12:10 pm

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark ower
Well Identification: mw-23
Static Water Level: 32.60
Stop Time: 11:09 am

Date: 06/16/19

Personnel: JL/LB

Total Depth: 47.50

Start Time: 11:07am

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-24
Static Water Level: 38.05
Stop Time: 9:13 am

Date: 22 / 21 / 19

Personnel: JL / LR

Total Depth: 603, 75

Start Time: 9:06

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: mark oven
Well Identification: mw-25
Static Water Level: 32.15
Stop Time: 1351

Date: 06/18/19

Personnel: JL/LB

Total Depth: 48.30

Start Time: 1353

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: R60-1
Static Water Level: 30.91
Stop Time: 1457

Date: 06/17/19
 Personnel: USC/CZ
 Total Depth: 53.40
 Start Time: 1443

[illegible]

of Ser 145 $\rightarrow$ 52

ARCADIS Micropurge Sampling Log

Project: LVX HES Transfer Project No. _____ Page 1 of 1
 Site Location: mark own Date 9/21/19
 Site/Well No. MW - 1 Replicate No. — Code No. _____
 Weather: hot, sunny Sampling Time: Begin 10:42 End 10:42

Evacuation Data

Sounded Well Depth (ft bmp) 54.00
 Depth to Water (ft bmp) 31.56
 Gallons Pumped/Bailed Prior to Sampling Full hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method hydraulic

Field Parameters

Color tan
 Odor —
 Appearance rust in water
 *IRON, ferrous N/A
 *SULFIDES ↓
 Data Frame _____
 Remarks rust on 1 in hydraulic
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND ()	Turbidity (NTU)		
10:42 am	—	—	1.37	183.9	10.77	21.06	24.30	—		

Constituents Sampled	Container Description	Number	Preservative

bmp below measuring point
 °C degrees Celsius
 ft feet
 ml/min milliliters per minute
 mg/L milligrams per liter
 ml milliliter
 mS/cm millisiemens per centimeter
 mS microsiemens
 N/A not applicable
 NR not recorded
 s.u. standard units
 mv millivolts
 NTU Nephelometric Turbidity Units
 umhos/cm Micromhos per centimeter
 VOC Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer Project No. _____ Page 1 of 1
 Site Location: Mark Lane Date Dec 11/19
 Site/Well No. MW-2 Replicate No. _____ Code No. _____
 Weather: Hot, sunny Sampling Time: Begin 10:23 End 10:23 am

Evacuation Data

Sounded Well Depth (ft bmp) 600.40
 Depth to Water (ft bmp) 600.40B 3513
 Gallons Pumped/Bailed Prior to Sampling Full Hydroclave
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydroclave

Field Parameters

Color tan
 Odor —
 Appearance sediment
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
10:23 am	—	—	5723	600.5	7.20	21.68	1.713	—		

Constituents Sampled	Container Description	Number	Preservative

bmp below measuring point
 °C degrees Celsius
 ft feet
 ml/min milliliters per minute
 mg/L milligrams per liter
 ml milliliter
 mS/cm milisiemens per centimeter
 mS microsiemens
 N/A not applicable
 NR not recorded
 s.u. standard units
 mv milivolts
 NTU Nephelometric Turbidity Units
 umhos/cm Micromhos per centimeter
 VOC Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer

Project No. _____

Page 1 of 1

Site Location: MAINE AVER

Date 06/21/19

Site/Well No. MLW-3

Replicate No. _____

Code No. _____

Weather: HOT, SUNNY

Sampling Time: Begin 10:10

End 10:16

Evacuation Data

Sounded Well Depth (ft bmp) 57.64

Depth to Water (ft bmp) 33.80

Gallons Pumped/Bailed Prior to Sampling FULL HYDRAULIC

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method HYDRAULIC

Field Parameters

Color Clear

Odor _____

Appearance Clear

*IRON, ferrous N/A

*SULFIDES _____

Data Frame _____

Remarks _____

Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND	Turbidity (NTU)		
10:16	—	—	10.51	163.0	7.31	21.59	1.445	—		

Constituents Sampled

Container Description

Number

Preservative

bmp below measuring point
°C degrees Celsius
ft feet
ml/min milliliters per minute
mg/L milligrams per liter

ml milliliter
mS/cm millisiemens per centimeter
mS microsiemens
N/A not applicable
NR not recorded

s.u. standard units
mv millivolts
NTU Nephelometric Turbidity Units
umhos/cm Micromhos per centimeter
VOC Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CUX HEU Transfer
 Site Location: Marl Way
 Site/Well No. MW-4
 Weather: Hot sunny

Project No. _____

Page 1 of 1

Date 06/11/19

Replicate No. Dup-2

Code No. _____

Sampling Time: Begin 10:30

End 10:50

Evacuation Data

Sounded Well Depth (ft bmp) 54.30
 Depth to Water (ft bmp) 31.89
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic

Field Parameters

Color tan
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES ↓
 Data Frame ↓
 Remarks Dup-2 collected @ 10:34 am
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
10:30 am	—	—	4.01	186.4	7.23	21.83	6634	—		

Constituents Sampled

Container Description

Number

Preservative

bmp	below measuring point	ml	milliliter	S.U.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CUX HEU Transfer
 Site Location: mark well
 Site/Well No. MW-5
 Weather: Het, windy

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 10:50 am

Page 1 of 1
 Date 06/21/19
 Code No. _____
 End 10:50 am

Evacuation Data

Sounded Well Depth (ft bmp) 52.76
 Depth to Water (ft bmp) 30.72
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic

Field Parameters

Color TCN
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND ()	Turbidity (NTU)		
10:50am	—	—	0.41	191.8	6.82	21.67	14.18	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer

Project No. _____

Page 1 of 1

Site Location: Mark Owen

Date 06/21/19

Site/Well No. MW-6

Replicate No. DUP-1

Code No. _____

Weather: Hgt, sunny

Sampling Time: Begin 9:41

End 9:41

Evacuation Data

Sounded Well Depth (ft bmp) 48.68

Depth to Water (ft bmp) 28.64

Gallons Pumped/Bailed Prior to Sampling Full hydrant

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method Hydrant

Field Parameters

Color light tan

Odor _____

Appearance cloudy

*IRON, ferrous N/A

*SULFIDES ↓

Data Frame _____

Remarks DUP-1 taken @

9:45 am

Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
9:41	—	—	4.22	121.7	7.19	21.10	3.403	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer

Project No. _____

Page 1 of 1

Site Location: Mark Green

Date 06/21/19

Site/Well No. mw-7

Replicate No. _____

Code No. _____

Weather: Het, sunny

Sampling Time: Begin 10:02 am

End 10:02 am

Evacuation Data

Sounded Well Depth (ft bmp) 51.24

Depth to Water (ft bmp) 29.45

Gallons Pumped/Bailed Prior to Sampling Full Hydroserve

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method Hydroserve

Field Parameters

Color clear

Odor _____

Appearance clear

*IRON, ferrous N/A

*SULFIDES _____

Data Frame _____

Remarks _____

Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
10:02 am	—	—	4.96	115.8	7.58	22.20	1.091	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: LVX HES Transfer Project No. _____ Page 1 of 1
 Site Location: Mark Wren Date 06/21/19
 Site/Well No. MW-2 Replicate No. _____ Code No. _____
 Weather: Sunny, Hot Sampling Time: Begin 9:50 End 9:50

Evacuation Data

Sounded Well Depth (ft bmp) 53.30
 Depth to Water (ft bmp) SL 20.97
 Gallons Pumped/Bailed Prior to Sampling Full Hydrovactor
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydrovactor

Field Parameters

Color TLW
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
9:50	—	—	3.45	137.0	6.42	20.57	6.957	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HEU Transfer Project No. _____ Page 1 of 1
 Site Location: Marble Hill Date 06/21/19
 Site/Well No. MW-9 Replicate No. _____ Code No. _____
 Weather: H4, sunny Sampling Time: Begin 11:00 am End 11:00 am

Evacuation Data

Sounded Well Depth (ft bmp) 53.52
 Depth to Water (ft bmp) 33.69
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic

Field Parameters

Color Clear
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
11:00 am	—	—	4.04	180.0	6.82	21.62	14.80	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer

Project No. _____

Page 1 of 1

Site Location: mark oven

Date 06/21/19

Site/Well No. MW-10

Replicate No. _____

Code No. _____

Weather: Hot, sunny

Sampling Time: Begin 11:04 am

End 11:04 am

Evacuation Data

Sounded Well Depth (ft bmp) 62.27

Depth to Water (ft bmp) 30.10

Gallons Pumped/Bailed Prior to Sampling Full hydraulic

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method 1 hydraulic

Field Parameters

Color tan

Odor _____

Appearance cloudy

*IRON, ferrous N/A

*SULFIDES _____

Data Frame _____

Remarks ↓

Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
11:04 am	—	—	1.27	190.3	6.33	23.36	7.355	—		

Constituents Sampled

Container Description

Number

Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX NEW Transfer

Project No. _____

Page 1 of 1

Site Location: mark oven

Date 06/21/19

Site/Well No. MW-11

Replicate No. _____

Code No. _____

Weather: Hot, Sunny

Sampling Time: Begin 11:58 am

End 11:58 am

Evacuation Data

Sounded Well Depth (ft bmp) 80.95

Depth to Water (ft bmp) 41.96

Gallons Pumped/Bailed Prior to Sampling Full Hydraulics

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method Hydraulics

Field Parameters

Color TLN

Odor _____

Appearance _____

*IRON, ferrous N/A

*SULFIDES _____

Data Frame _____

Remarks ✓

Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
11:58 am	—	—	3.27	238.0	6.55	24.54	10.627	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	µmhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS

Micropurge Sampling Log

Project: Cox HES Transfer
 Site Location: more over
 Site/Well No. MW-12
 Weather: Hct, sunny

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 11:52

Page 1 of 1
 Date 06/21/19
 Code No. _____
 End 11:52

Evacuation Data

Sounded Well Depth (ft bmp) 66.12
 Depth to Water (ft bmp) 47.38
 Gallons Pumped/Bailed Prior to Sampling Full Hydravleave
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydravleave

Field Parameters

Color Tan
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND ()	Turbidity (NTU)		
11:52	—	—	1.55	214.5	6.78	22.49	4.201	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVXHEU Transfer
 Site Location: mark oven
 Site/Well No. MW-13
 Weather: Hot, Sunny

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 11:15

Page 1 of 1
 Date 06/21/19
 Code No. _____
 End 11:15

Evacuation Data

Sounded Well Depth (ft bmp) 45.10
 Depth to Water (ft bmp) 27.60
 Gallons Pumped/Bailed Prior to Sampling Full hydroheave
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydroheave

Field Parameters

Color red
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel LB/JL

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
11:18 AM	—	—	0.00	226.9	6.59	21.72	25.660	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS
Micropurge Sampling Log

Project: CVX HEU Transfer
 Site Location: Mark Green
 Site/Well No. MW-14
 Weather: Hot, Sunny

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 11:10 AM

Page 1 of 1
 Date 6/21/19
 Code No. _____
 End 11:10 AM

Evacuation Data

Sounded Well Depth (ft bmp) 47.82
 Depth to Water (ft bmp) 30.56
 Gallons Pumped/Bailed Prior to Sampling Full hydroseal
 Sample Pump Intake Depth (ft bmp) 14/12
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydroseal

Field Parameters

Color tan
 Odor _____
 Appearance _____
 *IRON, ferrous 14/12
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL / LR

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp °C	COND ()	Turbidity (NTU)		
11:10 AM	—	—	3.22	182.6	7.17	21.44	3.527	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS
Micropurge Sampling Log

Project: LUX HES Transfer Project No. _____ Page 1 of 1
 Site Location: Mark Green Date 06/21/19
 Site/Well No. MW-15 Replicate No. _____ Code No. _____
 Weather: HOT, sunny Sampling Time: Begin 9:24 End 9:34

Evacuation Data

Sounded Well Depth (ft bmp) 416.72
 Depth to Water (ft bmp) 28.27
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic Levee
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic Levee

Field Parameters

Color tan
 Odor _____
 Appearance cloudy
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
9.34	—	—	4.35	113.6	7.17	20.48	3.947	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HED Transfer Project No. _____ Page 1 of 1
 Site Location: Marathon Date 06/21/19
 Site/Well No. MW-16 Replicate No. _____ Code No. _____
 Weather: Hct, Sunny Sampling Time: Begin 9:23 am End 9:23 am

Evacuation Data

Sounded Well Depth (ft bmp) 55.04
 Depth to Water (ft bmp) 39.56
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic

Field Parameters

Color tan
 Odor _____
 Appearance cloudy
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
9:23 am	—	—	6.36	97.2	7.33	20.19	2203	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	µmhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

Microbore Sampling Log

Project: CUX NEW TRANSFER
 Site Location: MARK WREN
 Site/Well No. MW-18
 Weather: Hot, sunny

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 12:00pm

Page 1 of 1
 Date 05/21/19
 Code No. _____
 End 12:00pm

Evacuation Data

Sounded Well Depth (ft bmp) 106.55
 Depth to Water (ft bmp) 38.45
 Gallons Pumped/Bailed Prior to Sampling Full Hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydraulic

Field Parameters

Color red
 Odor _____
 Appearance murky
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel DL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µmhos/cm)	Turbidity (NTU)		
12:00pm	—	—	2.56	212.4	6.93	22.53	3.060	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HCU Transfer
 Site Location: mark own
 Site/Well No. MW-19
 Weather: Hot, Sunny

Project No. _____

Page 1 of 1

Date 06/21/14

Replicate No. _____

Code No. _____

Sampling Time: Begin 11:37

End 11:37

Evacuation Data

Sounded Well Depth (ft bmp) 60.44
 Depth to Water (ft bmp) 32.12
 Gallons Pumped/Bailed Prior to Sampling Full Hydratec
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydratec

Field Parameters

Color red
 Odor _____
 Appearance Muddy
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
11:37	—	—	5.48	180.2	7.42	21.09	0.824	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS
Micropurge Sampling Log

Project: CUX HES Transfer
 Site Location: mark awen
 Site/Well No. MD-20
 Weather: Hct, windy

Project No. _____

Page 1 of 1

Date 06/21/19

Replicate No. _____

Code No. _____

Sampling Time: Begin 11:29 am

End 11:29 am

Evacuation Data

Sounded Well Depth (ft bmp) 42.45
 Depth to Water (ft bmp) 25.57
 Gallons Pumped/Bailed Prior to Sampling Full Hydratee
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydratee

Field Parameters

Color red
 Odor _____
 Appearance muddy
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp °C	COND ()	Turbidity (NTU)		
<u>11:29 am</u>	<u>—</u>	<u>—</u>	<u>3.59</u>	<u>175.8</u>	<u>7.23</u>	<u>20.77</u>	<u>1.636</u>	<u>—</u>		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: CVX HES Transfer
 Site Location: Mark Green
 Site/Well No.: MW-21
 Weather: Hgt, sunny

Project No. _____

Page 1 of 1

Date 06/21/19

Replicate No. _____

Code No. _____

Sampling Time: Begin 11:23

End 11:23

Evacuation Data

Sounded Well Depth (ft bmp) 40.86
 Depth to Water (ft bmp) 25.81
 Gallons Pumped/Bailed Prior to Sampling Full hydravac
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydravac

Field Parameters

Color red
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
11:23	—	—	0.86	215.5	10.51	21.25	25.34	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS
Micropurge Sampling Log

Project: CVX HEU Transfer Project No. _____ Page 1 of 1
 Site Location: main well Date: Oct 21 / 19
 Site/Well No. MW-22 Replicate No. 1 Code No. _____
 Weather: Hot, sunny Sampling Time: Begin 11:43 End 11:43

Evacuation Data

Sounded Well Depth (ft bmp) 57.12
 Depth to Water (ft bmp) 43.50
 Gallons Pumped/Bailed Prior to Sampling Full hydraulic
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method hydraulic

Field Parameters

Color clear
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks ↓
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp °C	COND ()	Turbidity (NTU)		
11:43am	—	—	6.61	191.1	7.47	21.76	0.725	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS
Micropurge Sampling Log

Project: CVX HES Transfer
 Site Location: marsh area
 Site/Well No. MW-25
 Weather: Hot, sunny

Project No. _____
 Replicate No. _____
 Sampling Time: Begin 9:29

Page 1 of 1
 Date 06/21/19
 Code No. _____
 End 9:29

Evacuation Data

Sounded Well Depth (ft bmp) 48.30
 Depth to Water (ft bmp) 32.15
 Gallons Pumped/Bailed Prior to Sampling Full Hydrovacuette
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydrovacuette

Field Parameters

Color light yellow
 Odor _____
 Appearance clear
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks _____
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
9:29	—	—	2.83	123.3	7.00	20.37	10,978	—		

Constituents Sampled	Container Description	Number	Preservative

brp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	millisiemens per centimeter	mv	millivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	µmhos/cm	Micromhos per centimeter
mg/L	milligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS Micropurge Sampling Log

Project: LVX HED Transfer Project No. _____ Page 1 of 1
 Site Location: mark wep Date 06/21/19
 Site/Well No. RW-1 Replicate No. _____ Code No. _____
 Weather: sunny, hot Sampling Time: Begin 10:38 End 10:38

Evacuation Data

Sounded Well Depth (ft bmp) 53.40
 Depth to Water (ft bmp) 30.91
 Gallons Pumped/Bailed Prior to Sampling Full Hydroseal
 Sample Pump Intake Depth (ft bmp) N/A
 Sample Pump controller Settings (cpm/psi) _____
 Purge Time Begin _____ End _____
 Pumping Rate (gpm) _____
 Evacuation Method Hydroseal

Field Parameters

Color Clear
 Odor _____
 Appearance _____
 *IRON, ferrous N/A
 *SULFIDES _____
 Data Frame _____
 Remarks see note on hydroseal
 Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (°C)	COND (µS/cm)	Turbidity (NTU)		
10:38	—	—	2.82	140.2	7.05	22.35	17.84	—		

Constituents Sampled	Container Description	Number	Preservative

bmp below measuring point
 °C degrees Celsius
 ft feet
 ml/min milliliters per minute
 mg/L milligrams per liter
 ml milliliter
 mS/cm millisiemens per centimeter
 mS microsiemens
 N/A not applicable
 NR not recorded
 s.u. standard units
 mv millivolts
 NTU Nephelometric Turbidity Units
 umhos/cm Micromhos per centimeter
 VOC Volatile Organic Compounds

Location Mare aux
at their

Project / Client

Date 06/12/19

Conductivity Profile

ID	DTU	TD	Depth	Concl.	Temp.
MU-24	38.07	103.75	38	5.127	20.24
<u>Well</u>					
			40	5.193	19.62
			42	5.193	19.45
			44	5.192	19.43
			46	5.191	19.44
			48	5.191	19.45
			50	5.192	19.45
			52	5.192	19.45
			54	5.183	19.46
			56	7.480	19.45
			58	10.96	19.44
			60	12.76	19.43
			62	12.93	19.42
			64 LB		

* ~~at the bottom~~
* missed on
the 12th,
doing everything
on 21st.
Well sample
lost.

Start: 9:08 am

Stop: 9:13 am

Location Mare aux

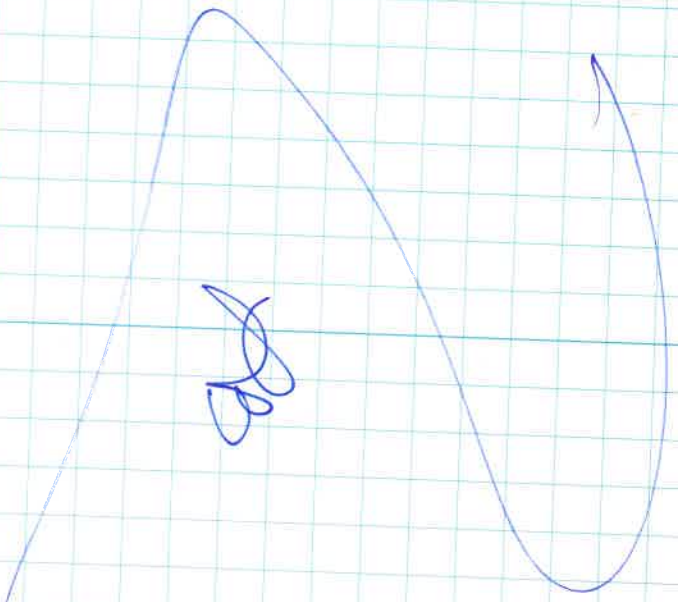
Project / Client

Sampling / Parameters

Date 06/12/19

ID Time DO at pH Temp. Cnd.

MU-23	12:15	1.14	248.3	6.58	22.91	10.25
<u>veg. muddy</u>						
MU-17	12:25	2.53	158.3	6.61	23.19	23.94
<u>red muddy</u>						
MU-24	12:34	12.10	288.4	6.99	24.97	5.15
<u>clear</u>						



Note on the Rain.

Dunes

14440/14605

~~0701~~ 0701. Drove to the site
 0801 Arrived on site. Picked up HS
 0840 Signed in @ CUK Bunker
 Boogie Drilled water, 14:5
 floods.
 0900 Back on site.

Geology

WT: 54.94 * MW: 17 * TD: 80.92

Depth: Cor: Temp:

55 15.52 19.64

57 15.57 19.60

59 15.70 19.57

61 16.00 19.51

63 16.48 19.47

65 16.81 19.48

67 16.94 19.46

69 17.06 19.45

71 17.29 19.44

73 18.66 19.45

75 20.72 19.45

77 22.27 19.46

79 * 24.58 * 19.47

Location Mark Owen

Date 09/10/19 107

Project / Client

		1413	455	C. 1.6	10.00	240
		Conc:	pH:	pH:	pH:	0.127
SN#		1416	4.00	7.00	10.03	240.0
8975						
200:		1438	4.25	6.93	10.22	241.7
Temp:		25.04	25.44	25.24	25.25	25.14
Wt:	43.52	1 MW-22 *				TP: 43.52 57.13
Depth		Conc:				67.03
44		0.870				Temp
46		0.840				19.75
48		0.828				19.66
50		0.826				19.60
52		0.826				19.57
54		0.827				19.58
56		0.826				19.60
58		0.827				19.60
60		0.828				19.63
62		0.829				19.64
64		0.829				19.65
66		* 0.829 *				19.65
						19.66

Rite in the Rain.



WL	* MW-19 *	TD 60.19
39.20		
Depth:	Condi:	Temp:
40	0.918	19.92
42	0.921	19.75
44	0.923	19.71
46	0.919	19.70
48	0.916	19.71
50	0.913	19.73
52	0.913	19.75
54	0.914	19.77
56	0.914	19.78
58	0.914	19.79

WL: 26.13	* MW-20 *	TD: 62.13
Depth	Condi:	Temp:
27	2.287	19.39
29	2.375	19.07
31	2.452	18.91
33	2.499	18.88
35	2.519	18.88
37	2.528	18.90
39	2.525	18.93
41	2.533	18.97
43	2.534	19.00

Location

Auck Ovens

Date:

08/10/19

109

Project / Client

Depth:	Condi:	Temp:
45	2.533	19.05
47	2.531	19.09
49	2.533	19.13
51	2.530	19.17
53	2.530	19.20
55	2.532	19.24
57	2.532	19.26
59	2.531	19.27
61	2.529	19.31
OK: 23.98 * MW-13 * TD: 45.09		
Depth	Condi:	Temp:
28	23.37	19.51
30	23.43	19.31
32	23.55	19.17
34	23.82	19.14
36	23.90	19.16
38	23.93	19.18
40	23.92	19.22
42	23.91	19.25
44	23.84	19.29

Rite in the Rain.

WL: 26.17	* MW-21 *	TD: 40.76
Depth:	Cond:	Temp:
27	23.59	19.89
29	23.72	19.35
31	23.84	19.23
33	23.89	19.20
35	23.90	19.19
37	23.91	19.20
39	* 23.89 *	19.23
41		

WL: 32.86	* MW-23 *	TD: 47.38
Depth:	Cond:	Temp:
34	8.747	20.91
36	8.715	20.09
38	8.757	19.91
40	9.879	19.84
42	14.92	19.83
44	16.62	19.86
46	* 16.74 *	19.88

WL: 38.50	* MW-18 *	TD: 66.56
Depth:	Cond:	Temp:

Location

Mark Owen

Date

09/10/18

111

Project / Client

Ezer

Depth:	Cond:	Temp:
40	2.936	20.24
42	2.969	19.99
44	3.021	19.77
46	3.178	19.76
48	3.408	19.76
50	3.639	19.77
52	3.801	19.78
54	4.026	19.80
56	4.203	19.81
58	4.925	19.83
60	5.182	19.83
62	5.338	19.84
64	5.405	19.85
66	X 4.387 X	19.89
Wt: 42.00	X MW-11 X	TD: 80.92
Depth	Cond:	Temp:
42	6.726	19.99
44	6.382	19.88
46	6.884	19.83
48	7.531	19.82
50	8.140	19.80
52	8.709	19.80
54	9.713	19.81

Rite in the Rain.

Depth	Condi	Temp
56	11.95	19.82
58	12.48	19.83
60	12.65	19.83
62	12.65	19.83
64	12.63	19.83
66	12.66	19.83
68	12.65	19.83
70	12.65	19.83
72	12.65	19.81
74	12.65	19.80
76	12.65	19.79
78	12.66	19.78
80	12.44	19.77

WHi: 47.37

MW-12

TD: 65.90

Depth:	Condi:	Temp:
48	3.189	21.19
50	3.245	20.56
52	3.363	20.19
54	3.492	20.18
56	3.671	20.15
58	3.956	20.15
60	4.474	20.15
62	5.378	20.15
64	6.616	20.15

Location

Mark Owen

Date

08/10/15

113

Project / Client

WL: 38.17	✓ MW-24 X	TD: 63.74
Depth:	Cond:	Temp:
39	4.761	20.56
41	4.744	19.92
43	4.738	19.85
45	4.737	19.84
47	4.733	19.83
49	4.731	19.83
51	4.734	19.84
53	4.737	19.85
55	4.958	19.88
57	7.383	19.90
59	10.42	19.91
61	11.68	19.92
63	11.59	19.95

WL: 33.88	✓ MW-9 X	TD: 53.34
Depth:	Cond:	Temp:
34	1.994	19.83
36	2.015	19.49
38	2.076	19.44
40	2.219	19.43
42	2.489	19.46
44	2.713	19.49
46	4.269	19.52

Rite in the Rain.



Depth:	Cond:	Temp:
48	12.92	19.56
50	20.07	19.60
52	* 22.89 *	19.64
54		
ax: 30.57	✓ x MW-10 x	TD: 61.49
Depth	Cond:	Temp:
32	2.434	19.94
34	2.475	19.74
36	2.658	19.64
38	3.187	19.63
40	4.748	19.63
42	5.995	19.66
44	7.192	19.70
46	7.353	19.72
48	7.598	19.74
50	7.604	19.75
52	7.603	19.77
54	7.602	19.78
56	7.601	19.79
58	7.600	19.79
60	7.597	19.80

Location North Owen

Date 05/10/19 115

Project / Client

[Signature]

Wt: 30.99		* MW-14 *		TD: 47.70	
Depth		Cond:		Temp:	
32		3.584		20.34	
34		3.507		19.81	
36		3.541		19.67	
38		3.576		19.64	
40		3.550		19.63	
42		3.547		19.62	
44		3.533		19.63	
46		* 3.559 *		19.63	
48					
Wt: 39.78		* MW-18 *		TD: 54.85	
Depth:		Cond:		Temp:	
40		2.051		20.12	
42		2.068		19.44	
44		2.080		19.22	
46		2.095		19.18	
48		2.110		19.15	
50		2.135		19.17	
52		2.165		19.20	
54		* 2.178 *		19.24	



wh: 32,33	XMO-25*	TD: 48.24
Depth	Cond:	Temp:
34	6.516	20.05
36	6.512	19.85
38	6.557	19.79
40	6.778	19.76
42	6.854	19.76
44	6.873	19.77
46	6.886	19.80
48	5.728	19.85
50		

1714 Signed out @ EDX office.
1820 At home

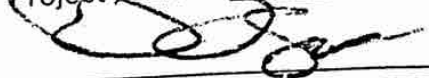
Location

Mark Owan

Date 08/11/19

117

Project / Client



14606 / 14757

0700 Drove to the site.

0800 Arrive on site T60M / T70M /
BA.

0816 Signed in @ COX office.

0825 Arrive on site.

WA: 29.70

* MW-7 * TD: 51.14

Depth

Cond:

Temp:

30

0.797

19.95

32

0.793

19.90

34

0.783

19.86

36

0.795

19.82

38

0.801

19.81

40

0.808

19.81

42

0.813

19.81

44

0.914

19.81

46

1.874

19.83

48

2.370

19.85

50

3.096

19.87

WA: 28.56

* MW-15 *

TD: 46.59

Depth

Cond:

Temp:

30

1.856

19.56

32

2.735

19.44

34

3.742

19.36

36

3.762

19.37

Rite in the Rain.

Project / Client

Roll

[illegible]

SN#	# YST Col. #	4.00	7.00	10.00	24.00
	Co-3:	pH:	pH:	pH:	OTR:
8875	1413	4.00	7.40	10.14	240.0
MOD:	1342	4.73	6.21	11.22	242.5
Temp:	23.53	24.29	24.29	24.01	24.09
Wk:	28.91	# MW-6 #	TD:		48.59
Depth		Cond:			Temp:
30		1.297			19.33
32		1.298			19.80
34		1.312			19.75
36		1.394			19.72
38		1.962			19.72
40		3.356			19.73

Location

Mark Owen

Date

09/11/79

119

Project / Client

Depth:

Concl:

Temp:

42

3.736

19.74

44

3.837

19.75

46

3.860

19.77

48

3.903

19.80

Wk: 27.03

X m-8 X

Depth: 53.24

Depth:

Concl:

Temp:

28

5.049

19.28

30

5.045

19.22

32

5.045

19.18

34

5.045

19.17

36

5.045

19.17

38

5.061

19.18

40

5.094

19.20

42

5.332

19.24

44

6.503

19.35

46

6.973

19.38

48

7.033

19.40

50

7.045

19.41

52

7.044

19.43



WL	34.07	* MW-3 *	T. Depth	57.50
----	-------	----------	----------	-------

Depth:

Cond:

Temp:

36

1.445

19.92

38

1.503

19.88

40

1.568

19.88

42

1.613

19.89

44

1.632

19.90

46

1.633

19.91

48

1.636

19.91

50

1.635

19.92

52

1.635

19.93

54

1.633

19.95

56

1.633 ✓

19.96

WL: 35.41

* MW-2 * ~~at DP~~ 60.32

Depth:

Cond:

Temp:

36

1.699

20.05

38

1.699

19.87

40

1.713

19.84

42

1.764

19.85

44

1.868

19.88

46

1.894

19.89

48

1.909

19.91

50

1.910

19.92

52

1.911

19.92

Location North OwenDate April 9

121

Project / Client

Depth :	Cond:	Temp:
54	1.910	19.93
56	1.911	19.93
58	1.910	19.95
60	1.911	19.95
WL: 32.14	* MW-4 ✓	* TD: 54.21

Depth	Cond:	Temp:
34	0.948	19.97
36	0.949	19.88
38	0.951	19.70
40	0.952	19.86
42	0.953	19.84
44	0.973	19.84
46	1.489	19.85
48	25.36	19.88
50	51.87	19.88

52
 WL: 30.99 * MW-5 * ✓ TD: 52.65

Depth:	Cond:	Temp:
32	2.415	20.20
34	2.412	19.83
36	2.510	19.67
38	2.690	19.65
40	2.912	19.65

Rite in the Rain.



Depth:	Cond:	Temp:
42	6.303	19.67
44	9.996	19.69
46	15.42	19.71
48	17.16	19.74
50	19.05	19.75
52		

WL: 31.16	*RW-1*	TD: 53.33
Depth	Cond:	Temp:
32	2.795	19.42

34	2.793	19.33
36	2.797	19.28
38	2.810	19.27
40	2.853	19.28
42	2.927	19.29
44	3.390	19.32
46	11.22	19.36
48	28.77	19.39
50	34.62	19.42
52	35.37	19.45

WL: 31.75	*MW-1*	TD: 54.03
Depth	Cond	Temp
32	1.971	19.73
34	1.962	19.25

Location North OwenDate October 19 123

Project / Client

Depth:

Cond:

Temp:

36

1.962

19.18

38

1.975

19.15

40

2.013

19.15

42

2.149

19.18

44

3.012

19.21

46

9.165

19.24

48

26.98

19.28

50

31.59

19.32

52

32.21

19.34

* Sample Info *

ID:

Time:

Temp:

Cond:

pH:

MW-17

1224

24.79

20.60

6.32

MW-22

1239

23.10

0.891

7.15

MW-19

1251

23.00

0.893

7.19

MW-20

1253

22.69

2.436

6.54

MW-13

1309

22.57

24.75

6.36

MW-21

1318

23.41

24.25

6.27

MW-23

1331

24.50

11.02

6.50

MW-18

1342

23.85

4.152

6.95

* MW-11

1351

24.15

12.71

6.43

* DUP-1

—

—

—

—

1520 Bought sample sec. "Pach" sample,

1553 Let's Double

1704 A + home.

Rite in the Rain.

Shell

14757/

0645 Drive to the site.
0748 Arrive at Lowes.
0758 Arrive on site TGSN175W,
JSA.

X UST Col. X

SNH	Cond:	pH:	pH:	pH:	ORP:
8975	1.415	4.00	7.00	10.44	240.0
9001	1.335	3.84	6.77	10.82	239.9
Temp:	23.76	23.53	25.12	25.11	24.44

X Sample Info X

SD:	Time:	Temp:	Cond:	pH:
MW-12	0758	21.01	4.895	6.93
MW-24	0809	20.58	5.299	7.02
MW-9	0825	20.53	5.813	7.30
MW-10	0833	20.97	7.148	7.00
MW-14	0844	20.99	3.866	7.14
MW-16	0851	20.28	2.806	7.23
MW-25	0902	21.72	7.108	6.91
MW-15	0912	21.18	4.104	7.36
MW-7 X	0919	21.62	0.958	7.72
DUP-2 X	-	-	-	-
MW-6	0939	21.81	2.701	7.21
MW-8	0949	21.57	6.716	6.75
MW-3	1005			

Object / Client: _____

[Signature]

Rite in the Rain

Gauging Form

HES Transfer Site Name: Mark Owen #9

Lea County, New Mexico

Design & Consultancy
for natural and
built assets

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
• MW-1 •	9/11	31.75	51.03	Roots on probe
• MW-2 •	9/11	35.41	60.82	
• MW-3 •	9/11	34.02	57.50	
• MW-4 •	9/11	32.14	54.21	DOP-3
• MW-5 •	9/11	30.79	52.65	
• MW-6 •	9/11	28.71	48.59	
• MW-7 •	9/11	29.70	51.14	DOP-2
• MW-8 •	9/11	27.03	53.24	
• MW-9 •	9/10	33.32	53.34	
• MW-10 •	9/10	30.57	61.49	
• MW-11 •	9/10	42.00	80.92	DOP-1
• MW-12 •	9/10	42.37	65.90	
• MW-13 •	9/10	27.98	45.09	
• MW-14 •	9/10	30.99	47.70	
• MW-15 •	9/11	28.52	46.59	
• MW-16 •	9/10	39.78	54.85	
• MW-17 •	9/10	54.94	80.92	
• MW-18 •	9/10	38.50	66.56	
• MW-19 •	9/10	39.20	60.19	
• MW-20 •	9/10	26.13	62.13	
• MW-21 •	9/10	29.17	40.76	
• MW-22 •	9/10	43.52	67.03	
• MW-23 •	9/10	32.86	47.38	
• MW-24 •	9/10	38.17	63.74	
• MW-25 •	9/10	32.33	48.24	
• RW-1 •	9/11	31.16	53.33	Roots on probe

Gauging Form

HES Transfer Site Name: Mark Owen #9

Lea County, New Mexico

Design & consultancy
for natural and
built assets

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
X MW-1	6/17	31.56	54.00	
X MW-2	6/17	35.13	60.40	
X MW-3	6/17	33.80	57.64	
X MW-4	6/17	31.89	54.30	
MW-5	6/17	30.72	52.76	
MW-6	6/18	28.64	48.68	
X MW-7	6/17	29.45	51.24	
MW-8	6/18	26.37	53.30	
MW-9	6/17	33.69	53.52	
MW-10	6/17	30.18	62.27	
MW-11	6/18	41.96	80.95	
MW-12	6/19	47.36	66.12	mucky bottom
MW-13	6/18	29.60	45.10	was already unlocked when we arrived.
MW-14	6/18	30.56	49.82	
X MW-15	6/17	28.27	46.72	
X MW-16	6/17	39.56	55.09	
MW-17	6/18	54.93	81.50	
MW-18	6/19	38.45	66.55	
MW-19	6/18	32.12	60.44	
MW-20	6/19	25.57	62.45	
MW-21	6/18	25.81	40.86	
MW-22	6/18	43.50	57.12	
MW-23	6/18	32.60	47.50	
MW-24	6/18	38.07	63.75	gauging done on 6/21 missed on the 18 th .
MW-25	6/18	32.15	48.30	
X RW-1	6/17	30.91	53.80	

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MA2-17
Static Water Level: 59.84
Stop Time: _____

Date: 07/01/9
 Personnel: 00102
 Total Depth: 80.92
 Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-22
Static Water Level: 43.52
Stop Time: _____

Date: 09/10/19
Personnel: OSCI CP
Total Depth: 63.03
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-19
Static Water Level: 39.20
Stop Time: _____

Date: 09/10/19
Personnel: DLCE
Total Depth: 60.19
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-20
Static Water Level: 26.13
Stop Time: _____

Date: 09/10/09
Personnel: BL/CF
Total Depth: 62.13
Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-13
Static Water Level: 22.98
Stop Time: _____

Date: 09/10/19
Personnel: BC/CT
Total Depth: 45.09
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Marsh Over
Well Identification: MW-21
Static Water Level: 26.17
Stop Time: _____

Date: 05/10/19
 Personnel: BJ SF
 Total Depth: 40.76
 Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-23
Static Water Level: 32.84
Stop Time: _____

Date: 02/10/19
 Personnel: OSC/CF
 Total Depth: 47.38
 Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-18
Static Water Level: 38.50
Stop Time: _____

Date: 03/10/14
 Personnel: OSL/CF
 Total Depth: 66.51
 Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-11
Static Water Level: 82.00
Stop Time: _____

Date: 08/10/99
Personnel: Abel CF
Total Depth: 90.92
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-12
Static Water Level: 42.37
Stop Time: _____

Date: 05/10/19
Personnel: BLICE
Total Depth: 65.90
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-24
Static Water Level: 38.17
Stop Time: _____

Date: 09/10/19
 Personnel: OSU/CF
 Total Depth: 63.74
 Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen

Well Identification: MW-9

Static Water Level: 33.88

Stop Time: _____

Date: 09/10/19

Personnel: DSCEP

Total Depth: 53.34

Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-10
Static Water Level: 30.57
Stop Time: _____

Date: 08/10/19
Personnel: BL/CF
Total Depth: 61.49
Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owens

Well Identification: MW-14

Static Water Level: 30.99

Stop Time: _____

Date: 05/10/19

Personnel: BL / CF

Total Depth: 47.70

Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-6
Static Water Level: 38.78
Stop Time: _____

Date: 05/01/19
Personnel: JB/CIF
Total Depth: 54.95
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-25
Static Water Level: 32.33
Stop Time: _____

Date: 05/12/15
Personnel: GBCF
Total Depth: 48.24
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owens
Well Identification: MW-7
Static Water Level: 29.70
Stop Time: _____

Date: 23/11/15
Personnel: JSC/CT=
Total Depth: 51.14
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW 15
Static Water Level: 28.54
Stop Time: _____

Date: 09/11/19
Personnel: JSL/CF
Total Depth: 46.59
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-6
Static Water Level: 78.91
Stop Time: _____

Date: 05/11/19
 Personnel: BC/CF
 Total Depth: 48.59
 Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-8
Static Water Level: 23.03
Stop Time: _____

Date: 25/11/18
Personnel: JCL CT
Total Depth: 53.24
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: M62-3
Static Water Level: 34.07
Stop Time: _____

Date: 09/11/19
Personnel: B4CF
Total Depth: 57.50
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Merle Owen
Well Identification: MW-2
Static Water Level: 35.41
Stop Time: _____

Date: 09/16/19
Personnel: BSCF
Total Depth: 60.32
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen

Well Identification: MW-4

Static Water Level: 32.14

Stop Time: _____

Date: 05/11/19

Personnel: BLCF

Total Depth: 54.21

Start Time: _____

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-5
Static Water Level: 30.85
Stop Time: _____

Date: 09/11/19
Personnel: BLCF
Total Depth: 59.05
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: North Owen
Well Identification: RW-1
Static Water Level: 31.16
Stop Time: _____

Date: 09/11/19
Personnel: JSL/cif
Total Depth: 53.33
Start Time:

[illegible]

Well Conductivity Profile Field data Sheet

Site Name: Mark Dawson
Well Identification: MW-1
Static Water Level: 31.75
Stop Time: _____

Date: 09/11/19
Personnel: GR/CF
Total Depth: 54.03
Start Time: _____

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-1 Inspection Date 05/11/18 Inspector USC/CT
 Measured Well Depth 54.03 Measuring Point TOC Depth to water 31.25

VISUAL INSPECTION

- | | | | |
|--|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure?..... | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well?..... | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration?..... | Y | ☒ | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ | N | N/A |

NOTES AND

OBSERVATIONS: Roots in well.

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification AW-1 Inspection Date 09/16/13 Inspector JSC/CF
 Measured Well Depth 53.33 Measuring Point TDC Depth to water 31.16

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Roots in well.

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-5 Inspection Date 05/11/19 Inspector CBC
 Measured Well Depth 52.55 Measuring Point TOC Depth to water 30.99

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-4 Inspection Date 09/11/19 Inspector BC/CF
 Measured Well Depth 54.21 Measuring Point TOC Depth to water 32.14

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-2 Inspection Date 08/11/19 Inspector 03C/CF
 Measured Well Depth 60.32 Measuring Point TDC Depth to water 35.40

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-3 Inspection Date 09/11/18 Inspector ASD/CF
 Measured Well Depth 57.50 Measuring Point TOC Depth to water 38.07

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|----------------------------------|---|----------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ |
| Does water appear discolored or have an unusual odor or appearance? | ☒ | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-8 Inspection Date 09/11/18 Inspector GBC/CF
 Measured Well Depth 53.24 Measuring Point 50C Depth to water 27.03

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? Y N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A
- Does the bailer contain excessive amounts of silt or rust? Y N N/A
- Does water appear discolored or have an unusual odor or appearance? ☒ N N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-6 Inspection Date 09/11/19 Inspector BSL/CK
 Measured Well Depth 48.59 Measuring Point TOC Depth to water 28.91

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-15 Inspection Date 05/11/19 Inspector OSC/CF
 Measured Well Depth 46.59 Measuring Point TOC Depth to water 28.56

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N ☒ N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N ☒ N/A

Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A

Does water appear discolored or have an unusual odor or appearance? ☒ Y N N/A

Is the lock on the well cover/cap clean and fully functional? ☒ Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-7 Inspection Date 09/11/19 Inspector BC/CT
 Measured Well Depth 51.14 Measuring Point 70C Depth to water 29.70

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ Y N ☒ N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N ☒ N/A

Does bailer/pump travel freely to and from bottom of well? Y N ☒ N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N ☒ N/A

Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A

Does water appear discolored or have an unusual odor or appearance? ☒ Y N ☒ N/A

Is the lock on the well cover/cap clean and fully functional? ☒ Y N ☒ N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-25 Inspection Date 09/10/19 Inspector USC/CIF
 Measured Well Depth 98.24 Measuring Point 50C Depth to water 52.33

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-16 Inspection Date 09/10/19 Inspector JP/CF
 Measured Well Depth 54.85 Measuring Point Top Depth to water 39.78

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-14 Inspection Date 09/10/19 Inspector BSU/CF
 Measured Well Depth 47.20 Measuring Point 76C Depth to water 30.99

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|--------------------------------------|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | ☒ N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS: _____

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-10 Inspection Date 09/10/15 Inspector GS/CTF
 Measured Well Depth 61.49 Measuring Point FOC Depth to water 30.57

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-9 Inspection Date 05/10/19 Inspector JSK/CF
 Measured Well Depth 53.34 Measuring Point TOC Depth to water 33.88

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | <u>N</u> | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|----------|---|------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | <u>Y</u> | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | <u>Y</u> | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | <u>N/A</u> |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | <u>N/A</u> |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | <u>N/A</u> |
| Does water appear discolored or have an unusual odor or appearance? | <u>Y</u> | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | <u>Y</u> | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-24 Inspection Date 09/10/19 Inspector JSK/CF
 Measured Well Depth 63.74 Measuring Point TOC Depth to water 38.47

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-12 Inspection Date 09/10/12 Inspector JSK/CF
 Measured Well Depth 65.90 Measuring Point 70C Depth to water 47.37

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|----------------------------------|---|----------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ |
| Does water appear discolored or have an unusual odor or appearance? | ☒ | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-11 Inspection Date 05/10/19 Inspector OSL
 Measured Well Depth 80.92 Measuring Point 702 Depth to water 9200

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-18 Inspection Date 25/10/19 Inspector QSC/CF
 Measured Well Depth 66.56 Measuring Point TOC Depth to water 38.50

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|------------------------------------|---|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-23 Inspection Date 07/10/19 Inspector JSC/CF
 Measured Well Depth 47.38 Measuring Point TOC Depth to water 33.82

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N ☒ N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N ☒ N/A

Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A

Does water appear discolored or have an unusual odor or appearance? ☒ Y N N/A

Is the lock on the well cover/cap clean and fully functional? ☒ Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-21 Inspection Date 09/10/19 Inspector BCL CF
 Measured Well Depth 40.75 Measuring Point TOC Depth to water 26.17

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? ☒ Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? ☒ Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N ☒ N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N ☒ N/A

Does the bailer contain excessive amounts of silt or rust? Y N ☒ N/A

Does water appear discolored or have an unusual odor or appearance? ☒ Y N N/A

Is the lock on the well cover/cap clean and fully functional? ☒ Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification N/W-13 Inspection Date 09/10/19 Inspector BL/CF
 Measured Well Depth 27.98 ^{036 45.07} Measuring Point TOC Depth to water 27.97

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) Y N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) Y N N/A
- Does bailer/pump travel freely to and from bottom of well? Y N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A
- Does the bailer contain excessive amounts of silt or rust? Y N N/A
- Does water appear discolored or have an unusual odor or appearance? Y N N/A
- Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-20 Inspection Date 02/10/19 Inspector JSC/CF
 Measured Well Depth 67.13 Measuring Point TOC Depth to water 66.13

VISUAL INSPECTION

- | | | | |
|--|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure?..... | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well?..... | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration?..... | Y | ☒ | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A

Does bailer/pump travel freely to and from bottom of well? ☒ N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? ☒ N N/A

Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-22 Inspection Date 07/06/17 Inspector _____
 Measured Well Depth 62.03 Measuring Point 703 Depth to water 43.52

VISUAL INSPECTION

- | | | | |
|--|----------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure?..... | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well?..... | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration?..... | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? ☒ N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A
- Does the bailer contain excessive amounts of silt or rust? Y N N/A
- Does water appear discolored or have an unusual odor or appearance? ☒ N N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-17 Inspection Date 05/10/19 Inspector ASL/CF
 Measured Well Depth 80.92 Measuring Point TC Depth to water 54.94

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|--|------------------------------------|------------------------------------|--------------------------------------|
| Does water-level indicator/measuring device travel freely down well casing?
<small>(Enter depth to water in the space provided above.)</small> | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
<small>(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)</small> | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | ☒ N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | ☒ N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | ☒ N/A |
| Does water appear discolored or have an unusual odor or appearance? | ☒ Y | ☒ N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | ☒ Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller Project Number B0047270.0007
 Well Identification MW-19 Inspection Date 09/11/17 Inspector OSU/CF
 Measured Well Depth 39.20 Measuring Point TOC Depth to water 38.20

VISUAL INSPECTION

- | | | | |
|---|----------------------------------|----------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) ☒ N N/A
- Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A
- Does bailer/pump travel freely to and from bottom of well? Y N ☒
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N ☒
- Does the bailer contain excessive amounts of silt or rust? Y N ☒
- Does water appear discolored or have an unusual odor or appearance? ☒ N N/A
- Is the lock on the well cover/cap clean and fully functional? ☒ N N/A

NOTES AND

OBSERVATIONS:

Gauging Form

HES Transfer Site Name: Mark Owen #9

Lea County, New Mexico

Design & Consultancy
for natural and
built assets

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
MW-1	11/18/19	31.62	59.03	orange snow fencing down around well
MW-2	11/19/19 35.23	60.21		
MW-3	11/19/19	33.83	57.44	
MW-4	11/19/19	31.95	54.28	
MW-5	11/18/19	30.91	52.64	
MW-6	11/19/19	28.70	48.64	
MW-7	11/19/19 11/19/19	29.48	54.11	
MW-8	11/19/19	26.92	53.32	
MW-9	11/19/19	33.80	53.38	
MW-10	11/18/19	30.45	61.50	
MW-11	11/18/19	41.99	81.75	
MW-12	11/18/19	47.40	65.79	
MW-13	11/18/19	27.36	45.04	
MW-14	11/18/19	30.62	47.66	
MW-15	11/19/19	28.33	46.67	
MW-16	11/19/19	39.49	54.94	
MW-17	11/18/19	54.92	80.84	
MW-18	11/18/19	38.49	65.89	
MW-19	11/18/19	39.16	59.77	
MW-20	11/18/19	24.98	62.16	
MW-21	11/18/19	25.98	40.67	
MW-22	11/18/19	63.48	67.08	
MW-23	11/18/19	32.74	47.52	
MW-24	11/19/19	38.15	63.65	
MW-25	11/19/19	32.22	48.24	
RW-1	11/18/19	31.00	53.28	blue barrel next to well; orange snow fencing down around well

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-17
Static Water Level: ~~1020~~ 54.92
Stop Time: 1020

Date: 11/18/19
Personnel: CM, CF
Total Depth: 80.84
Start Time: 0940

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____

Well Identification MW-12 Inspection Date 1/18/19 Inspector _____

Measured Well Depth 80.84 Measuring Point 78 Depth to water 59.92

VISUAL INSPECTION

- | | | | |
|---|---------------------------------------|---|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | ☒ Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well? ☒ Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS: _____

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-12
Static Water Level: 47.40
Stop Time: 1054

Date: 11/18/19
Personnel: CM, CF
Total Depth: 65' 79'
Start Time: 1047

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
 Well Identification AW-12 Inspection Date 11/15/19 Inspector CM
 Measured Well Depth 65.79 Measuring Point 64 Depth to water 47.40

VISUAL INSPECTION

- | | | | |
|---|---------------------------------------|---|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|-------------------------------------|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Mark Owen

~~89~~ 1114

1107

17-08

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification MW-18 Inspection Date 11/18/19 Inspector CM, CF

Measured Well Depth 65.89 Measuring Point 63 Depth to water 38.49

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-11
Static Water Level: 41.99
Stop Time: 8/47

Date: 11/18/19
 Personnel: CM, CF
 Total Depth: 81.75
 Start Time: ~~11:59~~ 11:35

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-11 Inspection Date 11/18/19 Inspector CM, CF
Measured Well Depth 81.75 Measuring Point _____ Depth to water 46.49

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-22
Static Water Level: 43.48
Stop Time: 1206

Date: 11/18/19
Personnel: CM, CF
Total Depth: 67.08
Start Time: 1159

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-22 Inspection Date 11/18/19 Inspector CM, CF
Measured Well Depth 43.48 Measuring Point _____ Depth to water 67.08

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Chen
Well Identification: MW-19
Static Water Level: 39.186
Stop Time: 1322

Date: 11 18 19
Personnel: CM CF
Total Depth: 5977
Start Time: 1312

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MAW-19 Inspection Date 11/18/19 Inspector CM, CP
Measured Well Depth 39.16 Measuring Point _____ Depth to water 59.77

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Onon
Well Identification: MW-26
Static Water Level: 24.98
Stop Time: 1343

Date: 11/18/19
 Personnel: CM, CF
 Total Depth: 62.16
 Start Time: 1336

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-21
Static Water Level: 25.98
Stop Time: 1962

Date: 11/18/19
Personnel: CM, CF
Total Depth: 40.62
Start Time: 1356

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mar K Onea
Well Identification: MW-23
Static Water Level: 32.74
Stop Time: 1423

Date: 11/18/19
Personnel: CM, CF
Total Depth: 42.32
Start Time: 1415

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-13
Static Water Level: 27.36
Stop Time: 14.37

Date: 11/18/19
 Personnel: CM, CF
 Total Depth: 45.04
 Start Time: 1433

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Over
Well Identification: MW-14
Static Water Level: 30.62
Stop Time: 1532

Date: 11/18/19
Personnel: CM, CF
Total Depth: 47.66
Start Time: 1526

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-10
Static Water Level: 30.45
Stop Time: 1553

Date: 11/18 H
 Personnel: CM, CF
 Total Depth: 61.50
 Start Time: 1545

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location _____ Project Number _____

Well Identification _____ Inspection Date _____ Inspector _____

Measured Well Depth _____ Measuring Point _____ Depth to water _____

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? Y N N/A
(Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? Y N N/A
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-5
Static Water Level: 30.91
Stop Time: 1616

Date: 11/18/19
Personnel: CF, CM
Total Depth: 57-69
Start Time: 1609

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____
 Well Identification MW-5 Inspection Date 11/13/19 Inspector CF/CM
 Measured Well Depth 52.69 Measuring Point 52 Depth to water 30.91

VISUAL INSPECTION

- | | | | |
|---|-------------------------------------|-------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing? ☒ Y N N/A
 (Enter depth to water in the space provided above.)

Does water-level indicator/measuring device travel to bottom of well? ☒ Y N N/A
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS: _____

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: RW-1
Static Water Level: 31.00
Stop Time: 1647

Date: 11/18/19
Personnel: CF, CM
Total Depth: 53.28
Start Time: 1642

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification RW-1 Inspection Date 11/13/19 Inspector CF/CM
Measured Well Depth 53.28 Measuring Point 52 Depth to water 31.00

VISUAL INSPECTION

- | | | | |
|---|---------------------------------------|---|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.)

☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-1
Static Water Level: 31.62
Stop Time: 1702

Date: 11/18/19
Personnel: CF, CM
Total Depth: 54.03
Start Time: 1651

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
 Well Identification MW-1 Inspection Date 11/13/19 Inspector CF, CM
 Measured Well Depth 54.63 Measuring Point 54 Depth to water 31.62

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.)

Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-9
Static Water Level: 33.80
Stop Time: 0753

Date: 11/19/19
Personnel: CF, CM
Total Depth: 53.38
Start Time: 0745

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
 Well Identification MW-9 Inspection Date 11/19/19 Inspector CF, CM
 Measured Well Depth 53.38 Measuring Point 52 Depth to water 33.80

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.)

Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-2
Static Water Level: 35.23
Stop Time: 0811

Date: 11/19/19
Personnel: CF, CM
Total Depth: 60.21
Start Time: 0806

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____

Well Identification MW-2 Inspection Date 11/19/19 Inspector CF, CM

Measured Well Depth 60.21 Measuring Point 54 Depth to water 35.23

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|---|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-4
Static Water Level: 31.95
Stop Time: 0850

Date: 11/19/19
Personnel: CF, CM
Total Depth: 54.28
Start Time: 0843

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-4 Inspection Date 11/19/19 Inspector CF, CM
Measured Well Depth 54.28 Measuring Point 52 Depth to water 31.95

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-3
Static Water Level: 33.83
Stop Time: 0930

Date: 11/19/19
Personnel: CF, CM
Total Depth: 57.44
Start Time: 0820

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
 Well Identification MW-3 Inspection Date 11/19/19 Inspector CF, CM
 Measured Well Depth 57.44 Measuring Point ~~55~~ Depth to water 33.83

VISUAL INSPECTION

- | | | | |
|---|----------|----------|-----|
| 1) Is protective sleeve/cover in place and secure? | <u>Y</u> | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | <u>Y</u> | N | N/A |
| 3) Is concrete pad in satisfactory condition? | <u>Y</u> | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | <u>Y</u> | N | N/A |
| 5) Is well cap in place and in good condition? | <u>Y</u> | N | N/A |
| 6) Is measuring point marked or readily recognized? | <u>Y</u> | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | <u>Y</u> | <u>N</u> | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
 (Enter depth to water in the space provided above.) Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
 (Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-6
Static Water Level: 28.70
Stop Time: 0917

Date: 11/19/19
Personnel: CF, CM
Total Depth: 48.6 ft
Start Time: 0910

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____

Well Identification MW-6 Inspection Date 11/19/19 Inspector CF, CM

Measured Well Depth 48.64 Measuring Point 46 Depth to water 28.70

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A
- Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A
- Does bailer/pump travel freely to and from bottom of well? Y N N/A
- Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A
- Does the bailer contain excessive amounts of silt or rust? Y N N/A
- Does water appear discolored or have an unusual odor or appearance? Y N N/A
- Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-7
Static Water Level: 29.48
Stop Time: 0941

Date: 11/19/19
Personnel: CF, CM
Total Depth: 54.11
Start Time: 0930

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
 Well Identification MW-7 Inspection Date 11/19/19 Inspector CF, CM
 Measured Well Depth 54.11 Measuring Point 52 Depth to water 29.48

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|------------------------------------|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | ☒ Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | ☒ Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owsen
Well Identification: MW-15
Static Water Level: 28.3
Stop Time: 0955

Date: 11/19/19
Personnel: CF, CM
Total Depth: 46.67
Start Time: 12949

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-15 Inspection Date 11/19/19 Inspector CF, CM
Measured Well Depth 46.67 Measuring Point 44 Depth to water 28.33

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|-----|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y ☒ | N/A | |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Olesen
Well Identification: MW-25
Static Water Level: 32.22
Stop Time: 1013

Date: 11/19/19
Personnel: CF/CM
Total Depth: 48.27
Start Time: 1007

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____

Well Identification MW-25 Inspection Date 11/19/19 Inspector CF, CM

Measured Well Depth 48.27 Measuring Point 45 Depth to water 32.22

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-16
Static Water Level: 39.49
Stop Time: 1030

Date: 11/19/19
Personnel: CP, CM
Total Depth: 54.94
Start Time: 1025

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____

Well Identification MW-16 Inspection Date 11/19/19 Inspector CF, CM

Measured Well Depth 54.94 Measuring Point 52 Depth to water 39.49

VISUAL INSPECTION

- | | | | |
|---|---|---|-----|
| 1) Is protective sleeve/cover in place and secure? | Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | Y | N | N/A |
| 5) Is well cap in place and in good condition? | Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | N | N/A |

PHYSICAL INSPECTION

- | | | | |
|---|---|---|-----|
| Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) | Y | N | N/A |
| Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) | Y | N | N/A |
| Does bailer/pump travel freely to and from bottom of well? | Y | N | N/A |
| Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? | Y | N | N/A |
| Does the bailer contain excessive amounts of silt or rust? | Y | N | N/A |
| Does water appear discolored or have an unusual odor or appearance? | Y | N | N/A |
| Is the lock on the well cover/cap clean and fully functional? | Y | N | N/A |

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-8
Static Water Level: 26.92
Stop Time: 1047

Date: 11/19/19
Personnel: CF, CM
Total Depth: 53.30
Start Time: 1042

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-8 Inspection Date 11/19/19 Inspector CF, CM
Measured Well Depth 53.30 Measuring Point 50 Depth to water 26.92

VISUAL INSPECTION

- | | | | |
|---|-------------------------------------|-------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.) ☒ N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.) ☒ N N/A

Does bailer/pump travel freely to and from bottom of well? Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well? Y N N/A

Does the bailer contain excessive amounts of silt or rust? Y N N/A

Does water appear discolored or have an unusual odor or appearance? Y N N/A

Is the lock on the well cover/cap clean and fully functional? Y N N/A

NOTES AND

OBSERVATIONS:

Well Conductivity Profile Field data Sheet

Site Name: Mark Owen
Well Identification: MW-24
Static Water Level: 38.15
Stop Time: 1114

Date: 11/19/19
Personnel: CF, CM
Total Depth: 63.65
Start Time: 1108

[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Mark Owen Project Number _____
Well Identification MW-24 Inspection Date 11/19/19 Inspector CF, CM
Measured Well Depth 63-65 Measuring Point 60 Depth to water 38.15

VISUAL INSPECTION

- | | | | |
|---|------------------------------------|------------------------------------|-----|
| 1) Is protective sleeve/cover in place and secure? | ☒ Y | N | N/A |
| 2) Are hinges, latches, or locks functional and in good condition? | ☒ Y | N | N/A |
| 3) Is concrete pad in satisfactory condition? | ☒ Y | N | N/A |
| 4) Is well name or other identification marked clearly on or near the well? | ☒ Y | N | N/A |
| 5) Is well cap in place and in good condition? | ☒ Y | N | N/A |
| 6) Is measuring point marked or readily recognized? | ☒ Y | N | N/A |
| 7) Does well opening/stickup show signs of damage or deterioration? | Y | ☒ N | N/A |

PHYSICAL INSPECTION

Does water-level indicator/measuring device travel freely down well casing?
(Enter depth to water in the space provided above.)

☒ Y N N/A

Does water-level indicator/measuring device travel to bottom of well?
(Total depth may be found on drilling logs, well completion diagrams, or previous well inspection forms. Enter total depth in the space provided above.)

☒ Y N N/A

Does bailer/pump travel freely to and from bottom of well?

Y N N/A

Upon removal from well, does bailer show evidence of damage (gouges, cuts, scrapes) suggestive of well damage from foreign objects in the well?

Y N N/A

Does the bailer contain excessive amounts of silt or rust?

Y N N/A

Does water appear discolored or have an unusual odor or appearance?

Y N N/A

Is the lock on the well cover/cap clean and fully functional?

Y N N/A

NOTES AND

OBSERVATIONS:

APPENDIX C

Cumulative Summary of Groundwater Analytical Results



Appendix C
Cumulative Summary of Groundwater Analytical Results
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen
No. 9 Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 East
Lea County, New Mexico



Design & Consultancy
for natural and
built assets

Sample I.D. No.	Replacate Sample I.D.	Date	RCRA Metals									Groundwater Quality			
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolve Solids	
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
			NMWQCC Human Health Standards for Groundwater ¹									NMWQCC Other Standards for Domestic Water Supply ²			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1,000 mg/L		
MW-01		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	214.00	3,120.00	218.00	5,940.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	244.00	4,140.00	232.00	5,870.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	223.00	5,140.00	242.00	9,790.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	186.00	11,300.00	456.00	19,400.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	208.00	7,800.00	333.00	13,300.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	175.00	11,300.00	NA	24,400.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	168.00	8,170.00	363.00	15,700.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	179.00	11,000.00	347.00	19,000.00	
MW-02		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	290.00	250.00	185.00	947.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	355.00	228.00	159.00	1,040.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	320.00	227.00	162.00	1,010.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	325.00	260.00	181.00	822.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	293.00	295.00	193.00	1,110.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	281.00	NA	1,210.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	298.00	322.00	183.00	1,200.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	289.00	307.00	162.00	1,120.00	
MW-03		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	286.00	171.00	85.80	716.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	319.00	177.00	72.20	787.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	322.00	188.00	78.90	838.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	312.00	253.00	84.90	875.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	277.00	261.00	96.90	878.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	252.00	NA	1,080.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	317.00	279.00	117.00	934.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	260.00	267.00	113.00	974.00	
MW-04		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	192.00	5,940.00	276.00	2,890.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	217.00	211.00	54.00	2,560.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	229.00	6,130.00	265.00	9,380.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	227.00	2,450.00	126.00	4,840.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	229.00	3,410.00	190.00	6,250.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	214.00	3,460.00	180.00	5,960.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	1,860.00	NA	4,370.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	207.00	2,350.00	NA	4,370.00	
MW-05		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	255.00	345.00	67.70	920.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	214.00	339.00	62.90	892.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	213.00	117.00	52.70	486.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	207.00	166.00	63.40	492.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	222.00	4,500.00	307.00	7,450.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	225.00	4,330.00	267.00	7,320.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	242.00	4,870.00	272.00	9,680.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	258.00	4,900.00	316.00	9,050.00	
MW-06		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	263.00	3,900.00	273.00	7,260.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	222.00	5,090.00	NA	12,000.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	279.00	4,260.00	288.00	9,560.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	237.00	4,680.00	271.00	9,500.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	190.00	512.00	268.00	1,610.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	196.00	654.00	239.00	1,610.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	196.00	670.00	243.00	1,600.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	194.00	743.00	242.00	2,000.00	
MW-07		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	173.00	877.00	250.00	1,880.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	179.00	911.00	247.00	2,060.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	910.00	NA	2,870.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	905.00	NA	3,060.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	168.00	599.00	213.00	2,630.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	188.00	433.00	117.00	1,320.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	236.00	472.00	173.00	1,320.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	226.00	260.00	106.00	914.00	
MW-08		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	197.00	665.00	254.00	1,510.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	204.00	434.00	153.00	1,120.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	151.00	NA	782.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	214.00	89.70	50.60	545.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	196.00	249.00	98.90	858.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	206.00	326.00	119.00	968.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	175.00	2,320.00	668.00	4,620.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	192.00	2,160.00	566.00	3,990.00	
MW-09		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	194.00	2,140.00	557.00	3,940.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	193.00	2,170.00	553.00	4,750.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	194.00	2,230.00	627.00	4,270.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	194.00	2,170.00	607.00	4,360.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	185.00	2,150.00	572.00	4,260.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	188.00	2,200.00	579.00	6,030.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	NA	2,200.00	NA	6,810.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	177.00	2,180.00	563.00	5,690.00	
MW-10		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	268.00	3,840.00	279.00	9,090.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	260.00	6,870.00	370.00	6,330.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	294.00	4,130.00	293.00	6,940.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	301.00	3,160.00	249.00	6,630.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	292.00	5,190.00	327.00	9,680.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	299.00	6,150.00	407.00	9,720.00	
		09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	280.00	4,600.00	304.00	8,120.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	264.00	5,420.00	NA	11,700.00	
MW-11		02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	270.00	4,850.00	286.00	10,700.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	279.00	5,020.00	334.00	5,960.00	

Appendix C
Cumulative Summary of Groundwater Analytical Results
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen
No. 9 Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 East
Lea County, New Mexico



Design & Consultancy
for natural and
built assets

Sample I.D. No.	Replicate Sample I.D.	RCRA Metals										Groundwater Quality			
		Date	Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolved Solids	
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
		NMWQCC Human Health Standards for Groundwater ¹										NMWQCC Other Standards for Domestic Water Supply ²			
		0.1 mg/L	1.0 mg/L	0.01 mg/L	0.05 mg/L	0.05 mg/L	0.002 mg/L	0.05 mg/L	0.05 mg/L		250 mg/L	600 mg/L	1,000 mg/L		
MW-10	DUP	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	1,500.00	149.00	3,810.00		
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	319.00	2,580.00	211.00	5,010.00		
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	326.00	2,330.00	177.00	8,760.00		
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	329.00	2,550.00	206.00	5,420.00		
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	336.00	2,610.00	244.00	5,020.00		
	05/13/14	NA	NA	NA	NA	NA	NA	NA	NA	341.00	3,030.00	486.00	5,650.00		
	05/13/14	NA	NA	NA	NA	NA	NA	NA	NA	340.00	2,920.00	557.00	5,630.00		
	08/07/14	NA	NA	NA	NA	NA	NA	NA	NA	333.00	2,730.00	<400.00	6,280.00		
	11/05/14	NA	NA	NA	NA	NA	NA	NA	NA	328.00	2,430.00	<200.00	6,140.00		
	03/06/15	NA	NA	NA	NA	NA	NA	NA	NA	340.00	2,520.00	407.00	5,960.00		
	06/10/15	NA	NA	NA	NA	NA	NA	NA	NA	339.00	2,550.00	297.00	5,710.00		
	09/29/15	NA	NA	NA	NA	NA	NA	NA	NA	320.00	2,760.00	239.00	5,000.00		
	12/16/15	NA	NA	NA	NA	NA	NA	NA	NA	324.00	3,030.00	181.00	5,470.00		
	03/15/16	NA	NA	NA	NA	NA	NA	NA	NA	332.00	2,970.00	200.00	5,430.00		
	06/23/16	NA	NA	NA	NA	NA	NA	NA	NA	365.00	2,430.00	151.00	5,160.00		
	09/30/16	NA	NA	NA	NA	NA	NA	NA	NA	343.00	2,700.00	215.00	5,170.00		
	12/16/16	NA	NA	NA	NA	NA	NA	NA	NA	384.00	1,090.00	115.00	2,240.00		
	03/28/17	NA	NA	NA	NA	NA	NA	NA	NA	342.00	2,640.00	148.00	5,170.00		
	06/27/17	NA	NA	NA	NA	NA	NA	NA	NA	335.00	2,810.00	224.00	5,180.00		
	09/20/17	NA	NA	NA	NA	NA	NA	NA	NA	306.00	2,100.00	223.00	5,570.00		
MW-11	DUP	12/19/17	NA	NA	NA	NA	NA	NA	NA	NA	312.00	2,530.00	172.00	4,480.00	
	02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	299.00	2,670.00	211.00	4,630.00		
	06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	335.00	2,470.00	184.00	4,560.00		
	09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	344.00	1,830.00	148.00	2,200.00		
	12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	337.00	2,390.00	194.00	4,560.00		
	04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	314.00	2,530.00	183.00	4,790.00		
	06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	295.00	2,420.00	NA	5,350.00		
	09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	298.00	2,500.00	159.00	5,280.00		
	11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	292.00	3,720.00	129.00	5,170.00		
	DUP	12/14/12	NA	NA	NA	NA	NA	NA	NA	NA	1,030.00	224.00	2,000.00		
	03/19/13	NA	NA	NA	NA	NA	NA	NA	NA	255.00	3,480.00	127.00	6,940.00		
	06/06/13	NA	NA	NA	NA	NA	NA	NA	NA	238.00	3,760.00	113.00	4,430.00		
	09/12/13	NA	NA	NA	NA	NA	NA	NA	NA	241.00	4,290.00	106.00	5,320.00		
	11/19/13	NA	NA	NA	NA	NA	NA	NA	NA	242.00	4,630.00	166.00	10,600.00		
	05/13/14	NA	NA	NA	NA	NA	NA	NA	NA	249.00	5,210.00	400.00	12,200.00		
	08/07/14	NA	NA	NA	NA	NA	NA	NA	NA	235.00	5,150.00	<400.00	13,400.00		
	11/05/14	NA	NA	NA	NA	NA	NA	NA	NA	229.00	4,510.00	296.00	12,500.00		
	03/06/15	NA	NA	NA	NA	NA	NA	NA	NA	223.00	4,430.00	395.00	12,400.00		
	03/06/15	NA	NA	NA	NA	NA	NA	NA	NA	223.00	4,440.00	384.00	12,100.00		
	06/10/15	NA	NA	NA	NA	NA	NA	NA	NA	227.00	5,310.00	291.00	12,000.00		
MW-12	DUP	06/10/15	NA	NA	NA	NA	NA	NA	NA	NA	227.00	5,100.00	267.00	13,900.00	
	09/29/15	NA	NA	NA	NA	NA	NA	NA	NA	221.00	4,970.00	281.00	7,150.00		
	12/16/15	NA	NA	NA	NA	NA	NA	NA	NA	218.00	5,510.00	157.00	11,700.00		
	03/15/16	NA	NA	NA	NA	NA	NA	NA	NA	215.00	4,970.00	169.00	11,300.00		
	06/23/16	NA	NA	NA	NA	NA	NA	NA	NA	216.00	4,570.00	102.00	11,900.00		
	09/30/16	NA	NA	NA	NA	NA	NA	NA	NA	214.00	4,900.00	180.00	12,700.00		
	12/16/16	NA	NA	NA	NA	NA	NA	NA	NA	151.00	3,020.00	150.00	8,390.00		
	03/28/17	NA	NA	NA	NA	NA	NA	NA	NA	218.00	5,100.00	102.00	11,200.00		
	06/27/17	NA	NA	NA	NA	NA	NA	NA	NA	201.00	4,620.00	161.00	11,400.00		
	09/20/17	NA	NA	NA	NA	NA	NA	NA	NA	185.00	5,570.00	230.00	8,980.00		
	12/19/17	NA	NA	NA	NA	NA	NA	NA	NA	187.00	4,790.00	151.00	10,100.00		
	02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	183.00	4,740.00	200.00	9,060.00		
	06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	202.00	5,040.00	175.00	7,530.00		
	09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	198.00	4,650.00	189.00	9,330.00		
	12/14/18	NA	NA	NA	NA	NA	NA	NA	NA	204.00	4,930.00	198.00	8,360.00		
	12/14/18	NA	NA	NA	NA	NA	NA	NA	NA	204.00	4,990.00	199.00	8,350.00		
	04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	192.00	5,050.00	194.00	10,900.00		
	06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	178.00	5,020.00	NA	14,200.00		
	09/11/19	NA	NA	NA	NA	NA	NA	NA	NA	158.00	5,050.00	218.00	15,000.00		
	09/11/19	NA	NA	NA	NA	NA	NA	NA	NA	168.00	5,030.00	215.00	14,600.00		
MW-13	DUP	11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	181.00	5,150.00	138.00	12,500.00	
	12/23/14	NA	NA	NA	NA	NA	NA	NA	NA	298.00	2,220.00	545.00	6,270.00		
	03/06/15	NA	NA	NA	NA	NA	NA	NA	NA	282.00	2,410.00	549.00	6,820.00		
	06/10/15	NA	NA	NA	NA	NA	NA	NA	NA	310.00	2,460.00	497.00	7,390.00		
	09/29/15	NA	NA	NA	NA	NA	NA	NA	NA	295.00	2,270.00	440.00	5,670.00		
	12/16/15	NA	NA	NA	NA	NA	NA	NA	NA	311.00	2,370.00	407.00	4,570.00		
	03/15/16	NA	NA	NA	NA	NA	NA	NA	NA	317.00	1,840.00	375.00	4,570.00		
	06/23/16	NA	NA	NA	NA	NA	NA	NA	NA	342.00	1,440.00	330.00	4,090.00		
	09/30/16	NA	NA	NA	NA	NA	NA	NA	NA	340.00	1,570.00	407.00	3,520.00		
	12/16/16	NA	NA	NA	NA	NA	NA	NA	NA	346.00	1,020.00	296.00	2,720.00		
	03/28/17	NA	NA	NA	NA	NA	NA	NA	NA	332.00	1,270.00	335.00	3,080.00		
	06/27/17	NA	NA	NA	NA	NA	NA	NA	NA	299.00	2,370.00	436.00	4,530.00		
	09/20/17	NA	NA	NA	NA	NA	NA	NA	NA	280.00	2,260.00	370.00	4,390.00		
	12/19/17	NA	NA	NA	NA	NA	NA	NA	NA	275.00	2,050.00	358.00	4,070.00		
	02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	262.00	1,530.00	355.00	3,860.00		
	06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	266.00	1,310.00	254.00	2,590.00		
	09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	271.00	1,270.00	257.00	3,390.00		
	12/14/18	NA	NA	NA	NA	NA	NA	NA	NA	297.00	1,520.00	282.00	3,040.00		
	04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	299.00	1,460.00	225.00	3,080.00		
	06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	279.00	1,470.00	NA	4,480.00		
09/12/19	NA	NA	NA	NA	NA	NA	NA	NA	568.00	1,550.00	207.00	5,090.00			
MW-13	DUP	11/23/19	NA	NA	NA	NA	NA	NA	NA	NA	298.00	646.00	154.00	3,440.00	
	08/07/14	NA	NA	NA	NA	NA	NA	NA	NA	183.00	7,330.00	729.00	8,940.00		
	11/05/14	NA	NA	NA	NA	NA	NA	NA	NA	179.00	6,510.00	851.00	16,100.00		
	03/06/15	NA	NA	NA	NA	NA	NA	NA	NA	155.00	6,350.00	814.00	17,600.00		
	06/10/15	NA	NA	NA	NA	NA	NA	NA	NA	182.00	7,940.00	929.00	20,800.00		
	09/29/15	NA	NA	NA	NA	NA	NA	NA	NA	175.00	8,260.00	893.00	20,500.00		
	12/16/15	NA	NA	NA	NA	NA	NA	NA	NA	178.00	8,610.00	796.00	16,700.00		
	03/15/16	NA	NA	NA	NA	NA	NA	NA	NA	179.00	8,810.00	801.00	19,500.00		
	06/23/16	NA	NA	NA	NA	NA	NA	NA	NA	182.00	7,730.00	717.00	20,700.00		
	09/30/16	NA	NA	NA	NA	NA	NA	NA	NA	189.00	8,730.00	986.00	18,400.00		
	12/16/16	NA	NA	NA	NA	NA	NA	NA	NA	184.00	7,770.00	838.00	18,800.00		
	03/28/17	NA	NA	NA	NA	NA	NA	NA	NA	195.00	6,880.00	949.00	18,900.00		
	06/27/17	NA	NA	NA	NA	NA	NA	NA	NA	196.00	6,970.00	996.00	19,000.00		
	09/20/17	NA	NA	NA	NA	NA	NA	NA	NA	178.00	10,900.00	1,070.00	18,700.00		
	12/19/17	NA	NA	NA	NA	NA	NA	NA	NA	188.00	9,820.00	1,030.00	17,500.00		
	02/13/18	NA	NA	NA	NA	NA	NA	NA	NA	174.00	10,500.00	1,150.00	20,900.00		
	06/14/18	NA	NA	NA	NA	NA	NA	NA	NA	203.00	10,600.00	965.00	17,800.00		
	09/14/18	NA	NA	NA	NA	NA	NA	NA	NA	210.00	9,510.00	851.00	16,500.00		
	12/13/18	NA	NA	NA	NA	NA	NA	NA	NA	213.00	10,100.00	992.00	17,200.00		
	04/05/19	NA	NA	NA	NA	NA	NA	NA	NA	202.00	10,100.00	936.00	17,400.00		
06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	191.00	10,700.00	NA	24,000.00			
09/11/19	NA	NA	NA	NA	NA	NA	NA	NA	196.00	10,400.00	848.00	26,600.00			
11/29/19	NA	NA	NA	NA	NA	NA	NA	NA	193.00	6,300.00	810.00	22,000.00			

Sample I.D. No.	Replicate Sample I.D.	Date	RCRA Metals									Groundwater Quality			
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolve Solids	
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	
			MMWQCC Human Health Standards for Groundwater ¹									MMWQCC Other Standards for Domestic Water Supply			
0.1	1.0	0.01	0.05	0.05	0.002	0.05	0.05	250	600	1,000					
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L				
MW-14	DUP	08/07/14	NA	NA	NA	NA	NA	NA	NA	401.00	328.00	3,200.00	2,310.00		
		11/05/14	NA	NA	NA	NA	NA	NA	NA	375.00	659.00	266.00	2,030.00		
		03/06/15	NA	NA	NA	NA	NA	NA	NA	365.00	786.00	269.00	2,050.00		
		06/10/15	NA	NA	NA	NA	NA	NA	NA	368.00	870.00	249.00	2,100.00		
		09/29/15	NA	NA	NA	NA	NA	NA	NA	363.00	832.00	229.00	2,180.00		
		12/16/15	NA	NA	NA	NA	NA	NA	NA	361.00	885.00	212.00	1,960.00		
		03/15/16	NA	NA	NA	NA	NA	NA	NA	374.00	777.00	181.00	2,020.00		
		06/23/16	NA	NA	NA	NA	NA	NA	NA	384.00	721.00	182.00	2,000.00		
		06/23/16	NA	NA	NA	NA	NA	NA	NA	380.00	726.00	180.00	2,030.00		
		09/30/16	NA	NA	NA	NA	NA	NA	NA	382.00	785.00	204.00	1,960.00		
		12/16/16	NA	NA	NA	NA	NA	NA	NA	378.00	825.00	178.00	2,140.00		
		03/28/17	NA	NA	NA	NA	NA	NA	NA	392.00	821.00	174.00	2,100.00		
		06/27/17	NA	NA	NA	NA	NA	NA	NA	372.00	787.00	195.00	1,850.00		
		09/20/17	NA	NA	NA	NA	NA	NA	NA	333.00	860.00	181.00	2,060.00		
		12/19/17	NA	NA	NA	NA	NA	NA	NA	337.00	813.00	166.00	2,270.00		
		02/13/18	NA	NA	NA	NA	NA	NA	NA	319.00	885.00	212.00	2,110.00		
MW-15		06/14/18	NA	NA	NA	NA	NA	NA	NA	351.00	823.00	176.00	2,000.00		
		09/14/18	NA	NA	NA	NA	NA	NA	NA	348.00	792.00	165.00	1,800.00		
		12/13/18	NA	NA	NA	NA	NA	NA	NA	349.00	894.00	201.00	1,880.00		
		04/05/19	NA	NA	NA	NA	NA	NA	NA	333.00	956.00	200.00	2,120.00		
		06/21/19	NA	NA	NA	NA	NA	NA	NA	306.00	908.00	NA	2,500.00		
		09/12/19	NA	NA	NA	NA	NA	NA	NA	307.00	953.00	186.00	2,320.00		
		11/23/19	NA	NA	NA	NA	NA	NA	NA	314.00	963.00	181.00	2,030.00		
		08/07/14	NA	NA	NA	NA	NA	NA	NA	202.00	1,340.00	502.00	3,840.00		
		11/05/14	NA	NA	NA	NA	NA	NA	NA	210.00	1,080.00	464.00	2,310.00		
		03/06/15	NA	NA	NA	NA	NA	NA	NA	236.00	770.00	353.00	2,130.00		
		06/10/15	NA	NA	NA	NA	NA	NA	NA	225.00	1,140.00	466.00	3,240.00		
		09/29/15	NA	NA	NA	NA	NA	NA	NA	215.00	1,110.00	485.00	8,740.00		
		12/16/15	NA	NA	NA	NA	NA	NA	NA	213.00	1,190.00	507.00	2,450.00		
		03/15/16	NA	NA	NA	NA	NA	NA	NA	217.00	1,116.00	482.00	3,140.00		
		06/23/16	NA	NA	NA	NA	NA	NA	NA	220.00	1,120.00	515.00	3,600.00		
		09/30/16	NA	NA	NA	NA	NA	NA	NA	221.00	1,120.00	559.00	3,360.00		
12/16/16	NA	NA	NA	NA	NA	NA	NA	274.00	375.00	209.00	1,320.00				
03/28/17	NA	NA	NA	NA	NA	NA	NA	224.00	1,070.00	510.00	2,740.00				
06/27/17	NA	NA	NA	NA	NA	NA	NA	217.00	1,000.00	507.00	2,820.00				
09/20/17	NA	NA	NA	NA	NA	NA	NA	197.00	1,030.00	462.00	3,110.00				
12/19/17	NA	NA	NA	NA	NA	NA	NA	206.00	966.00	459.00	2,940.00				
02/13/18	NA	NA	NA	NA	NA	NA	NA	195.00	959.00	540.00	2,360.00				
06/14/18	NA	NA	NA	NA	NA	NA	NA	212.00	1,010.00	493.00	2,320.00				
09/14/18	NA	NA	NA	NA	NA	NA	NA	210.00	951.00	459.00	2,280.00				
12/13/18	NA	NA	NA	NA	NA	NA	NA	215.00	986.00	546.00	2,450.00				
04/05/19	NA	NA	NA	NA	NA	NA	NA	209.00	1,020.00	495.00	2,560.00				
06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	998.00	NA	2,920.00				
09/12/19	NA	NA	NA	NA	NA	NA	NA	300.00	960.00	494.00	2,990.00				
11/23/19	NA	NA	NA	NA	NA	NA	NA	217.00	456.00	241.00	1,450.00				
MW-16		08/07/14	NA	NA	NA	NA	NA	NA	NA	283.00	549.00	351.00	114.00		
		11/05/14	NA	NA	NA	NA	NA	NA	NA	305.00	447.00	350.00	1,590.00		
		03/06/15	NA	NA	NA	NA	NA	NA	NA	307.00	513.00	318.00	1,910.00		
		06/10/15	NA	NA	NA	NA	NA	NA	NA	302.00	480.00	362.00	1,790.00		
		09/29/15	NA	NA	NA	NA	NA	NA	NA	292.00	473.00	364.00	1,760.00		
		12/16/15	NA	NA	NA	NA	NA	NA	NA	282.00	474.00	359.00	1,550.00		
		03/15/16	NA	NA	NA	NA	NA	NA	NA	286.00	507.00	341.00	1,870.00		
		06/23/16	NA	NA	NA	NA	NA	NA	NA	298.00	442.00	333.00	1,960.00		
		09/30/16	NA	NA	NA	NA	NA	NA	NA	290.00	516.00	448.00	1,820.00		
		12/16/16	NA	NA	NA	NA	NA	NA	NA	298.00	508.00	382.00	1,910.00		
		03/28/17	NA	NA	NA	NA	NA	NA	NA	342.00	527.00	382.00	1,850.00		
		06/27/17	NA	NA	NA	NA	NA	NA	NA	312.00	508.00	424.00	1,750.00		
		09/20/17	NA	NA	NA	NA	NA	NA	NA	299.00	424.00	378.00	1,750.00		
		12/19/17	NA	NA	NA	NA	NA	NA	NA	281.00	280.00	272.00	1,510.00		
		02/13/18	NA	NA	NA	NA	NA	NA	NA	326.00	339.00	322.00	1,310.00		
		06/14/18	NA	NA	NA	NA	NA	NA	NA	317.00	367.00	327.00	1,460.00		
09/14/18	NA	NA	NA	NA	NA	NA	NA	310.00	321.00	304.00	1,440.00				
12/13/18	NA	NA	NA	NA	NA	NA	NA	325.00	245.00	218.00	643.00				
04/05/19	NA	NA	NA	NA	NA	NA	NA	317.00	306.00	NA	1,130.00				
06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	386.00	NA	1,480.00				
09/12/19	NA	NA	NA	NA	NA	NA	NA	1,020.00	410.00	213.00	1,340.00				
11/23/19	NA	NA	NA	NA	NA	NA	NA	261.00	368.00	185.00	1,230.00				
12/16/16	NA	NA	NA	NA	NA	NA	NA	220.00	4,300.00	284.00	8,060.00				
03/28/17	NA	NA	NA	NA	NA	NA	NA	207.00	6,080.00	341.00	12,700.00				
06/27/17	NA	NA	NA	NA	NA	NA	NA	178.00	6,040.00	418.00	13,400.00				
09/20/17	NA	NA	NA	NA	NA	NA	NA	177.00	6,870.00	449.00	11,200.00				
12/19/17	NA	NA	NA	NA	NA	NA	NA	174.00	6,370.00	408.00	11,100.00				
02/13/18	NA	NA	NA	NA	NA	NA	NA	166.00	6,660.00	482.00	11,800.00				
06/14/18	NA	NA	NA	NA	NA	NA	NA	211.00	11,800.00	592.00	24,200.00				
09/14/18	NA	NA	NA	NA	NA	NA	NA	218.00	12,000.00	653.00	22,400.00				
12/14/18	NA	NA	NA	NA	NA	NA	NA	219.00	10,300.00	698.00	17,400.00				
04/05/19	NA	NA	NA	NA	NA	NA	NA	214.00	9,400.00	584.00	17,200.00				
06/21/19	NA	NA	NA	NA	NA	NA	NA	237.00	10,300.00	NA	23,200.00				
09/11/19	NA	NA	NA	NA	NA	NA	NA	186.00	9,030.00	544.00	21,200.00				
11/23/19	NA	NA	NA	NA	NA	NA	NA	194.00	9,050.00	488.00	17,900.00				
12/16/16	NA	NA	NA	NA	NA	NA	NA	152.00	1,180.00	128.00	2,780.00				
03/28/17	NA	NA	NA	NA	NA	NA	NA	221.00	2,610.00	149.00	5,900.00				
06/27/17	NA	NA	NA	NA	NA	NA	NA	221.00	2,680.00	183.00	4,900.00				
09/20/17	NA	NA	NA	NA	NA	NA	NA	208.00	2,770.00	179.00	4,050.00				
12/19/17	NA	NA	NA	NA	NA	NA	NA	219.00	1,710.00	146.00	3,240.00				
02/13/18	NA	NA	NA	NA	NA	NA	NA	217.00	1,580.00	166.00	2,750.00				
06/14/18	NA	NA	NA	NA	NA	NA	NA	222.00	1,170.00	131.00	2,560.00				
09/14/18	NA	NA	NA	NA	NA	NA	NA	226.00	1,380.00	145.00	3,050.00				
12/13/18	NA	NA	NA	NA	NA	NA	NA	228.00	1,410.00	159.00	2,900.00				
04/05/19	NA	NA	NA	NA	NA	NA	NA	229.00	1,360.00	138.00	2,830.00				
06/21/19	NA	NA	NA	NA	NA	NA	NA	211.00	988.00	NA	3,170.00				
09/11/19	NA	NA	NA	NA	NA	NA	NA	1,580.00	1,220.00	134.00	3,540.00				
11/23/19	NA	NA	NA	NA	NA	NA	NA	196.00	1,040.00	123.00	2,760.00				
12/16/16	NA	NA	NA	NA	NA	NA	NA	201.00	42.40	82.60	439.00				
03/28/17	NA	NA	NA	NA	NA	NA	NA	225.00	50.80	92.50	519.00				
06/27/17	NA	NA	NA	NA	NA	NA	NA	244.00	51.30	97.80	462.00				
09/20/17	NA	NA	NA	NA	NA	NA	NA	198.00	54.50	101.00	532.00				
12/19/17	NA	NA	NA	NA	NA	NA	NA	209.00	42.30	77.40	493.00				
02/13/18	NA	NA	NA	NA	NA	NA	NA	205.00	58.30	104.00	538.00				
06/14/18	NA	NA	NA	NA	NA	NA	NA	218.00	60.90	96.20	521.00				
09/14/18	NA	NA	NA	NA	NA	NA	NA	219.00	61.20	99.50	519.00				
12/14/18	NA	NA	NA	NA	NA	NA	NA	224.00	65.90	104.00	534.00				
04/20/19	NA	NA	NA	NA	NA	NA	NA	210.00	72.60	92.20	520.00				
06/21/19	NA	NA	NA	NA	NA	NA	NA	562.00	78.10	NA	516.00				
09/11/19	NA	NA	NA	NA	NA	NA	NA	382.00	82.10	97.90	599.00				
11/23/19	NA	NA	NA	NA	NA	NA	NA	382.00	82.10	98.90	599.00				

Appendix C
Cumulative Summary of Groundwater Analytical Results
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen
No. 9 Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 East
Lea County, New Mexico



Design & Consultancy
for natural and
built assets

Sample I.D. No.	Replicate Sample I.D.	Date	RCRA Metals								Groundwater Quality			
			Arsenic	Barium	Cadmium	Chromium	Lead	Mercury	Selenium	Silver	Total Alkalinity (CaCO ₃)	Chloride	Sulfate	Total Dissolve
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
			NMWQCC Human Health Standards for Groundwater ¹								NMWQCC Other Standards for Domestic Water Supply ²			
		0.1	1.0	0.01	0.05	0.05	0.002	0.05	0.05		250	600	1,000	
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		mg/L	mg/L	mg/L	
MW-20		12/16/16	NA	NA	NA	NA	NA	NA	NA	280.00	187.00	184.00	1,380.00	
		03/28/17	NA	NA	NA	NA	NA	NA	NA	295.00	199.00	224.00	1,120.00	
		06/27/17	NA	NA	NA	NA	NA	NA	NA	298.00	192.00	246.00	1,120.00	
		09/20/17	NA	NA	NA	NA	NA	NA	NA	268.00	211.00	256.00	1,030.00	
		12/19/17	NA	NA	NA	NA	NA	NA	NA	272.00	157.00	219.00	1,070.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	266.00	191.00	261.00	935.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	296.00	153.00	202.00	934.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	295.00	145.00	198.00	954.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	283.00	163.00	188.00	865.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	265.00	187.00	208.00	969.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	261.00	197.00	NA	1,330.00	
		09/11/19	NA	NA	NA	NA	NA	NA	NA	382.00	401.00	378.00	2,500.00	
MW-21		11/23/19	NA	NA	NA	NA	NA	NA	NA	324.00	274.00	245.00	1,460.00	
		12/16/16	NA	NA	NA	NA	NA	NA	NA	157.00	8,120.00	392.00	22,500.00	
		03/28/17	NA	NA	NA	NA	NA	NA	NA	202.00	9,720.00	618.00	20,100.00	
		06/27/17	NA	NA	NA	NA	NA	NA	NA	207.00	8,830.00	632.00	19,400.00	
		09/20/17	NA	NA	NA	NA	NA	NA	NA	186.00	10,800.00	784.00	18,400.00	
		12/19/17	NA	NA	NA	NA	NA	NA	NA	193.00	9,710.00	696.00	16,200.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	179.00	9,790.00	676.00	14,000.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	196.00	9,990.00	607.00	16,800.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	199.00	9,120.00	584.00	17,900.00	
		12/14/18	NA	NA	NA	NA	NA	NA	NA	200.00	9,380.00	621.00	16,400.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	206.00	9,640.00	525.00	17,900.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	195.00	10,400.00	NA	25,100.00	
MW-22		09/11/19	NA	NA	NA	NA	NA	NA	NA	223.00	10,600.00	536.00	26,900.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	200.00	11,300.00	486.00	21,300.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	227.00	87.40	36.50	437.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	210.00	80.90	NA	521.00	
MW-23		09/11/19	NA	NA	NA	NA	NA	NA	NA	196.00	79.70	44.50	444.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	210.00	84.50	50.40	360.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	267.00	4,990.00	247.00	9,600.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	264.00	6,770.00	NA	15,100.00	
MW-24		09/11/19	NA	NA	NA	NA	NA	NA	NA	698.00	5,270.00	240.00	12,500.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	240.00	8,680.00	346.00	11,500.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	185.00	1,670.00	203.00	3,390.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	192.00	1,590.00	NA	4,760.00	
MW-25		09/11/19	NA	NA	NA	NA	NA	NA	NA	223.00	1,530.00	188.00	4,380.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	200.00	2,230.00	284.00	3,640.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	247.00	2,150.00	560.00	4,600.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	2,140.00	NA	6,760.00	
DUP		09/12/19	NA	NA	NA	NA	NA	NA	NA	351.00	2,160.00	529.00	6,340.00	
		11/23/19	NA	NA	NA	NA	NA	NA	NA	237.00	1,360.00	289.00	6,180.00	
		09/13/11	NA	NA	NA	NA	NA	NA	NA	156.00	9,820.00	306.00	18,600.00	
		12/16/11	NA	NA	NA	NA	NA	NA	NA	177.00	18,000.00	661.00	32,200.00	
		03/22/12	NA	NA	NA	NA	NA	NA	NA	NA	17,800.00	944.00	34,200.00	
		06/11/12	NA	NA	NA	NA	NA	NA	NA	245.00	1,430.00	520.00	3,720.00	
		09/26/12	NA	NA	NA	NA	NA	NA	NA	183.00	19,100.00	665.00	35,500.00	
		12/13/12	NA	NA	NA	NA	NA	NA	NA	NA	17,300.00	633.00	29,600.00	
		03/19/13	NA	NA	NA	NA	NA	NA	NA	214.00	10,600.00	573.00	15,200.00	
		06/06/13	NA	NA	NA	NA	NA	NA	NA	203.00	17,000.00	457.00	27,200.00	
		06/06/13	NA	NA	NA	NA	NA	NA	NA	201.00	16,100.00	451.00	32,000.00	
	RW-1		09/12/13	NA	NA	NA	NA	NA	NA	NA	207.00	13,400.00	391.00	20,200.00
		11/19/13	NA	NA	NA	NA	NA	NA	NA	202.00	11,500.00	558.00	21,500.00	
		05/13/14	NA	NA	NA	NA	NA	NA	NA	194.00	15,200.00	763.00	30,500.00	
		08/07/14	NA	NA	NA	NA	NA	NA	NA	216.00	7,040.00	<400.00	14,100.00	
		11/05/14	NA	NA	NA	NA	NA	NA	NA	190.00	16,400.00	952.00	29,400.00	
		11/05/14	NA	NA	NA	NA	NA	NA	NA	192.00	14,700.00	889.00	29,500.00	
		03/06/15	NA	NA	NA	NA	NA	NA	NA	196.00	15,100.00	1,070.00	33,700.00	
		06/10/15	NA	NA	NA	NA	NA	NA	NA	243.00	2,020.00	227.00	4,750.00	
		09/29/15	NA	NA	NA	NA	NA	NA	NA	238.00	13,600.00	465.00	23,200.00	
		12/16/15	NA	NA	NA	NA	NA	NA	NA	258.00	4,420.00	155.00	6,900.00	
		03/15/16	NA	NA	NA	NA	NA	NA	NA	232.00	10,900.00	325.00	18,900.00	
		06/23/16	NA	NA	NA	NA	NA	NA	NA	217.00	6,250.00	214.00	13,000.00	
EB-1		09/30/16	NA	NA	NA	NA	NA	NA	NA	224.00	14,100.00	456.00	25,500.00	
		12/16/16	NA	NA	NA	NA	NA	NA	NA	230.00	10,300.00	322.00	21,900.00	
		03/28/17	NA	NA	NA	NA	NA	NA	NA	217.00	14,000.00	362.00	16,000.00	
		06/27/17	NA	NA	NA	NA	NA	NA	NA	213.00	12,200.00	442.00	218,000*	
		09/20/17	NA	NA	NA	NA	NA	NA	NA	196.00	13,600.00	549.00	17,500.00	
		12/19/17	NA	NA	NA	NA	NA	NA	NA	203.00	11,200.00	416.00	21,400.00	
		02/13/18	NA	NA	NA	NA	NA	NA	NA	220.00	4,950.00	337.00	14,000.00	
		06/14/18	NA	NA	NA	NA	NA	NA	NA	231.00	12,100.00	435.00	21,200.00	
		09/14/18	NA	NA	NA	NA	NA	NA	NA	227.00	9,520.00	348.00	17,100.00	
		12/13/18	NA	NA	NA	NA	NA	NA	NA	240.00	10,200.00	406.00	17,700.00	
		04/05/19	NA	NA	NA	NA	NA	NA	NA	242.00	8,000.00	347.00	13,600.00	
		06/21/19	NA	NA	NA	NA	NA	NA	NA	NA	7,870.00	NA	15,400.00	

Notes:
1) RCRA Metals Analysis by Environment Protection Agency (EPA) Methods 6010B and 7470A.
2) Groundwater Quality by EPA Methods 160.1, 300.0, and 310.1.
3) Bolded 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 than actual result; however reported value was verified by the laboratory

APPENDIX D

Cumulative Summary of Groundwater Potentiometric Elevation Data



Appendix D
Cumulative Summary of Groundwater Potentiometric Elevation Data
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9
Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-01	3405.22	4	16'-51'	2/13/2018	54.01	31.37	3373.85
				6/14/2018	53.49	31.57	3373.65
				9/14/2018	54.10	31.94	3373.28
				12/13/2018	53.44	31.47	3373.75
				4/4/2019	53.99	31.57	3373.65
				6/17/2019	54.00	31.56	3373.66
				9/11/2019	54.03	31.25	3373.97
				11/18/2019	54.03	31.62	3373.60
MW-02	3409.77	4	22'-57'	2/13/2018	60.22	35.06	3374.71
				6/14/2018	59.41	35.25	3374.52
				9/14/2018	60.46	35.40	3374.37
				12/13/2018	59.41	34.92	3374.85
				4/4/2019	60.00	35.10	3374.67
				6/17/2019	60.40	35.13	3374.64
				9/11/2019	60.32	35.41	3374.36
				11/19/2019	60.21	35.23	3374.54
MW-03	3408.61	4	19'-54'	2/13/2018	57.40	33.68	3374.93
				6/14/2018	57.40	34.90	3373.71
				9/14/2018	57.58	34.01	3374.60
				12/13/2018	57.40	33.48	3375.13
				4/4/2019	57.55	33.72	3374.89
				6/17/2019	57.64	33.80	3374.81
				9/11/2019	57.50	34.07	3374.54
				11/19/2019	57.44	33.83	3374.78
MW-04	3406.30	4	16'-51'	2/13/2018	54.12	31.70	3374.60
				6/14/2018	54.16	31.95	3374.35
				9/14/2018	54.41	32.05	3374.25
				12/13/2018	54.16	31.67	3374.63
				4/4/2019	54.01	31.80	3374.50
				6/17/2019	54.30	31.89	3374.41
				9/11/2019	54.21	32.14	3374.16
				11/19/2019	54.28	31.95	3374.35
MW-05	3403.68	4	15'-50'	2/13/2018	52.59	30.53	3373.15
				6/14/2018	52.60	30.73	3372.95
				9/14/2018	52.63	31.00	3372.68
				12/13/2018	52.60	30.72	3372.96
				4/4/2019	52.63	30.60	3373.08
				6/17/2019	52.70	30.72	3372.96
				9/11/2019	52.65	30.99	3372.69
				11/18/2019	52.64	30.91	3372.77

Appendix D
Cumulative Summary of Groundwater Potentiometric Elevation Data
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9
Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-06	3401.82	4	10'-45'	2/13/2018	48.51	28.39	3373.43
				6/14/2018	49.58	28.67	3373.15
				9/14/2018	48.45	28.85	3372.97
				12/13/2018	49.58	28.59	3373.23
				4/4/2019	48.62	28.51	3373.31
				6/18/2019	48.68	28.64	3373.18
				9/11/2019	48.59	28.91	3372.91
				11/19/2019	48.64	28.70	3373.12
MW-07	3403.63	4	13'-48'	2/13/2018	51.09	29.21	3374.42
				6/14/2018	50.84	29.56	3374.07
				9/14/2018	51.15	29.63	3374.00
				12/13/2018	50.84	29.25	3374.38
				4/4/2019	51.07	29.32	3374.31
				6/17/2019	51.24	29.45	3374.18
				9/11/2019	51.14	29.90	3373.73
				11/19/2019	54.11	29.48	3374.15
MW-08	3398.76	4	20'-50'	2/13/2018	53.33	26.49	3372.27
				6/14/2018	53.16	26.70	3372.06
				9/14/2018	53.14	27.03	3371.73
				12/13/2018	53.16	26.81	3371.95
				4/4/2019	53.27	26.65	3372.11
				6/18/2019	53.30	26.77	3371.99
				9/11/2019	53.24	27.03	3371.73
				11/19/2019	53.3	26.92	3371.84
MW-09	3406.31	4	20'-50'	2/13/2018	53.35	33.52	3372.79
				6/14/2018	53.30	33.72	3372.59
				9/14/2018	53.31	34.02	3372.29
				12/13/2018	53.30	33.68	3372.63
				4/4/2019	53.35	33.61	3372.70
				6/17/2019	53.52	33.69	3372.62
				9/10/2019	53.34	33.88	3372.43
				11/19/2019	53.38	33.80	3372.51
MW-10	3400.65	4	30'-60'	2/13/2018	62.36	29.90	3370.75
				6/14/2018	61.39	30.24	3370.41
				9/14/2018	61.43	30.45	3370.20
				12/13/2018	61.34	30.13	3370.52
				4/4/2019	61.35	30.03	3370.62
				6/17/2019	62.27	30.18	3370.47
				9/10/2019	61.49	30.57	3370.08
				11/18/2019	61.50	30.45	3370.20
MW-11	3413.22	4	40'-80'	2/13/2018	80.69	42.00	3371.22
				6/14/2018	80.83	42.01	3371.21
				9/14/2018	80.65	42.01	3371.21
				12/14/2018	80.83	41.99	3371.23
				4/4/2019	87.27	42.01	3371.21
				6/18/2019	80.95	41.96	3371.26
				9/10/2019	80.92	42.00	3371.22
				11/18/2019	81.75	41.99	3371.23

Appendix D
Cumulative Summary of Groundwater Potentiometric Elevation Data
CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9
Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-12	3418.90	2	45'-65'	2/13/2018	66.78	47.44	3371.46
				6/14/2018	66.34	47.42	3371.48
				9/14/2018	66.27	47.45	3371.45
				12/14/2018	66.34	47.39	3371.51
				4/4/2019	65.99	47.41	3371.49
				6/18/2019	66.12	47.38	3371.52
				9/10/2019	65.90	47.37	3371.53
				11/18/2019	65.79	47.40	3371.50
MW-13	3395.11	2	22'-42'	2/13/2018	45.13	27.44	3367.67
				6/14/2018	45.09	27.79	3367.32
				9/14/2018	45.18	28.08	3367.03
				12/13/2018	45.04	27.20	3367.91
				4/4/2019	45.07	27.42	3367.69
				6/18/2019	45.10	27.60	3367.51
				9/10/2019	45.09	27.98	3367.13
				11/18/2019	45.04	27.36	3367.75
MW-14	3396.91	2	25'-45'	2/13/2018	47.79	30.21	3366.70
				6/14/2018	47.74	30.61	3366.30
				9/14/2018	47.73	30.90	3366.01
				12/13/2018	47.74	30.18	3366.73
				4/4/2019	47.73	30.26	3366.65
				6/18/2019	47.82	30.56	3366.35
				9/10/2019	47.70	30.99	3365.92
				11/18/2019	47.66	30.62	3366.29
MW-15	3402.28	2	24'-44'	2/13/2018	46.65	27.95	3374.33
				6/14/2018	46.56	28.29	3373.99
				9/14/2018	46.45	28.43	3373.85
				12/13/2018	46.56	28.03	3374.25
				4/4/2019	46.65	28.12	3374.16
				6/17/2019	46.72	28.27	3374.01
				9/11/2019	46.59	28.56	3373.72
				11/19/2019	46.67	28.33	3373.95
MW-16	3415.43	2	33'-53'	2/13/2018	55.39	39.43	3376.00
				6/14/2018	55.33	39.70	3375.73
				9/14/2018	52.96	39.32	3376.11
				12/13/2018	55.33	39.13	3376.30
				4/4/2019	55.13	39.61	3375.82
				6/17/2019	55.09	39.56	3375.87
				9/10/2019	54.85	39.78	3375.65
				11/19/2019	54.94	39.49	3375.94

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Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-17	3427.10	2	36'-86'	2/13/2018	84.95	55.06	3372.04
				6/14/2018	84.62	54.98	3372.12
				9/14/2018	83.55	55.08	3372.02
				12/14/2018	84.62	54.90	3372.20
				4/4/2019	82.85	55.01	3372.09
				6/18/2019	81.50	54.93	3372.17
				9/10/2019	80.92	54.94	3372.16
				11/18/2019	80.84	54.92	3372.18
MW-18	3409.96	2	25'-65'	2/13/2018	67.25	38.40	3371.56
				6/14/2018	66.94	38.44	3371.52
				9/14/2018	66.93	38.60	3371.36
				12/13/2018	66.94	38.46	3371.50
				4/4/2019	66.47	38.40	3371.56
				6/18/2019	66.55	38.45	3371.51
				9/10/2019	66.56	38.50	3371.46
				11/18/2019	65.89	38.49	3371.47
MW-19	3409.48	2	32'-57'	2/13/2018	60.68	39.10	3370.38
				6/14/2018	60.04	39.10	3370.38
				9/14/2018	60.78	39.30	3370.18
				12/14/2018	60.04	39.14	3370.34
				4/4/2019	--	39.14	3370.34
				6/18/2019	60.44	32.12	3377.36
				9/10/2019	60.19	39.20	3370.28
				11/18/2019	59.77	39.16	3370.32
MW-20	3393.79	2	13'-58'	2/13/2018	62.82	25.13	3368.66
				6/14/2018	62.73	25.61	3368.18
				9/14/2018	62.68	25.90	3367.89
				12/13/2018	62.73	24.60	3369.19
				4/4/2019	62.00	25.31	3368.48
				6/18/2019	62.45	25.57	3368.22
				9/10/2019	62.13	26.13	3367.66
				11/18/2019	62.16	24.98	3368.81
MW-21	3395.16	2	20'-40'	2/13/2018	40.78	25.71	3369.45
				6/14/2018	40.77	25.89	3369.27
				9/14/2018	40.75	26.20	3368.96
				12/14/2018	40.77	25.63	3369.53
				4/4/2019	40.81	25.87	3369.29
				6/18/2019	40.86	25.81	3369.35
				9/10/2019	40.76	26.17	3368.99
				11/18/2019	40.67	25.98	3369.18

Appendix D
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CEMC
2019 Annual Groundwater Monitoring Report - Mark Owen No. 9
Reserve Pit
NW/4, SE/4, Section 34, Township 21 South, Range 37 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)
MW-22	3414.32	2	55'-65'	10/11/2018	67.15	43.55	3370.77
				12/14/2018	67.20	43.52	3370.80
				4/4/2019	--	43.48	3370.84
				6/18/2019	57.12	43.50	3370.82
				9/10/2019	67.03	43.52	3370.80
				11/18/2019	67.08	43.48	3370.84
MW-23	3403.09	2	36'-46'	10/11/2018	47.50	32.86	3370.23
				12/13/2018	47.50	32.60	3370.49
				4/4/2019	47.51	32.58	3370.51
				6/18/2019	47.50	32.60	3370.49
				9/10/2019	47.38	32.86	3370.23
				11/18/2019	47.52	32.74	3370.35
MW-24	3411.08	2	51'-61'	10/11/2018	63.80	38.23	3372.85
				12/13/2018	63.75	38.11	3372.97
				4/4/2019	63.72	38.10	3372.98
				6/18/2019	63.75	38.07	3373.01
				9/10/2019	63.74	38.17	3372.91
				11/19/2019	63.65	38.15	3372.93
MW-25	3405.83	2	34.5'-44.5'	10/11/2018	48.10	32.20	3373.63
				12/13/2018	48.28	31.97	3373.86
				4/4/2019	48.21	32.01	3373.82
				6/18/2019	48.30	32.15	3373.68
				9/10/2019	48.24	32.33	3373.50
				11/19/2019	48.27	32.22	3373.61
RW-1	3404.58	6	20'-50'	2/13/2018	53.30	30.69	3373.89
				6/14/2018	53.22	30.94	3373.64
				9/14/2018	53.32	31.13	3373.45
				12/13/2018	53.22	30.83	3373.75
				4/4/2019	53.21	30.83	3373.75
				6/17/2019	53.40	30.91	3373.67
				9/11/2019	53.33	31.16	3373.42
				11/18/2019	53.28	31.00	3373.58

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 E

Analytical Reports - 2019



Analytical Report 620286

for
GHD Services, INC- Midland

Project Manager: Janie Smith

Mark Owen No.9

046121

19-APR-19

Collected By: Client



**1211 W. Florida Ave
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco-Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)
Xenco-Lakeland: Florida (E84098)



19-APR-19

Project Manager: **Janie Smith**
GHD Services, INC- Midland
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **620286**
Mark Owen No.9
Project Address: Eunice NM

Janie Smith:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 620286. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 620286 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Debbie Simmons

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

Certified and approved by numerous States and Agencies.

A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



Sample Cross Reference 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1-190405	W	04-05-19 11:20		620286-001
MW-2-190405	W	04-05-19 11:10		620286-002
MW-3-190405	W	04-05-19 10:35		620286-003
MW-4-190405	W	04-05-19 10:45		620286-004
MW-5-190405	W	04-05-19 11:50		620286-005
MW-6-190405	W	04-05-19 10:25		620286-006
MW-7-190405	W	04-05-19 10:55		620286-007
MW-8-190405	W	04-05-19 11:40		620286-008
MW-9-190405	W	04-05-19 12:00		620286-009
MW-10-190405	W	04-05-19 12:10		620286-010
MW-11-190405	W	04-05-19 13:30		620286-011
MW-12-190405	W	04-05-19 14:00		620286-012
MW-13-190405	W	04-05-19 12:30		620286-013
MW-14-190405	W	04-05-19 12:20		620286-014
MW-15-190405	W	04-05-19 10:15		620286-015
MW-16-190405	W	04-05-19 09:55		620286-016
MW-17-190405	W	04-05-19 09:45		620286-017
MW-18-190405	W	04-05-19 13:45		620286-018
MW-19-190405	W	04-05-19 13:10		620286-019
MW-20-190405	W	04-05-19 12:50		620286-020
MW-21-190405	W	04-05-19 12:40		620286-021
MW-22-190405	W	04-05-19 13:20		620286-022
MW-23-190405	W	04-05-19 13:00		620286-023
MW-24-190405	W	04-05-19 12:30		620286-024
MW-25-190405	W	04-05-19 10:05		620286-025
RW-1-W-19405	W	04-05-19 11:30		620286-026
Dup-1-W-19405	W	04-05-19 00:00		620286-027
Dup-2-W-19405	W	04-05-19 00:00		620286-028



CASE NARRATIVE

Client Name: GHD Services, INC- Midland

Project Name: Mark Owen No.9

Project ID: 046121
Work Order Number(s): 620286

Report Date: 19-APR-19
Date Received: 04/05/2019

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3084963 Inorganic Anions by EPA 300

Lab Sample ID 620286-025 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 620286-021, -022, -023, -024, -025, -026, -027, -028.

The Laboratory Control Sample for Chloride , Sulfate is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3085066 Inorganic Anions by EPA 300

Lab Sample ID 620286-001 and 620286-011 were randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD).

Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 620286-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.



Certificate of Analysis Summary 620286

GHD Services, INC- Midland, Midland, TX

Project Name: Mark Owen No.9



Project Id: 046121
Contact: Janie Smith
Project Location: Eunice NM

Date Received in Lab: Fri Apr-05-19 04:11 pm
Report Date: 19-APR-19
Project Manager: Debbie Simmons

<i>Analysis Requested</i>	<i>Lab Id:</i>	620286-001	620286-002	620286-003	620286-004	620286-005	620286-006
	<i>Field Id:</i>	MW-1-190405	MW-2-190405	MW-3-190405	MW-4-190405	MW-5-190405	MW-6-190405
	<i>Depth:</i>						
	<i>Matrix:</i>	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER
	<i>Sampled:</i>	Apr-05-19 11:20	Apr-05-19 11:10	Apr-05-19 10:35	Apr-05-19 10:45	Apr-05-19 11:50	Apr-05-19 10:25
Alkalinity by SM2320B SUB: T104704215-19-29	<i>Extracted:</i>	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43
	<i>Analyzed:</i>	Apr-16-19 11:13	Apr-16-19 11:25	Apr-16-19 11:32	Apr-16-19 11:39	Apr-16-19 11:45	Apr-16-19 11:51
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Alkalinity, Total (CaCO3)		208 4.00	293 4.00	277 4.00	214 4.00	263 4.00	173 4.00
Inorganic Anions by EPA 300 SUB: T104704215-19-29	<i>Extracted:</i>	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42
	<i>Analyzed:</i>	Apr-09-19 10:54	Apr-09-19 11:20	Apr-09-19 11:29	Apr-09-19 11:47	Apr-09-19 11:56	Apr-09-19 12:04
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		7800 10.0	295 5.00	261 0.500	3460 10.0	3990 10.0	877 5.00
Sulfate		333 10.0	193 5.00	96.9 0.500	180 10.0	273 10.0	250 5.00
TDS by SM2540C SUB: T104704215-19-29	<i>Extracted:</i>						
	<i>Analyzed:</i>	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00
	<i>Units/RL:</i>	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total Dissolved Solids		13300 5.00	1110 5.00	878 5.00	5960 5.00	7260 5.00	1880 5.00

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Debbie Simmons
Project Manager



Certificate of Analysis Summary 620286

GHD Services, INC- Midland, Midland, TX

Project Name: Mark Owen No.9



Project Id: 046121
Contact: Janie Smith
Project Location: Eunice NM

Date Received in Lab: Fri Apr-05-19 04:11 pm
Report Date: 19-APR-19
Project Manager: Debbie Simmons

Analysis Requested	Lab Id:	620286-007	620286-008	620286-009	620286-010	620286-011	620286-012
	Field Id:	MW-7-190405	MW-8-190405	MW-9-190405	MW-10-190405	MW-11-190405	MW-12-190405
	Depth:						
	Matrix:	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER
	Sampled:	Apr-05-19 10:55	Apr-05-19 11:40	Apr-05-19 12:00	Apr-05-19 12:10	Apr-05-19 13:30	Apr-05-19 14:00
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted:	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43
	Analyzed:	Apr-16-19 12:11	Apr-16-19 12:17	Apr-16-19 12:23	Apr-16-19 12:30	Apr-16-19 12:37	Apr-16-19 12:49
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Alkalinity, Total (CaCO3)		204 4.00	185 4.00	280 4.00	314 4.00	192 4.00	299 4.00
Inorganic Anions by EPA 300 SUB: T104704215-19-29	Extracted:	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42
	Analyzed:	Apr-09-19 12:13	Apr-09-19 12:40	Apr-09-19 12:48	Apr-09-19 12:57	Apr-09-19 13:06	Apr-09-19 13:32
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		434 5.00	2150 10.0	4600 10.0	2530 10.0	5050 10.0	1460 10.0
Sulfate		153 5.00	572 10.0	304 10.0	183 10.0	194 10.0	225 10.0
TDS by SM2540C SUB: T104704215-19-29	Extracted:						
	Analyzed:	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total Dissolved Solids		1120 5.00	4260 5.00	8120 5.00	4790 5.00	10000 5.00	3080 5.00

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Debbie Simmons
Project Manager



Certificate of Analysis Summary 620286

GHD Services, INC- Midland, Midland, TX

Project Name: Mark Owen No.9



Project Id: 046121
Contact: Janie Smith
Project Location: Eunice NM

Date Received in Lab: Fri Apr-05-19 04:11 pm
Report Date: 19-APR-19
Project Manager: Debbie Simmons

Analysis Requested	Lab Id:	620286-013	620286-014	620286-015	620286-016	620286-017	620286-018
	Field Id:	MW-13-190405	MW-14-190405	MW-15-190405	MW-16-190405	MW-17-190405	MW-18-190405
	Depth:						
	Matrix:	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER
	Sampled:	Apr-05-19 12:30	Apr-05-19 12:20	Apr-05-19 10:15	Apr-05-19 09:55	Apr-05-19 09:45	Apr-05-19 13:45
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted:	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 10:43
	Analyzed:	Apr-16-19 12:55	Apr-16-19 13:03	Apr-16-19 13:09	Apr-16-19 13:29	Apr-16-19 13:36	Apr-16-19 13:42
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Alkalinity, Total (CaCO3)		202 4.00	332 4.00	209 4.00	317 4.00	214 4.00	229 4.00
Inorganic Anions by EPA 300 SUB: T104704215-19-29	Extracted:	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42	Apr-09-19 10:42
	Analyzed:	Apr-09-19 13:41	Apr-09-19 13:50	Apr-09-19 13:59	Apr-09-19 14:25	Apr-09-19 14:43	Apr-09-19 15:01
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		10100 10.0	956 10.0	1020 10.0	306 10.0	9400 10.0	1360 10.0
Sulfate		936 10.0	200 10.0	495 10.0	224 10.0	584 10.0	138 10.0
TDS by SM2540C SUB: T104704215-19-29	Extracted:						
	Analyzed:	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00	Apr-11-19 17:00
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total Dissolved Solids		17400 5.00	2120 5.00	2560 5.00	1130 5.00	17200 5.00	2810 5.00

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Debbie Simmons
Project Manager



Certificate of Analysis Summary 620286

GHD Services, INC- Midland, Midland, TX

Project Name: Mark Owen No.9



Project Id: 046121
Contact: Janie Smith
Project Location: Eunice NM

Date Received in Lab: Fri Apr-05-19 04:11 pm
Report Date: 19-APR-19
Project Manager: Debbie Simmons

Analysis Requested	Lab Id:	620286-019	620286-020	620286-021	620286-022	620286-023	620286-024
	Field Id:	MW-19-190405	MW-20-190405	MW-21-190405	MW-22-190405	MW-23-190405	MW-24-190405
	Depth:						
	Matrix:	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER
	Sampled:	Apr-05-19 13:10	Apr-05-19 12:50	Apr-05-19 12:40	Apr-05-19 13:20	Apr-05-19 13:00	Apr-05-19 12:30
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted:	Apr-16-19 10:43	Apr-16-19 10:43	Apr-16-19 11:00	Apr-16-19 11:00	Apr-16-19 11:00	Apr-16-19 11:00
	Analyzed:	Apr-16-19 13:48	Apr-16-19 13:54	Apr-16-19 14:33	Apr-16-19 14:46	Apr-16-19 14:53	Apr-16-19 14:59
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Alkalinity, Total (CaCO3)		210 4.00	265 4.00	206 4.00	227 4.00	267 4.00	185 4.00
Inorganic Anions by EPA 300 SUB: T104704215-19-29	Extracted:	Apr-09-19 10:42	Apr-09-19 10:42	Apr-08-19 16:10	Apr-08-19 16:10	Apr-08-19 16:10	Apr-08-19 16:10
	Analyzed:	Apr-09-19 15:10	Apr-09-19 15:18	Apr-09-19 02:04	Apr-09-19 02:22	Apr-09-19 02:39	Apr-09-19 02:48
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Chloride		72.6 10.0	187 10.0	9640 10.0	87.4 0.500	4990 10.0	1670 10.0
Sulfate		92.2 10.0	208 10.0	525 10.0	36.6 0.500	247 10.0	203 10.0
TDS by SM2540C SUB: T104704215-19-29	Extracted:						
	Analyzed:	Apr-11-19 17:00	Apr-11-19 17:00	Apr-12-19 08:30	Apr-12-19 08:30	Apr-12-19 08:30	Apr-12-19 08:30
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL	mg/L RL
Total Dissolved Solids		529 5.00	969 5.00	17900 5.00	437 5.00	9600 5.00	3390 5.00

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Debbie Simmons
Project Manager



Certificate of Analysis Summary 620286

GHD Services, INC- Midland, Midland, TX

Project Name: Mark Owen No.9



Project Id: 046121
Contact: Janie Smith
Project Location: Eunice NM

Date Received in Lab: Fri Apr-05-19 04:11 pm
Report Date: 19-APR-19
Project Manager: Debbie Simmons

Analysis Requested	Lab Id:	620286-025	620286-026	620286-027	620286-028		
	Field Id:	MW-25-190405	RW-1-W-19405	Dup-1-W-19405	Dup-2-W-19405		
	Depth:						
	Matrix:	GROUND WATER	GROUND WATER	GROUND WATER	GROUND WATER		
	Sampled:	Apr-05-19 10:05	Apr-05-19 11:30	Apr-05-19 00:00	Apr-05-19 00:00		
Alkalinity by SM2320B SUB: T104704215-19-29	Extracted:	Apr-16-19 11:00	Apr-16-19 11:00	Apr-16-19 11:00	Apr-16-19 11:00		
	Analyzed:	Apr-16-19 15:06	Apr-16-19 15:12	Apr-16-19 15:31	Apr-16-19 15:37		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Alkalinity, Total (CaCO3)		247 4.00	242 4.00	179 4.00	188 4.00		
Inorganic Anions by EPA 300 SUB: T104704215-19-29	Extracted:	Apr-08-19 16:10	Apr-08-19 16:10	Apr-08-19 16:10	Apr-08-19 16:10		
	Analyzed:	Apr-09-19 03:23	Apr-09-19 02:57	Apr-09-19 03:14	Apr-09-19 04:07		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Chloride		2150 10.0	8000 10.0	911 10.0	2200 10.0		
Sulfate		560 10.0	347 10.0	247 10.0	579 10.0		
TDS by SM2540C SUB: T104704215-19-29	Extracted:						
	Analyzed:	Apr-12-19 08:30	Apr-12-19 08:30	Apr-12-19 08:30	Apr-12-19 08:30		
	Units/RL:	mg/L RL	mg/L RL	mg/L RL	mg/L RL		
Total Dissolved Solids		4600 5.00	13600 5.00	2060 5.00	6030 5.00		

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Debbie Simmons
Project Manager



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GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-1-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-001

Date Collected: 04.05.19 11.20

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	208	4.00	mg/L	04.16.19 11.13		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	7800	10.0	mg/L	04.09.19 10.54		20
Sulfate	14808-79-8	333	10.0	mg/L	04.09.19 10.54		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	13300	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-2-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-002

Date Collected: 04.05.19 11.10

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	293	4.00	mg/L	04.16.19 11.25		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	295	5.00	mg/L	04.09.19 11.20		10
Sulfate	14808-79-8	193	5.00	mg/L	04.09.19 11.20		10

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	1110	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-3-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-003

Date Collected: 04.05.19 10.35

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	277	4.00	mg/L	04.16.19 11.32		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	261	0.500	mg/L	04.09.19 11.29		1
Sulfate	14808-79-8	96.9	0.500	mg/L	04.09.19 11.29		1

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	878	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-4-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-004

Date Collected: 04.05.19 10.45

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	214	4.00	mg/L	04.16.19 11.39		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3460	10.0	mg/L	04.09.19 11.47		20
Sulfate	14808-79-8	180	10.0	mg/L	04.09.19 11.47		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	5960	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-5-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-005

Date Collected: 04.05.19 11.50

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	263	4.00	mg/L	04.16.19 11.45		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3990	10.0	mg/L	04.09.19 11.56		20
Sulfate	14808-79-8	273	10.0	mg/L	04.09.19 11.56		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	7260	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-6-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-006

Date Collected: 04.05.19 10.25

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO3)	1640192	173	4.00	mg/L	04.16.19 11.51		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	877	5.00	mg/L	04.09.19 12.04		10
Sulfate	14808-79-8	250	5.00	mg/L	04.09.19 12.04		10

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	1880	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-7-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-007

Date Collected: 04.05.19 10.55

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	204	4.00	mg/L	04.16.19 12.11		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	434	5.00	mg/L	04.09.19 12.13		10
Sulfate	14808-79-8	153	5.00	mg/L	04.09.19 12.13		10

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	1120	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-8-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-008

Date Collected: 04.05.19 11.40

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	185	4.00	mg/L	04.16.19 12.17		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	10.0	mg/L	04.09.19 12.40		20
Sulfate	14808-79-8	572	10.0	mg/L	04.09.19 12.40		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	4260	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-9-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-009

Date Collected: 04.05.19 12.00

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	280	4.00	mg/L	04.16.19 12.23		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4600	10.0	mg/L	04.09.19 12.48		20
Sulfate	14808-79-8	304	10.0	mg/L	04.09.19 12.48		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	8120	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-10-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-010

Date Collected: 04.05.19 12.10

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	314	4.00	mg/L	04.16.19 12.30		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2530	10.0	mg/L	04.09.19 12.57		20
Sulfate	14808-79-8	183	10.0	mg/L	04.09.19 12.57		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	4790	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-11-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-011

Date Collected: 04.05.19 13.30

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	192	4.00	mg/L	04.16.19 12.37		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	5050	10.0	mg/L	04.09.19 13.06		20
Sulfate	14808-79-8	194	10.0	mg/L	04.09.19 13.06		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	10000	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-12-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-012

Date Collected: 04.05.19 14.00

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	299	4.00	mg/L	04.16.19 12.49		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1460	10.0	mg/L	04.09.19 13.32		20
Sulfate	14808-79-8	225	10.0	mg/L	04.09.19 13.32		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	3080	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-13-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-013

Date Collected: 04.05.19 12.30

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	202	4.00	mg/L	04.16.19 12.55		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	10100	10.0	mg/L	04.09.19 13.41		20
Sulfate	14808-79-8	936	10.0	mg/L	04.09.19 13.41		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	17400	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-14-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-014

Date Collected: 04.05.19 12.20

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	332	4.00	mg/L	04.16.19 13.03		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	956	10.0	mg/L	04.09.19 13.50		20
Sulfate	14808-79-8	200	10.0	mg/L	04.09.19 13.50		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	2120	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-15-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-015

Date Collected: 04.05.19 10.15

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	209	4.00	mg/L	04.16.19 13.09		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1020	10.0	mg/L	04.09.19 13.59		20
Sulfate	14808-79-8	495	10.0	mg/L	04.09.19 13.59		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	2560	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-16-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-016

Date Collected: 04.05.19 09.55

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	317	4.00	mg/L	04.16.19 13.29		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	306	10.0	mg/L	04.09.19 14.25		20
Sulfate	14808-79-8	224	10.0	mg/L	04.09.19 14.25		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	1130	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-17-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-017

Date Collected: 04.05.19 09.45

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	214	4.00	mg/L	04.16.19 13.36		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9400	10.0	mg/L	04.09.19 14.43		20
Sulfate	14808-79-8	584	10.0	mg/L	04.09.19 14.43		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	17200	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-18-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-018

Date Collected: 04.05.19 13.45

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO3)	1640192	229	4.00	mg/L	04.16.19 13.42		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1360	10.0	mg/L	04.09.19 15.01		20
Sulfate	14808-79-8	138	10.0	mg/L	04.09.19 15.01		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	2810	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-19-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-019

Date Collected: 04.05.19 13.10

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	210	4.00	mg/L	04.16.19 13.48		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.6	10.0	mg/L	04.09.19 15.10		20
Sulfate	14808-79-8	92.2	10.0	mg/L	04.09.19 15.10		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	529	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-20-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-020

Date Collected: 04.05.19 12.50

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 10.43

Seq Number: 3085877

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	265	4.00	mg/L	04.16.19 13.54		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.09.19 10.42

Seq Number: 3085066

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	187	10.0	mg/L	04.09.19 15.18		20
Sulfate	14808-79-8	208	10.0	mg/L	04.09.19 15.18		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085365

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	969	5.00	mg/L	04.11.19 17.00		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-21-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-021

Date Collected: 04.05.19 12.40

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	206	4.00	mg/L	04.16.19 14.33		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9640	10.0	mg/L	04.09.19 02.04		20
Sulfate	14808-79-8	525	10.0	mg/L	04.09.19 02.04		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	17900	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-22-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-022

Date Collected: 04.05.19 13.20

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	227	4.00	mg/L	04.16.19 14.46		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	87.4	0.500	mg/L	04.09.19 02.22		1
Sulfate	14808-79-8	36.6	0.500	mg/L	04.09.19 02.22		1

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	437	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-23-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-023

Date Collected: 04.05.19 13.00

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	267	4.00	mg/L	04.16.19 14.53		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	4990	10.0	mg/L	04.09.19 02.39		20
Sulfate	14808-79-8	247	10.0	mg/L	04.09.19 02.39		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	9600	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-24-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-024

Date Collected: 04.05.19 12.30

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	185	4.00	mg/L	04.16.19 14.59		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1670	10.0	mg/L	04.09.19 02.48		20
Sulfate	14808-79-8	203	10.0	mg/L	04.09.19 02.48		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	3390	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **MW-25-190405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-025

Date Collected: 04.05.19 10.05

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	247	4.00	mg/L	04.16.19 15.06		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2150	10.0	mg/L	04.09.19 03.23		20
Sulfate	14808-79-8	560	10.0	mg/L	04.09.19 03.23		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	4600	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **RW-1-W-19405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-026

Date Collected: 04.05.19 11.30

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	242	4.00	mg/L	04.16.19 15.12		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	8000	10.0	mg/L	04.09.19 02.57		20
Sulfate	14808-79-8	347	10.0	mg/L	04.09.19 02.57		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	13600	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **Dup-1-W-19405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-027

Date Collected: 04.05.19 00.00

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	179	4.00	mg/L	04.16.19 15.31		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	911	10.0	mg/L	04.09.19 03.14		20
Sulfate	14808-79-8	247	10.0	mg/L	04.09.19 03.14		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	2060	5.00	mg/L	04.12.19 08.30		1



Certificate of Analytical Results 620286



GHD Services, INC- Midland, Midland, TX

Mark Owen No.9

Sample Id: **Dup-2-W-19405**

Matrix: Ground Water

Date Received: 04.05.19 16.11

Lab Sample Id: 620286-028

Date Collected: 04.05.19 00.00

Analytical Method: Alkalinity by SM2320B

Prep Method: SM2320P

Tech: YAV

% Moisture:

Analyst: YAV

Date Prep: 04.16.19 11.00

Seq Number: 3085879

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Alkalinity, Total (CaCO ₃)	1640192	188	4.00	mg/L	04.16.19 15.37		1

Analytical Method: Inorganic Anions by EPA 300

Prep Method: E300P

Tech: JYM

% Moisture:

Analyst: JYM

Date Prep: 04.08.19 16.10

Seq Number: 3084963

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2200	10.0	mg/L	04.09.19 04.07		20
Sulfate	14808-79-8	579	10.0	mg/L	04.09.19 04.07		20

Analytical Method: TDS by SM2540C

Tech: JCL

% Moisture:

Analyst: JCL

Seq Number: 3085389

SUB: T104704215-19-29

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Total Dissolved Solids	1642222	6030	5.00	mg/L	04.12.19 08.30		1

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

****** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation



QC Summary 620286

GHD Services, INC- Midland

Mark Owen No.9

Analytical Method: Alkalinity by SM2320B

Seq Number: 3085877

MB Sample Id: 7675822-1-BLK

Matrix: Water

LCS Sample Id: 7675822-1-BKS

Prep Method: SM2320P

Date Prep: 04.16.19

LCSD Sample Id: 7675822-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	<4.00	250	236	94	238	95	80-120	1	20	mg/L	04.16.19 10:59	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3085877

MB Sample Id: 7675875-1-BLK

Matrix: Water

LCS Sample Id: 7675875-1-BKS

Prep Method: SM2320P

Date Prep: 04.16.19

LCSD Sample Id: 7675875-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	<4.00	250	256	102	254	102	80-120	1	20	mg/L	04.16.19 14:20	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3085877

Parent Sample Id: 620286-001

Matrix: Ground Water

MD Sample Id: 620286-001 D

Prep Method: SM2320P

Date Prep: 04.16.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	208	196	6	20	mg/L	04.16.19 11:19	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3085877

Parent Sample Id: 620286-011

Matrix: Ground Water

MD Sample Id: 620286-011 D

Prep Method: SM2320P

Date Prep: 04.16.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	192	191	1	20	mg/L	04.16.19 12:43	

Analytical Method: Alkalinity by SM2320B

Seq Number: 3085877

Parent Sample Id: 620286-021

Matrix: Ground Water

MD Sample Id: 620286-021 D

Prep Method: SM2320P

Date Prep: 04.16.19

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Alkalinity, Total (CaCO3)	206	206	0	20	mg/L	04.16.19 14:40	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 620286

GHD Services, INC- Midland

Mark Owen No.9

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084963

MB Sample Id: 7675283-1-BLK

Matrix: Water

LCS Sample Id: 7675283-1-BKS

Prep Method: E300P

Date Prep: 04.08.19

LCSD Sample Id: 7675283-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	10.0	10.2	102	10.2	102	90-110	0	20	mg/L	04.09.19 00:27	
Sulfate	<0.500	10.0	9.67	97	9.79	98	90-110	1	20	mg/L	04.09.19 00:27	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085066

MB Sample Id: 7675324-1-BLK

Matrix: Water

LCS Sample Id: 7675324-1-BKS

Prep Method: E300P

Date Prep: 04.09.19

LCSD Sample Id: 7675324-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.500	10.0	10.2	102	10.2	102	90-110	0	20	mg/L	04.09.19 08:19	
Sulfate	<0.500	10.0	9.81	98	9.86	99	90-110	1	20	mg/L	04.09.19 08:19	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084963

Parent Sample Id: 620173-001

Matrix: Waste Water

MS Sample Id: 620173-001 S

Prep Method: E300P

Date Prep: 04.08.19

MSD Sample Id: 620173-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	543	200	757	107	759	108	90-110	0	20	mg/L	04.09.19 00:53	
Sulfate	323	200	545	111	548	113	90-110	1	20	mg/L	04.09.19 00:53	X

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3084963

Parent Sample Id: 620286-025

Matrix: Ground Water

MS Sample Id: 620286-025 S

Prep Method: E300P

Date Prep: 04.08.19

MSD Sample Id: 620286-025 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	2150	200	2310	80	2310	80	90-110	0	20	mg/L	04.09.19 03:50	X
Sulfate	560	200	743	92	747	94	90-110	1	20	mg/L	04.09.19 03:50	

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085066

Parent Sample Id: 620286-001

Matrix: Ground Water

MS Sample Id: 620286-001 S

Prep Method: E300P

Date Prep: 04.09.19

MSD Sample Id: 620286-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7800	200	7940	70	7940	70	90-110	0	20	mg/L	04.09.19 11:03	X
Sulfate	333	200	530	99	532	100	90-110	0	20	mg/L	04.09.19 11:03	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
 $\text{Log Diff.} = \text{Log}(\text{Sample Duplicate}) - \text{Log}(\text{Original Sample})$

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 620286

GHD Services, INC- Midland

Mark Owen No.9

Analytical Method: Inorganic Anions by EPA 300

Seq Number: 3085066

Parent Sample Id: 620286-011

Matrix: Ground Water

MS Sample Id: 620286-011 S

Prep Method: E300P

Date Prep: 04.09.19

MSD Sample Id: 620286-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	5050	200	5170	60	5160	55	90-110	0	20	mg/L	04.09.19 13:15	X
Sulfate	194	200	389	98	391	99	90-110	1	20	mg/L	04.09.19 13:15	

Analytical Method: TDS by SM2540C

Seq Number: 3085365

MB Sample Id: 3085365-1-BLK

Matrix: Water

LCS Sample Id: 3085365-1-BKS

LCSD Sample Id: 3085365-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	876	88	915	92	80-120	4	10	mg/L	04.11.19 17:00	

Analytical Method: TDS by SM2540C

Seq Number: 3085389

MB Sample Id: 3085389-1-BLK

Matrix: Water

LCS Sample Id: 3085389-1-BKS

LCSD Sample Id: 3085389-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	<5.00	1000	911	91	946	95	80-120	4	10	mg/L	04.12.19 08:30	

Analytical Method: TDS by SM2540C

Seq Number: 3085365

Parent Sample Id: 620286-001

Matrix: Ground Water

MD Sample Id: 620286-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	13300	13400	1	10	mg/L	04.11.19 17:00	

Analytical Method: TDS by SM2540C

Seq Number: 3085365

Parent Sample Id: 620286-011

Matrix: Ground Water

MD Sample Id: 620286-011 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	10000	10100	1	10	mg/L	04.11.19 17:00	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



QC Summary 620286

GHD Services, INC- Midland Mark Owen No.9

Analytical Method: TDS by SM2540C

Seq Number: 3085389

Parent Sample Id: 620286-021

Matrix: Ground Water

MD Sample Id: 620286-021 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	17900	17700	1	10	mg/L	04.12.19 08:30	

Analytical Method: TDS by SM2540C

Seq Number: 3085389

Parent Sample Id: 620754-001

Matrix: Water

MD Sample Id: 620754-001 D

Parameter	Parent Result	MD Result	%RPD	RPD Limit	Units	Analysis Date	Flag
Total Dissolved Solids	651	597	9	10	mg/L	04.12.19 08:30	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

$[D] = 100 * (C - A) / B$
 $RPD = 200 * |(C - E) / (C + E)|$
 $[D] = 100 * (C) / [B]$
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



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Work Order Comments	
Program: UST/ST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

[illegible][illegible]

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		4/5/19/2011			

Houston, TX (281) 240-4200 Dallas, TX (214) 902-0300 San Antonio, TX (210) 509-3333
Midland, TX (432-704-5440) El Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
Phoenix, AZ (480-335-0900) Atlanta, GA (770-449-8800) Tampa, FL (813) 281-2222
Hobbs, NM (575-382-7550)

Work Order No:
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Page 2 of 3

Project Manager:	Christopher Knight	Bill to: (if different)	Kegan Boyer
Company Name:	GHD	Company Name:	Chevron EMC
Address:	2135 S Loop 250 W	Address:	1400 Smith Street Room 07076
City, State ZIP:	Midland, TX 79703	City, State ZIP:	Houston, TX 77002
Phone:	512-506-8803	Email:	Jeanie.Smith@ghd.com, Christopher.Knight@ghd.com, Stephanie.castracane@ghd.com

Work Order Comments	
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐	
State of Project:	
Reporting: Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐	
Deliverables: EDD ☐ ADAPT ☐ Other:	

Project Name:	Mark Owen No. 9	Turn Around	ANALYSIS REQUEST							Work Order Notes
Project Number:	046121/2019	Routine ☐								
P.O. Number:		Rush:								
Sampler's Name:	Justin Meyer	Due Date:								

SAMPLE RECEIPT		Temp Blank:	Yes	No	Well Ice:	Yes	No
Temperature (°C):	0.00	Thermometer ID					
Received intact:	Yes	No					
Cooler Custody Seals:	Yes	No	Correction Factor:		1.1		
Sample Custody Seals:	Yes	No	Total Containers:				

Number of Containers

Quantity

Label

Notes

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

[illegible]

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 SiO ₂ Na Sr Ti Sn U V Zn
<i>Circle Method(s) and Metal(s) to be analyzed</i>			TCLP / SPLP	6010:	8RCRA	Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U 1631 / 245.1 / 7470 / 7471 : Hg

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		4-5-19 11:01			

Houston, TX (281) 240-4200 Dallas, TX (214) 502-0300 San Antonio, TX (210) 509-3334
 Midland, TX (432-704-5440) EL Paso, TX (915) 585-3443 Lubbock, TX (806) 794-1296
 Phoenix AZ (480-355-0900) Atlanta GA (770-444-8800) Tampa FL (813-392-7550)

Page 33 of 33

Hobbs NM (575-392-7550) Phoenix AZ (480-355-0900) Atlanta GA (770-449-8800) Tampa FL (813-620-2000)

Page 1 of 1

Project Manager:	Christopher Knight	Bill to: (if different)	Kegan Boyer
Company Name:	GHD	Company Name:	Chevron EMC
Address:	2135 S Loop 250 W	Address:	1400 Smith Street Room 07076
City, State ZIP:	Midland, TX 79703	City, State ZIP:	Houston, TX 77002
Phone:	512-506-8603	Email:	Jamie.Smith@ghd.com, Christopher.Knight@ghd.com, Stephanie.castracane@ghd.com

Work Order Comments
Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADAPT ☐ Other:

Project Name:		Mark Owen No. 9		Turn Around		ANALYSIS REQUEST										Work Order Notes	
Project Number:		046121/2019		Routine ☐													
P.O. Number:				Rush:													
Sampler's Name:		Justin Muen		Due Date:													
SAMPLE RECEIPT				Temp Blank:	Yes ☒ No ☐	Wet Ice:	Yes ☒ No ☐										
Temperature (°C):		5.04		Thermometer ID													
Received Intact:		Yes ☒ No ☐															
Cooler Custody Seals:		Yes ☒ No ☐ N/A		Correction Factor:		0.01											
Sample Custody Seals:		Yes ☐ No ☒ N/A		Total Containers:													
Sample Identification		Matrix	Date Sampled	Time Sampled	Depth												
Am-24-W-190405		GW	4-5-19	1240													
Am-22-W-190405				1320													
Am-23-W-190405				1300													
Am-24-W-190405				1230													
Am-25-W-190405				1005													
Am-1-W-190405				1120													
Am-1-W-190405				-													
Am-2-W-190405				-													
Number of Containers						1											
Alkalinity						X											
Chloride						X											
Sulfate						X											
TDS						X											
						TAT starts the day received by the lab, if received by 4:30pm											
Sample Comments																	

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

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1 		4/5/79	2		
3		1/2/11	4		
5			6		

Revised Date 05/14/18 Rev. 2016

Inter-Office Shipment

IOS Number : 126104

Date/Time:	04.05.2019 17:46	Created by:	Katie Lowe	Please send report to:	Debbie Simmons
Lab# From:	Midland	Delivery Priority:		Address:	1211 W. Florida Ave
Lab# To:	Houston	Air Bill No.:	774901939030	E-Mail:	debbie.simmons@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620286-001	W	MW-1-190405	04.05.2019 11:20	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-001	W	MW-1-190405	04.05.2019 11:20	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-001	W	MW-1-190405	04.05.2019 11:20	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-002	W	MW-2-190405	04.05.2019 11:10	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-002	W	MW-2-190405	04.05.2019 11:10	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-002	W	MW-2-190405	04.05.2019 11:10	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-003	W	MW-3-190405	04.05.2019 10:35	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-003	W	MW-3-190405	04.05.2019 10:35	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-003	W	MW-3-190405	04.05.2019 10:35	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-004	W	MW-4-190405	04.05.2019 10:45	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-004	W	MW-4-190405	04.05.2019 10:45	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-004	W	MW-4-190405	04.05.2019 10:45	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-005	W	MW-5-190405	04.05.2019 11:50	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-005	W	MW-5-190405	04.05.2019 11:50	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-005	W	MW-5-190405	04.05.2019 11:50	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-006	W	MW-6-190405	04.05.2019 10:25	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-006	W	MW-6-190405	04.05.2019 10:25	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-006	W	MW-6-190405	04.05.2019 10:25	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-007	W	MW-7-190405	04.05.2019 10:55	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-007	W	MW-7-190405	04.05.2019 10:55	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-007	W	MW-7-190405	04.05.2019 10:55	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-008	W	MW-8-190405	04.05.2019 11:40	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-008	W	MW-8-190405	04.05.2019 11:40	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-008	W	MW-8-190405	04.05.2019 11:40	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-009	W	MW-9-190405	04.05.2019 12:00	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	

Inter-Office Shipment

IOS Number : 126104

Date/Time:	04.05.2019 17:46	Created by:	Katie Lowe	Please send report to:	Debbie Simmons
Lab# From:	Midland	Delivery Priority:		Address:	1211 W. Florida Ave
Lab# To:	Houston	Air Bill No.:	774901939030	E-Mail:	debbie.simmons@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620286-009	W	MW-9-190405	04.05.2019 12:00	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-009	W	MW-9-190405	04.05.2019 12:00	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-010	W	MW-10-190405	04.05.2019 12:10	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-010	W	MW-10-190405	04.05.2019 12:10	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-010	W	MW-10-190405	04.05.2019 12:10	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-011	W	MW-11-190405	04.05.2019 13:30	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-011	W	MW-11-190405	04.05.2019 13:30	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-011	W	MW-11-190405	04.05.2019 13:30	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-012	W	MW-12-190405	04.05.2019 14:00	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-012	W	MW-12-190405	04.05.2019 14:00	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-012	W	MW-12-190405	04.05.2019 14:00	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-013	W	MW-13-190405	04.05.2019 12:30	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-013	W	MW-13-190405	04.05.2019 12:30	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-013	W	MW-13-190405	04.05.2019 12:30	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-014	W	MW-14-190405	04.05.2019 12:20	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-014	W	MW-14-190405	04.05.2019 12:20	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-014	W	MW-14-190405	04.05.2019 12:20	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-015	W	MW-15-190405	04.05.2019 10:15	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-015	W	MW-15-190405	04.05.2019 10:15	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-015	W	MW-15-190405	04.05.2019 10:15	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-016	W	MW-16-190405	04.05.2019 09:55	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-016	W	MW-16-190405	04.05.2019 09:55	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-016	W	MW-16-190405	04.05.2019 09:55	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-017	W	MW-17-190405	04.05.2019 09:45	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-017	W	MW-17-190405	04.05.2019 09:45	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	

Inter Office Shipment or Sample Comments:

Inter-Office Shipment

IOS Number : 126104

Date/Time:	04.05.2019 17:46	Created by:	Katie Lowe	Please send report to:	Debbie Simmons
Lab# From:	Midland	Delivery Priority:		Address:	1211 W. Florida Ave
Lab# To:	Houston	Air Bill No.:	774901939030	E-Mail:	debbie.simmons@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620286-017	W	MW-17-190405	04.05.2019 09:45	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-018	W	MW-18-190405	04.05.2019 13:45	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-018	W	MW-18-190405	04.05.2019 13:45	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-018	W	MW-18-190405	04.05.2019 13:45	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-019	W	MW-19-190405	04.05.2019 13:10	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-019	W	MW-19-190405	04.05.2019 13:10	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-019	W	MW-19-190405	04.05.2019 13:10	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-020	W	MW-20-190405	04.05.2019 12:50	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-020	W	MW-20-190405	04.05.2019 12:50	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-020	W	MW-20-190405	04.05.2019 12:50	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-021	W	MW-21-190405	04.05.2019 12:40	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-021	W	MW-21-190405	04.05.2019 12:40	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-021	W	MW-21-190405	04.05.2019 12:40	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-022	W	MW-22-190405	04.05.2019 13:20	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-022	W	MW-22-190405	04.05.2019 13:20	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-022	W	MW-22-190405	04.05.2019 13:20	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-023	W	MW-23-190405	04.05.2019 13:00	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-023	W	MW-23-190405	04.05.2019 13:00	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-023	W	MW-23-190405	04.05.2019 13:00	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-024	W	MW-24-190405	04.05.2019 12:30	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-024	W	MW-24-190405	04.05.2019 12:30	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-024	W	MW-24-190405	04.05.2019 12:30	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-025	W	MW-25-190405	04.05.2019 10:05	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-025	W	MW-25-190405	04.05.2019 10:05	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-025	W	MW-25-190405	04.05.2019 10:05	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	

Inter Office Shipment or Sample Comments:

Relinquished By:

Received By:

Inter-Office Shipment

IOS Number : 126104

Date/Time: 04.05.2019 17:46 Created by: Katie Lowe

Lab# From: **Midland** Delivery Priority:

Lab# To: **Houston** Air Bill No.: 774901939030

Please send report to: Debbie Simmons

Address: 1211 W. Florida Ave

E-Mail: debbie.simmons@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
620286-026	W	RW-1-W-19405	04.05.2019 11:30	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-026	W	RW-1-W-19405	04.05.2019 11:30	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-026	W	RW-1-W-19405	04.05.2019 11:30	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-027	W	Dup-1-W-19405	04.05.2019 00:00	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-027	W	Dup-1-W-19405	04.05.2019 00:00	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	
620286-027	W	Dup-1-W-19405	04.05.2019 00:00	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-028	W	Dup-2-W-19405	04.05.2019 00:00	SM2540C	TDS by SM2540C	04.15.2019	04.12.2019	DES	TDS	
620286-028	W	Dup-2-W-19405	04.05.2019 00:00	SM2320B	Alkalinity by SM2320B	04.15.2019	04.19.2019	DES	ALK	
620286-028	W	Dup-2-W-19405	04.05.2019 00:00	E300	Inorganic Anions by EPA 300	04.15.2019	05.03.2019	DES	CL SO4	

Inter Office Shipment or Sample Comments:

Date Relinquished:



Katie Lowe

04.05.2019

Date Received:



Travis Simmons

04.06.2019 10:00

Cooler Temperature: 3.1



XENCO Laboratories



Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 126104

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : HOU-068

Sent By: Katie Lowe

Date Sent: 04/05/2019 05:46 PM

Received By: Travis Simmons

Date Received: 04/06/2019 10:00 AM

Sample Receipt Checklist

Comments

#1 *Temperature of cooler(s)?	3.1
#2 *Shipping container in good condition?	Yes
#3 *Samples received with appropriate temperature?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 *Custody Seals Signed and dated for Containers/coolers	Yes
#6 *IOS present?	Yes
#7 Any missing/extra samples?	No
#8 IOS agrees with sample label(s)/matrix?	Yes
#9 Sample matrix/ properties agree with IOS?	Yes
#10 Samples in proper container/ bottle?	Yes
#11 Samples properly preserved?	Yes
#12 Sample container(s) intact?	Yes
#13 Sufficient sample amount for indicated test(s)?	Yes
#14 All samples received within hold time?	Yes

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ Contacted by : _____ Date: _____

Checklist reviewed by:

Travis Simmons

Date: 04/06/2019

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD Services, INC- Midland

Date/ Time Received: 04.05.2019 04.11.00 PM

Work Order #: 620286

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

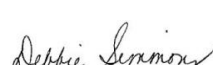
Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.4
#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 Xenco Stafford
#18 Water VOC samples have zero headspace?	N/A

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

Analyst: BT

PH Device/Lot#: A032690

Checklist completed by:	 Katie Lowe	Date: 04.05.2019
Checklist reviewed by:	 Debbie Simmons	Date: 04.07.2019

June 2019 Event



ANALYTICAL REPORT

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

Laboratory Job ID: 600-187450-1

Client Project/Site: Midland - Chevron/ Kegan Boyer

For:

ARCADIS U.S., Inc.
1004 North Big Spring
Suite 121
Midland, Texas 79701

Attn: Mr. Brett Krehbiel



Authorized for release by:
7/15/2019 1:46:03 PM

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

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

Case Narrative 3

Method Summary 4

Sample Summary 5

Client Sample Results 6

Definitions/Glossary 14

QC Sample Results 15

Default Detection Limits 19

QC Association Summary 20

Lab Chronicle 23

Certification Summary 29

Chain of Custody 30

Receipt Checklists 34



Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Job ID: 600-187450-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative 600-187450-1

Comments

No additional comments.

Receipt

The samples were received on 6/22/2019 9:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.2° C and 0.7° C.

Receipt Exceptions

The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): MW-18 (600-187450-29)
Logged in per container labels

General Chemistry

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: 600-187450-1

Project/Site: Midland - Chevron/ Kegan Boyer

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL HOU
2320B-1997	Alkalinity, Total - SM Online, 2011	SM-Online	TAL HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL HOU

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM-Online = Standard Methods Online

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.

Job ID: 600-187450-1

Project/Site: Midland - Chevron/ Kegan Boyer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-187450-1	MW-16	Water	06/21/19 09:22	06/22/19 09:01	
600-187450-2	MW-25	Water	06/21/19 09:29	06/22/19 09:01	
600-187450-3	MW-15	Water	06/21/19 09:34	06/22/19 09:01	
600-187450-4	MW-6	Water	06/21/19 09:41	06/22/19 09:01	
600-187450-5	MW-8	Water	06/21/19 09:50	06/22/19 09:01	
600-187450-6	MW-7	Water	06/21/19 10:02	06/22/19 09:01	
600-187450-7	MW-3	Water	06/21/19 10:16	06/22/19 09:01	
600-187450-8	MW-2	Water	06/21/19 10:23	06/22/19 09:01	
600-187450-9	MW-4	Water	06/21/19 10:30	06/22/19 09:01	
600-187450-10	RW-1	Water	06/21/19 10:38	06/22/19 09:01	
600-187450-11	DUP-1	Water	06/21/19 00:00	06/22/19 09:01	
600-187450-12	DUP-2	Water	06/21/19 00:00	06/22/19 09:01	
600-187450-13	MW-1	Water	06/21/19 10:43	06/22/19 09:01	
600-187450-14	MW-5	Water	06/21/19 10:50	06/22/19 09:01	
600-187450-15	MW-9	Water	06/21/19 11:00	06/22/19 09:01	
600-187450-16	MW-10	Water	06/21/19 11:04	06/22/19 09:01	
600-187450-17	MW-14	Water	06/21/19 11:10	06/22/19 09:01	
600-187450-18	MW-13	Water	06/21/19 11:18	06/22/19 09:01	
600-187450-19	MW-21	Water	06/21/19 11:23	06/22/19 09:01	
600-187450-20	MW-20	Water	06/21/19 11:29	06/22/19 09:01	
600-187450-21	MW-19	Water	06/21/19 11:32	06/22/19 09:01	
600-187450-22	MW-22	Water	06/21/19 11:43	06/22/19 09:01	
600-187450-23	MW-12	Water	06/21/19 11:52	06/22/19 09:01	
600-187450-24	MW-11	Water	06/21/19 11:58	06/22/19 09:01	
600-187450-25	MW-23	Water	06/21/19 12:15	06/22/19 09:01	
600-187450-26	MW-17	Water	06/21/19 12:25	06/22/19 09:01	
600-187450-27	MW-24	Water	06/21/19 12:34	06/22/19 09:01	
600-187450-28	EB-1	Water	06/21/19 12:48	06/22/19 09:01	
600-187450-29	MW-18	Water	06/21/19 12:06	06/22/19 09:01	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-16

Lab Sample ID: 600-187450-1

Date Collected: 06/21/19 09:22

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	386		0.400	0.0534	mg/L			07/01/19 19:01	50

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1480		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-25

Lab Sample ID: 600-187450-2

Date Collected: 06/21/19 09:29

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2140		0.400	0.0534	mg/L			07/01/19 19:21	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6760		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-15

Lab Sample ID: 600-187450-3

Date Collected: 06/21/19 09:34

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	958		0.400	0.0534	mg/L			07/01/19 20:21	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2920		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-6

Lab Sample ID: 600-187450-4

Date Collected: 06/21/19 09:41

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	910		0.400	0.0534	mg/L			07/01/19 20:41	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2870		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-8

Lab Sample ID: 600-187450-5

Date Collected: 06/21/19 09:50

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200		0.400	0.0534	mg/L			07/01/19 21:01	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6810		10.0	10.0	mg/L			06/28/19 12:31	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-7

Lab Sample ID: 600-187450-6

Date Collected: 06/21/19 10:02

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	151		0.400	0.0534	mg/L			07/01/19 22:01	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	782		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-3

Lab Sample ID: 600-187450-7

Date Collected: 06/21/19 10:16

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	252		0.400	0.0534	mg/L			07/01/19 22:21	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1080		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-2

Lab Sample ID: 600-187450-8

Date Collected: 06/21/19 10:23

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	281		0.400	0.0534	mg/L			07/01/19 22:41	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1210		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-4

Lab Sample ID: 600-187450-9

Date Collected: 06/21/19 10:30

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1860		0.400	0.0534	mg/L			07/01/19 23:01	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4370		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: RW-1

Lab Sample ID: 600-187450-10

Date Collected: 06/21/19 10:38

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7870		0.400	0.0534	mg/L			07/01/19 23:21	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15400		10.0	10.0	mg/L			06/28/19 12:31	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: DUP-1

Lab Sample ID: 600-187450-11

Date Collected: 06/21/19 00:00

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	905		0.400	0.0534	mg/L			07/01/19 23:41	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3060		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: DUP-2

Lab Sample ID: 600-187450-12

Date Collected: 06/21/19 00:00

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2350		0.400	0.0534	mg/L			07/02/19 00:01	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	207		20.0	20.0	mg/L			06/26/19 18:59	1
Bicarbonate Alkalinity as CaCO3	207		20.0	20.0	mg/L			06/26/19 18:59	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:59	1
Total Dissolved Solids (TDS)	4370		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-1

Lab Sample ID: 600-187450-13

Date Collected: 06/21/19 10:43

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11300		0.400	0.0534	mg/L			07/02/19 01:01	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	175		20.0	20.0	mg/L			06/26/19 20:14	1
Bicarbonate Alkalinity as CaCO3	175		20.0	20.0	mg/L			06/26/19 20:14	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 20:14	1
Total Dissolved Solids (TDS)	24400		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-5

Lab Sample ID: 600-187450-14

Date Collected: 06/21/19 10:50

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5090		0.400	0.0534	mg/L			07/02/19 02:01	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	222		20.0	20.0	mg/L			06/26/19 21:03	1
Bicarbonate Alkalinity as CaCO3	222		20.0	20.0	mg/L			06/26/19 21:03	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 21:03	1
Total Dissolved Solids (TDS)	12000		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-9

Lab Sample ID: 600-187450-15

Date Collected: 06/21/19 11:00

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5420		0.400	0.0534	mg/L			07/02/19 03:01	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	264		20.0	20.0	mg/L			06/24/19 18:04	1
Bicarbonate Alkalinity as CaCO3	264		20.0	20.0	mg/L			06/24/19 18:04	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/24/19 18:04	1
Total Dissolved Solids (TDS)	11700		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-10

Lab Sample ID: 600-187450-16

Date Collected: 06/21/19 11:04

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2420		0.400	0.0534	mg/L			07/02/19 03:21	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	295		20.0	20.0	mg/L			06/26/19 21:12	1
Bicarbonate Alkalinity as CaCO3	295		20.0	20.0	mg/L			06/26/19 21:12	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 21:12	1
Total Dissolved Solids (TDS)	5350		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-14

Lab Sample ID: 600-187450-17

Date Collected: 06/21/19 11:10

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	908		0.400	0.0534	mg/L			07/02/19 03:41	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	306		20.0	20.0	mg/L			06/26/19 19:06	1
Bicarbonate Alkalinity as CaCO3	306		20.0	20.0	mg/L			06/26/19 19:06	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:06	1
Total Dissolved Solids (TDS)	2500		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-13

Lab Sample ID: 600-187450-18

Date Collected: 06/21/19 11:18

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10700		0.400	0.0534	mg/L			07/02/19 04:01	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	191		20.0	20.0	mg/L			06/26/19 19:13	1
Bicarbonate Alkalinity as CaCO3	191		20.0	20.0	mg/L			06/26/19 19:13	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:13	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-13

Lab Sample ID: 600-187450-18

Date Collected: 06/21/19 11:18

Matrix: Water

Date Received: 06/22/19 09:01

General Chemistry (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	24400		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-21

Lab Sample ID: 600-187450-19

Date Collected: 06/21/19 11:23

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10400		0.400	0.0534	mg/L			07/02/19 04:21	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	195		20.0	20.0	mg/L			06/26/19 20:42	1
Bicarbonate Alkalinity as CaCO3	195		20.0	20.0	mg/L			06/26/19 20:42	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 20:42	1
Total Dissolved Solids (TDS)	25100		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-20

Lab Sample ID: 600-187450-20

Date Collected: 06/21/19 11:29

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	197		0.400	0.0534	mg/L			07/02/19 04:41	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	261		20.0	20.0	mg/L			06/26/19 19:29	1
Bicarbonate Alkalinity as CaCO3	261		20.0	20.0	mg/L			06/26/19 19:29	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:29	1
Total Dissolved Solids (TDS)	1330		10.0	10.0	mg/L			06/28/19 12:31	1

Client Sample ID: MW-19

Lab Sample ID: 600-187450-21

Date Collected: 06/21/19 11:32

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	78.1		0.400	0.0534	mg/L			07/02/19 05:01	5

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	562		20.0	20.0	mg/L			06/26/19 19:40	1
Bicarbonate Alkalinity as CaCO3	562		20.0	20.0	mg/L			06/26/19 19:40	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:40	1
Total Dissolved Solids (TDS)	516		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-22

Lab Sample ID: 600-187450-22

Date Collected: 06/21/19 11:43

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	80.9		0.400	0.0534	mg/L			07/02/19 13:11	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	210		20.0	20.0	mg/L			06/26/19 19:47	1
Bicarbonate Alkalinity as CaCO3	210		20.0	20.0	mg/L			06/26/19 19:47	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:47	1
Total Dissolved Solids (TDS)	521		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: MW-12

Lab Sample ID: 600-187450-23

Date Collected: 06/21/19 11:52

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1470		0.400	0.0534	mg/L			07/02/19 06:21	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	279		20.0	20.0	mg/L			06/24/19 18:12	1
Bicarbonate Alkalinity as CaCO3	279		20.0	20.0	mg/L			06/24/19 18:12	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/24/19 18:12	1
Total Dissolved Solids (TDS)	4480		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: MW-11

Lab Sample ID: 600-187450-24

Date Collected: 06/21/19 11:58

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5020		0.400	0.0534	mg/L			07/02/19 07:21	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	178		20.0	20.0	mg/L			06/26/19 19:53	1
Bicarbonate Alkalinity as CaCO3	178		20.0	20.0	mg/L			06/26/19 19:53	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 19:53	1
Total Dissolved Solids (TDS)	14200		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: MW-23

Lab Sample ID: 600-187450-25

Date Collected: 06/21/19 12:15

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6770		0.400	0.0534	mg/L			07/02/19 07:41	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	264		20.0	20.0	mg/L			06/26/19 20:56	1
Bicarbonate Alkalinity as CaCO3	264		20.0	20.0	mg/L			06/26/19 20:56	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 20:56	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-23

Lab Sample ID: 600-187450-25

Date Collected: 06/21/19 12:15

Matrix: Water

Date Received: 06/22/19 09:01

General Chemistry (Continued)

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	15100		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: MW-17

Lab Sample ID: 600-187450-26

Date Collected: 06/21/19 12:25

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10300		0.400	0.0534	mg/L			07/02/19 08:01	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	187		20.0	20.0	mg/L			06/26/19 20:35	1
Bicarbonate Alkalinity as CaCO3	187		20.0	20.0	mg/L			06/26/19 20:35	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 20:35	1
Total Dissolved Solids (TDS)	23200		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: MW-24

Lab Sample ID: 600-187450-27

Date Collected: 06/21/19 12:34

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1590		0.400	0.0534	mg/L			07/02/19 08:21	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	192		20.0	20.0	mg/L			06/26/19 18:51	1
Bicarbonate Alkalinity as CaCO3	192		20.0	20.0	mg/L			06/26/19 18:51	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:51	1
Total Dissolved Solids (TDS)	4760		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample ID: EB-1

Lab Sample ID: 600-187450-28

Date Collected: 06/21/19 12:48

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			07/02/19 08:41	1

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			06/26/19 18:28	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:28	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:28	1
Total Dissolved Solids (TDS)	33.0		10.0	10.0	mg/L			06/28/19 12:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-18

Lab Sample ID: 600-187450-29

Date Collected: 06/21/19 12:06

Matrix: Water

Date Received: 06/22/19 09:01

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	988		0.400	0.0534	mg/L			07/02/19 09:01	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	211		20.0	20.0	mg/L			06/26/19 20:49	1
Bicarbonate Alkalinity as CaCO3	211		20.0	20.0	mg/L			06/26/19 20:49	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 20:49	1
Total Dissolved Solids (TDS)	3170		10.0	10.0	mg/L			06/28/19 12:20	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-268404/35

Matrix: Water

Analysis Batch: 268404

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			07/02/19 00:21	1

Lab Sample ID: MB 600-268404/4

Matrix: Water

Analysis Batch: 268404

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			07/01/19 14:01	1

Lab Sample ID: LCS 600-268404/36

Matrix: Water

Analysis Batch: 268404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.22		mg/L		96	90 - 110

Lab Sample ID: LCS 600-268404/5

Matrix: Water

Analysis Batch: 268404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.30		mg/L		96	90 - 110

Lab Sample ID: 600-187450-2 MS

Matrix: Water

Analysis Batch: 268404

Client Sample ID: MW-25

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2140		1000	2877	N1	mg/L		74	80 - 120

Lab Sample ID: 600-187450-2 MSD

Matrix: Water

Analysis Batch: 268404

Client Sample ID: MW-25

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2140		1000	2859	N1	mg/L		72	80 - 120	1	20

Lab Sample ID: 600-187450-14 MS

Matrix: Water

Analysis Batch: 268404

Client Sample ID: MW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5090		5000	9184		mg/L		82	80 - 120

Lab Sample ID: 600-187450-23 MS

Matrix: Water

Analysis Batch: 268404

Client Sample ID: MW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1470		1000	2203	N1	mg/L		74	80 - 120

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 600-187450-23 MSD

Matrix: Water

Analysis Batch: 268404

Client Sample ID: MW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1470		1000	2167	N1	mg/L		70	80 - 120	2	20

Lab Sample ID: MB 600-268532/4

Matrix: Water

Analysis Batch: 268532

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			07/02/19 12:31	1

Lab Sample ID: LCS 600-268532/5

Matrix: Water

Analysis Batch: 268532

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.67		mg/L		98	90 - 110

Lab Sample ID: 600-187450-22 MS

Matrix: Water

Analysis Batch: 268532

Client Sample ID: MW-22

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	80.9		100	165.3		mg/L		84	80 - 120

Lab Sample ID: 600-187450-22 MSD

Matrix: Water

Analysis Batch: 268532

Client Sample ID: MW-22

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	80.9		100	164.5		mg/L		84	80 - 120	0	20

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011

Lab Sample ID: MB 600-267937/4

Matrix: Water

Analysis Batch: 267937

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			06/24/19 16:38	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/24/19 16:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/24/19 16:38	1

Lab Sample ID: LCS 600-267937/5

Matrix: Water

Analysis Batch: 267937

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	89.88		mg/L		90	90 - 110

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011 (Continued)

Lab Sample ID: MB 600-268228/4

Matrix: Water

Analysis Batch: 268228

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			06/26/19 18:15	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:15	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			06/26/19 18:15	1

Lab Sample ID: LCS 600-268228/5

Matrix: Water

Analysis Batch: 268228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	93.32		mg/L		93	90 - 110

Lab Sample ID: 600-187450-13 MS

Matrix: Water

Analysis Batch: 268228

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	175		250	183.5	N1	mg/L		3	75 - 125

Lab Sample ID: 600-187450-13 MSD

Matrix: Water

Analysis Batch: 268228

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	175		250	184.6	N1	mg/L		4	75 - 125	1	20

Lab Sample ID: 600-187450-28 MS

Matrix: Water

Analysis Batch: 268228

Client Sample ID: EB-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	20.0	U	250	242.2		mg/L		97	75 - 125

Lab Sample ID: 600-187450-28 MSD

Matrix: Water

Analysis Batch: 268228

Client Sample ID: EB-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	20.0	U	250	241.9		mg/L		97	75 - 125	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-268288/1

Matrix: Water

Analysis Batch: 268288

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids (TDS)	10.0	U	10.0	10.0	mg/L			06/28/19 12:20	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 600-268288/2

Matrix: Water

Analysis Batch: 268288

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids (TDS)	1800	1850		mg/L		103	90 - 110

Lab Sample ID: MB 600-268292/1

Matrix: Water

Analysis Batch: 268292

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L			06/28/19 12:31	1
Total Dissolved Solids (TDS)	10.0	U	10.0	10.0	mg/L			06/28/19 12:31	1

Lab Sample ID: LCS 600-268292/2

Matrix: Water

Analysis Batch: 268292

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1791		mg/L		100	90 - 110
Total Dissolved Solids (TDS)	1800	1791		mg/L		100	90 - 110

Lab Sample ID: 600-187450-1 DU

Matrix: Water

Analysis Batch: 268292

Client Sample ID: MW-16

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1480		1486		mg/L		0.5	10

Lab Sample ID: 600-187450-11 DU

Matrix: Water

Analysis Batch: 268292

Client Sample ID: DUP-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3060		2882		mg/L		6	10
Total Dissolved Solids (TDS)	3060		2882		mg/L		6	10

Default Detection Limits

Client: ARCADIS U.S., Inc.

Job ID: 600-187450-1

Project/Site: Midland - Chevron/ Kegan Boyer

Method: 300.0 - Anions, Ion Chromatography

Analyte	MQL	MDL	Units
Chloride	0.400	0.0534	mg/L

General Chemistry

Analyte	MQL	MDL	Units
Alkalinity	20.0	20.0	mg/L
Bicarbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Carbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Total Dissolved Solids	10.0	10.0	mg/L
Total Dissolved Solids (TDS)	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

HPLC/IC

Analysis Batch: 268404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-1	MW-16	Total/NA	Water	300.0	
600-187450-2	MW-25	Total/NA	Water	300.0	
600-187450-3	MW-15	Total/NA	Water	300.0	
600-187450-4	MW-6	Total/NA	Water	300.0	
600-187450-5	MW-8	Total/NA	Water	300.0	
600-187450-6	MW-7	Total/NA	Water	300.0	
600-187450-7	MW-3	Total/NA	Water	300.0	
600-187450-8	MW-2	Total/NA	Water	300.0	
600-187450-9	MW-4	Total/NA	Water	300.0	
600-187450-10	RW-1	Total/NA	Water	300.0	
600-187450-11	DUP-1	Total/NA	Water	300.0	
600-187450-12	DUP-2	Total/NA	Water	300.0	
600-187450-13	MW-1	Total/NA	Water	300.0	
600-187450-14	MW-5	Total/NA	Water	300.0	
600-187450-15	MW-9	Total/NA	Water	300.0	
600-187450-16	MW-10	Total/NA	Water	300.0	
600-187450-17	MW-14	Total/NA	Water	300.0	
600-187450-18	MW-13	Total/NA	Water	300.0	
600-187450-19	MW-21	Total/NA	Water	300.0	
600-187450-20	MW-20	Total/NA	Water	300.0	
600-187450-21	MW-19	Total/NA	Water	300.0	
600-187450-23	MW-12	Total/NA	Water	300.0	
600-187450-24	MW-11	Total/NA	Water	300.0	
600-187450-25	MW-23	Total/NA	Water	300.0	
600-187450-26	MW-17	Total/NA	Water	300.0	
600-187450-27	MW-24	Total/NA	Water	300.0	
600-187450-28	EB-1	Total/NA	Water	300.0	
600-187450-29	MW-18	Total/NA	Water	300.0	
MB 600-268404/35	Method Blank	Total/NA	Water	300.0	
MB 600-268404/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268404/36	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-268404/5	Lab Control Sample	Total/NA	Water	300.0	
600-187450-2 MS	MW-25	Total/NA	Water	300.0	
600-187450-2 MSD	MW-25	Total/NA	Water	300.0	
600-187450-14 MS	MW-5	Total/NA	Water	300.0	
600-187450-14 MSD	MW-5	Total/NA	Water	300.0	
600-187450-23 MS	MW-12	Total/NA	Water	300.0	
600-187450-23 MSD	MW-12	Total/NA	Water	300.0	

Analysis Batch: 268532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-22	MW-22	Total/NA	Water	300.0	
MB 600-268532/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268532/5	Lab Control Sample	Total/NA	Water	300.0	
600-187450-22 MS	MW-22	Total/NA	Water	300.0	
600-187450-22 MSD	MW-22	Total/NA	Water	300.0	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

General Chemistry

Analysis Batch: 267937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-15	MW-9	Total/NA	Water	2320B-1997	
600-187450-23	MW-12	Total/NA	Water	2320B-1997	
MB 600-267937/4	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-267937/5	Lab Control Sample	Total/NA	Water	2320B-1997	

Analysis Batch: 268228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-12	DUP-2	Total/NA	Water	2320B-1997	
600-187450-13	MW-1	Total/NA	Water	2320B-1997	
600-187450-14	MW-5	Total/NA	Water	2320B-1997	
600-187450-16	MW-10	Total/NA	Water	2320B-1997	
600-187450-17	MW-14	Total/NA	Water	2320B-1997	
600-187450-18	MW-13	Total/NA	Water	2320B-1997	
600-187450-19	MW-21	Total/NA	Water	2320B-1997	
600-187450-20	MW-20	Total/NA	Water	2320B-1997	
600-187450-21	MW-19	Total/NA	Water	2320B-1997	
600-187450-22	MW-22	Total/NA	Water	2320B-1997	
600-187450-24	MW-11	Total/NA	Water	2320B-1997	
600-187450-25	MW-23	Total/NA	Water	2320B-1997	
600-187450-26	MW-17	Total/NA	Water	2320B-1997	
600-187450-27	MW-24	Total/NA	Water	2320B-1997	
600-187450-28	EB-1	Total/NA	Water	2320B-1997	
600-187450-29	MW-18	Total/NA	Water	2320B-1997	
MB 600-268228/4	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-268228/5	Lab Control Sample	Total/NA	Water	2320B-1997	
600-187450-13 MS	MW-1	Total/NA	Water	2320B-1997	
600-187450-13 MSD	MW-1	Total/NA	Water	2320B-1997	
600-187450-28 MS	EB-1	Total/NA	Water	2320B-1997	
600-187450-28 MSD	EB-1	Total/NA	Water	2320B-1997	

Analysis Batch: 268288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-21	MW-19	Total/NA	Water	SM 2540C	
600-187450-22	MW-22	Total/NA	Water	SM 2540C	
600-187450-23	MW-12	Total/NA	Water	SM 2540C	
600-187450-24	MW-11	Total/NA	Water	SM 2540C	
600-187450-25	MW-23	Total/NA	Water	SM 2540C	
600-187450-26	MW-17	Total/NA	Water	SM 2540C	
600-187450-27	MW-24	Total/NA	Water	SM 2540C	
600-187450-28	EB-1	Total/NA	Water	SM 2540C	
600-187450-29	MW-18	Total/NA	Water	SM 2540C	
MB 600-268288/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268288/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 268292

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-1	MW-16	Total/NA	Water	SM 2540C	
600-187450-2	MW-25	Total/NA	Water	SM 2540C	
600-187450-3	MW-15	Total/NA	Water	SM 2540C	
600-187450-4	MW-6	Total/NA	Water	SM 2540C	
600-187450-5	MW-8	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Houston

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

General Chemistry (Continued)

Analysis Batch: 268292 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187450-6	MW-7	Total/NA	Water	SM 2540C	
600-187450-7	MW-3	Total/NA	Water	SM 2540C	
600-187450-8	MW-2	Total/NA	Water	SM 2540C	
600-187450-9	MW-4	Total/NA	Water	SM 2540C	
600-187450-10	RW-1	Total/NA	Water	SM 2540C	
600-187450-11	DUP-1	Total/NA	Water	SM 2540C	
600-187450-12	DUP-2	Total/NA	Water	SM 2540C	
600-187450-13	MW-1	Total/NA	Water	SM 2540C	
600-187450-14	MW-5	Total/NA	Water	SM 2540C	
600-187450-15	MW-9	Total/NA	Water	SM 2540C	
600-187450-16	MW-10	Total/NA	Water	SM 2540C	
600-187450-17	MW-14	Total/NA	Water	SM 2540C	
600-187450-18	MW-13	Total/NA	Water	SM 2540C	
600-187450-19	MW-21	Total/NA	Water	SM 2540C	
600-187450-20	MW-20	Total/NA	Water	SM 2540C	
MB 600-268292/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268292/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-187450-1 DU	MW-16	Total/NA	Water	SM 2540C	
600-187450-11 DU	DUP-1	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-16

Date Collected: 06/21/19 09:22

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			268404	07/01/19 19:01	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-25

Date Collected: 06/21/19 09:29

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 19:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-15

Date Collected: 06/21/19 09:34

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 20:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-6

Date Collected: 06/21/19 09:41

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 20:41	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-8

Date Collected: 06/21/19 09:50

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 21:01	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-7

Date Collected: 06/21/19 10:02

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			268404	07/01/19 22:01	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Eurofins TestAmerica, Houston

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-3

Date Collected: 06/21/19 10:16

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			268404	07/01/19 22:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-2

Date Collected: 06/21/19 10:23

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			268404	07/01/19 22:41	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-4

Date Collected: 06/21/19 10:30

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 23:01	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: RW-1

Date Collected: 06/21/19 10:38

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/01/19 23:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: DUP-1

Date Collected: 06/21/19 00:00

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/01/19 23:41	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: DUP-2

Date Collected: 06/21/19 00:00

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 00:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 18:59	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Eurofins TestAmerica, Houston

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-1

Date Collected: 06/21/19 10:43

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 01:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 20:14	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-5

Date Collected: 06/21/19 10:50

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 02:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 21:03	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-9

Date Collected: 06/21/19 11:00

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 03:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	267937	06/24/19 18:04	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-10

Date Collected: 06/21/19 11:04

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 03:21	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 21:12	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-14

Date Collected: 06/21/19 11:10

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 03:41	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:06	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-13

Date Collected: 06/21/19 11:18

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 04:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:13	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-21

Date Collected: 06/21/19 11:23

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 04:21	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 20:42	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-20

Date Collected: 06/21/19 11:29

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			268404	07/02/19 04:41	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:29	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268292	06/28/19 12:31	DTN	TAL HOU

Client Sample ID: MW-19

Date Collected: 06/21/19 11:32

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5			268404	07/02/19 05:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:40	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-22

Date Collected: 06/21/19 11:43

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-22

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			268532	07/02/19 13:11	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:47	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: MW-12

Date Collected: 06/21/19 11:52

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-23

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 06:21	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	267937	06/24/19 18:12	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-11

Date Collected: 06/21/19 11:58

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200			268404	07/02/19 07:21	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 19:53	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-23

Date Collected: 06/21/19 12:15

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 07:41	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 20:56	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-17

Date Collected: 06/21/19 12:25

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-26

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			268404	07/02/19 08:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 20:35	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-24

Date Collected: 06/21/19 12:34

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-27

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 08:21	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 18:51	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron/ Kegan Boyer

Job ID: 600-187450-1

Client Sample ID: EB-1

Date Collected: 06/21/19 12:48

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-28

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1			268404	07/02/19 08:41	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 18:28	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Client Sample ID: MW-18

Date Collected: 06/21/19 12:06

Date Received: 06/22/19 09:01

Lab Sample ID: 600-187450-29

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			268404	07/02/19 09:01	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	268228	06/26/19 20:49	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268288	06/28/19 12:20	DTN	TAL HOU

Laboratory References:

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: 600-187450-1

Project/Site: Midland - Chevron/ Kegan Boyer

Laboratory: Eurofins TestAmerica, Houston

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Oklahoma	State Program	6	2018-052	08-31-19
Texas	NELAP	6	T104704223-18-23	10-31-19
USDA	Federal		P330-18-00130	04-30-21

Chain of Custody Record

Midland
#264

Client Information		Lab PM: Kudchadkar, Sachin G		Carrier Tracking No(s): 600-68943-18804.1	
Company: ARCADIS U.S., Inc.		E-Mail: sachin.kudchadkar@testamericainc.com		Page 3 of 3	
Address: 1004 North Big Spring Suite 121		City: Midland		State, Zip: TX, 79701	
Phone: 916-786-5382(Tel)		Email: brett.krehbiel@arcadis.com		Project Name: Midland - Chevron	
Project #: 60003622		SSOW#: Mark Owen		Due Date Requested: TAT Requested (days): 5	
Purchase Order not required		WO #:		PO #:	
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=oil, B=BT, T=tissue, A=air)
MW-16	06/21/19	0922	G	Water	Field Filtered Sample (Yes or No) ☒ N
MW-25	06/21/19	0929	G	Water	Perform MS/MSD (Yes or No) ☒ N
MW-15	06/21/19	0934	G	Water	2540C Calcd. 300_ORGFM.280
MW-6	06/21/19	0941	G	Water	
MW-8	06/21/19	0950	G	Water	
MW-7	06/21/19	1002	G	Water	
MW-3	06/21/19	1016	G	Water	
MW-2	06/21/19	1023	G	Water	
MW-4	06/21/19	1030	G	Water	
200-1	06/21/19	1037	G	Water	
DUP-1	06/21/19		G	Water	
Possible Hazard Identification (Non-Hazard, Flammable, Skin Irritant, Poison B, Unknown, Radiological)					
Deliverable Requested: I, II, III, IV, Other (specify)					
Empty Kit Relinquished by:		Date:		Time:	
Relinquished by: <i>[Signature]</i>		Date/Time: 06/21/19 / 1450		Company: ARCADIS	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seal No.:		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	
Custody Seals Intact: ☒ Yes ☐ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	



600-187450 Chain of Custody

Special Instructions/Note:

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
Other:

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)

Midland
#264

Chain of Custody Record

Client Information		Sampler: BL 13		Lab PM: Kudchadkar, Sachin G		Carrier Tracking No(s):		COC No: 600-68942-18803.1	
Client Contact:		Phone:		E-Mail:		Page 3 of 3		Job #:	
Company:		Address:		City:		State, Zip:		Country:	
ARCADIS U.S., Inc.		1004 North Big Spring Suite 121		Midland		TX, 79701			
Phone:		916-786-5382(Tel)		Email:		brett.krehbiel@arcadis.com			
Project Name:		Midland - Chevron		Project #:		60003622			
Site:		At-6 Drains / Krogen Pipe		SSOW#:					
Due Date Requested:		TAT Requested (days):		PO #:		Purchase Order not required			
WO #:		Project #:		SSOW#:					
Sample Identification		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=oil, A=air)	
DOP-2		08/21/19		1043		G		Water	
MD-1		08/21/19		1043		G		Water	
MD-5		08/21/19		1050		G		Water	
MD-9		08/21/19		1100		G		Water	
MD-10		08/21/19		1104		G		Water	
MD-14		08/21/19		1110		G		Water	
MD-13		08/21/19		1118		G		Water	
MD-21		08/21/19		1123		G		Water	
MD-20		08/21/19		1129		G		Water	
MD-19		08/21/19		1132		G		Water	
MD-22		08/21/19		1143		G		Water	
Possible Hazard Identification		Non-Hazard		Flammable		Skin Irritant		Poison B	
Deliverable Requested: I, II, III, IV, Other (specify)		Unknown		Radiological					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: David S. Longwell		Date/Time: 08/21/19 1450		Company: ARCADIS		Relinquished by: SP		Date/Time: 08/21/19 1450	
Relinquished by:		Date/Time:		Company:		Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Relinquished by:		Date/Time:	
Custody Seal No.:		Custody Seal No.:		Custody Seal No.:		Custody Seal No.:		Custody Seal No.:	
Custody Seal Intact: ☐ Yes ☐ No		Custody Seal Intact: ☐ Yes ☐ No		Custody Seal Intact: ☐ Yes ☐ No		Custody Seal Intact: ☐ Yes ☐ No		Custody Seal Intact: ☐ Yes ☐ No	
Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:	

Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

Midland
#264

[illegible]

Sample Receipt Ct

19 JUN 22 9:01

JOB NUMBER:

Date/Time Received:

CLIENT:

UNPACKED BY:

CARRIER/DRIVER:

Custody Seal Present:

☒ YES☐ NO

Number of Coolers Received:

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
P10	Y / N	Y / N	8.4	676	-2	8.2
BW	Y / N	Y / N	8.9			8.7
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	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☐ YESBase samples are >pH 12: ☐ YES ☐ NO

Acid preserved are <pH 2:

☐ YES ☐ NO

pH paper Lot # _____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

YES NO

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?

COMMENTS:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 600-187450-1

Login Number: 187450

List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Crafton, Tommie S

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	0.2, 0.7
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.	False	Received extra samples not listed on COC.
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 $<6\text{mm}$ (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.

September 2019 Event



ANALYTICAL REPORT

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

Laboratory Job ID: 600-191854-1

Client Project/Site: Midland - Chevron 9-11-19

For:

ARCADIS U.S., Inc.
1004 North Big Spring
Suite 121
Midland, Texas 79701

Attn: Mr. Russell Grant



Authorized for release by:

9/19/2019 3:10:34 PM

Jasmine Turner, Project Management Assistant I
(713)690-4444

jasmine.turner@testamericainc.com

Designee for

Sachin Kudchadkar, Senior Project Manager
(713)690-4444

sachin.kudchadkar@testamericainc.com

LINKS

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Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
TRRP Checklists & DCSs	3
Case Narrative	10
Method Summary	11
Sample Summary	12
Client Sample Results	13
Definitions/Glossary	16
QC Sample Results	17
Default Detection Limits	20
QC Association Summary	21
Lab Chronicle	23
Certification Summary	25
Chain of Custody	26
Receipt Checklists	28



Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Eurofins TestAmerica, Houston job number 600-191854-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☐ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☒ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Jasmine Turner, for Sachin Kudchadkar

Name (printed)



Signature

9/19/2019

Date

Senior Project Manager

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/19/2019
Project Name:	Midland - Chevron 9-11-19	Laboratory Job Number:	600-191854-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				R05D
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?			X		
		Were MS/MSD analyzed at the appropriate frequency?			X		
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
		Were MS/MSD RPDs within laboratory QC limits?			X		
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/19/2019
Project Name:	Midland - Chevron 9-11-19	Laboratory Job Number:	600-191854-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/19/2019
Project Name:	Midland - Chevron 9-11-19	Laboratory Job Number:	600-191854-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

ER # ¹	Description
R05D	Method 300.0: The method blank for analytical batch 600-274705 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.
- Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. - O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); - NA = Not applicable; - NR = Not reviewed; - ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).	

Matrix: Water
Method: EPA 300 / SW-846 9056
Date Analyzed: 5/16/2019
Job #: 600-183719
TALS Batch: 265145
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Bromide	CHWC11	0.101	0.200	0.385	0.4
Chloride	CHWC11	0.053	0.200	0.126	0.4
Fluoride	CHWC11	0.060	0.200	0.139	0.2
Nitrate as N	CHWC11	0.025	0.100	0.236	0.2
Nitrite as N	CHWC11	0.030	0.400	0.016	0.2
Sulfate	CHWC11	0.096	0.400	0.473	0.5

Matrix: Water
Method: SM 2540C
Date Analyzed: 5/30/2019
Job #: 600-183719
TALS Batch: 266184
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Total Dissolved Solids	MDLV Fail	MDLV Fail	MDLV Fail	MDLV Fail	MDLV Fail

Matrix: Water
Method: SM 2320B
Date Analyzed: 4/23/2019
Job #: 600-183719
TALS Batch: 263603
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Alkalinity	WC23	20.000	4.800	5.040	20

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Job ID: 600-191854-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-191854-1

Comments

No additional comments.

Receipt

The samples were received on 9/12/2019 10:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

All applicable analytical narratives can be found in the TRRP Checklist section of this report.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL HOU
2320B-1997	Alkalinity, Total - SM Online, 2011	SM-Online	TAL HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL HOU

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM-Online = Standard Methods Online

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-191854-1	MW-17	Water	09/11/19 12:24	09/12/19 10:05	
600-191854-2	MW-22	Water	09/11/19 12:38	09/12/19 10:05	
600-191854-3	MW-19	Water	09/11/19 12:51	09/12/19 10:05	
600-191854-4	MW-20	Water	09/11/19 12:58	09/12/19 10:05	
600-191854-5	MW-13	Water	09/11/19 13:09	09/12/19 10:05	
600-191854-6	MW-21	Water	09/11/19 13:18	09/12/19 10:05	
600-191854-7	MW-23	Water	09/11/19 13:31	09/12/19 10:05	
600-191854-8	MW-18	Water	09/11/19 13:42	09/12/19 10:05	
600-191854-9	MW-11	Water	09/11/19 13:51	09/12/19 10:05	
600-191854-10	DUP-1	Water	09/11/19 00:00	09/12/19 10:05	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Client Sample ID: MW-17

Date Collected: 09/11/19 12:24

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9030	b	0.400	0.0534	mg/L			09/14/19 02:34	500
Sulfate	544		0.500	0.0957	mg/L			09/14/19 02:34	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	186		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	186		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	21200		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: MW-22

Date Collected: 09/11/19 12:38

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	79.7		0.400	0.0534	mg/L			09/16/19 22:19	10
Sulfate	44.5		0.500	0.0957	mg/L			09/14/19 02:54	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	196		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	196		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	444		10.0	10.0	mg/L			09/17/19 14:07	1

Client Sample ID: MW-19

Date Collected: 09/11/19 12:51

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	82.1		0.400	0.0534	mg/L			09/16/19 22:39	10
Sulfate	97.9		0.500	0.0957	mg/L			09/16/19 22:39	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	382		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	382		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	599		10.0	10.0	mg/L			09/17/19 14:07	1

Client Sample ID: MW-20

Date Collected: 09/11/19 12:58

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	401	b	0.400	0.0534	mg/L			09/14/19 05:34	20
Sulfate	378		0.500	0.0957	mg/L			09/14/19 05:34	20

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Client Sample ID: MW-20

Date Collected: 09/11/19 12:58

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	382		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	382		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	2500		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: MW-13

Date Collected: 09/11/19 13:09

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10400	b	0.400	0.0534	mg/L			09/14/19 05:54	500
Sulfate	849		0.500	0.0957	mg/L			09/14/19 05:54	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	196		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	196		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	26600		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: MW-21

Date Collected: 09/11/19 13:18

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10600	b	0.400	0.0534	mg/L			09/14/19 03:14	500
Sulfate	536		0.500	0.0957	mg/L			09/14/19 03:14	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	223		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	223		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	26900		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: MW-23

Date Collected: 09/11/19 13:31

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5270	b	0.400	0.0534	mg/L			09/14/19 06:14	250
Sulfate	240		0.500	0.0957	mg/L			09/14/19 06:14	250

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	698		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	698		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	12500		10.0	10.0	mg/L			09/16/19 13:50	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Client Sample ID: MW-18

Date Collected: 09/11/19 13:42

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1220	b	0.400	0.0534	mg/L			09/14/19 03:34	100
Sulfate	134		0.500	0.0957	mg/L			09/14/19 03:34	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1580		20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	1580		20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Total Dissolved Solids	3540		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: MW-11

Date Collected: 09/11/19 13:51

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-9

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5050	b	0.400	0.0534	mg/L			09/14/19 03:54	250
Sulfate	218		0.500	0.0957	mg/L			09/14/19 03:54	250

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	158		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	158		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	15000		10.0	10.0	mg/L			09/16/19 13:50	1

Client Sample ID: DUP-1

Date Collected: 09/11/19 00:00

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-10

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5030	b	0.400	0.0534	mg/L			09/14/19 04:54	250
Sulfate	215		0.500	0.0957	mg/L			09/14/19 04:54	250

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	168		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	168		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	14600		10.0	10.0	mg/L			09/16/19 13:50	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
b	The compound was found in the blank and sample
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-274705/35

Matrix: Water

Analysis Batch: 274705

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1902	J	0.400	0.0534	mg/L			09/13/19 23:14	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/13/19 23:14	1

Lab Sample ID: LCS 600-274705/36

Matrix: Water

Analysis Batch: 274705

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.80		mg/L		99	90 - 110
Sulfate	20.0	19.77		mg/L		99	90 - 110

Lab Sample ID: MB 600-274863/4

Matrix: Water

Analysis Batch: 274863

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			09/16/19 13:19	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/16/19 13:19	1

Lab Sample ID: LCS 600-274863/5

Matrix: Water

Analysis Batch: 274863

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.65		mg/L		98	90 - 110
Sulfate	20.0	19.86		mg/L		99	90 - 110

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011

Lab Sample ID: MB 600-274896/1

Matrix: Water

Analysis Batch: 274896

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/16/19 14:38	1

Lab Sample ID: LCS 600-274896/2

Matrix: Water

Analysis Batch: 274896

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	93.10		mg/L		93	90 - 110

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011 (Continued)

Lab Sample ID: 600-191854-1 DU
Matrix: Water
Analysis Batch: 274896

Client Sample ID: MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity	186		186.2		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	186		186.2		mg/L		0	20
Carbonate Alkalinity as CaCO3	20.0	U	20.0	U	mg/L		NC	20

Lab Sample ID: MB 600-274999/1
Matrix: Water
Analysis Batch: 274999

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

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1

Lab Sample ID: LCS 600-274999/2
Matrix: Water
Analysis Batch: 274999

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Alkalinity	100	93.10		mg/L		93	90 - 110

Lab Sample ID: 600-191854-2 DU
Matrix: Water
Analysis Batch: 274999

Client Sample ID: MW-22
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity	196		195.5		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	196		195.5		mg/L		0	20
Carbonate Alkalinity as CaCO3	20.0	U	20.0	U	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-274884/1
Matrix: Water
Analysis Batch: 274884

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

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L			09/16/19 13:50	1

Lab Sample ID: LCS 600-274884/2
Matrix: Water
Analysis Batch: 274884

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1800	1844		mg/L		102	90 - 110

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 600-275014/1
Matrix: Water
Analysis Batch: 275014

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

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L	-		09/17/19 14:07	1

Lab Sample ID: LCS 600-275014/2
Matrix: Water
Analysis Batch: 275014

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1791		mg/L	-	100	90 - 110

Default Detection Limits

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Method: 300.0 - Anions, Ion Chromatography

Analyte	MQL	MDL	Units
Chloride	0.400	0.0534	mg/L
Sulfate	0.500	0.0957	mg/L

General Chemistry

Analyte	MQL	MDL	Units
Alkalinity	20.0	20.0	mg/L
Bicarbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Carbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

HPLC/IC

Analysis Batch: 274705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-1	MW-17	Total/NA	Water	300.0	
600-191854-2	MW-22	Total/NA	Water	300.0	
600-191854-4	MW-20	Total/NA	Water	300.0	
600-191854-5	MW-13	Total/NA	Water	300.0	
600-191854-6	MW-21	Total/NA	Water	300.0	
600-191854-7	MW-23	Total/NA	Water	300.0	
600-191854-8	MW-18	Total/NA	Water	300.0	
600-191854-9	MW-11	Total/NA	Water	300.0	
600-191854-10	DUP-1	Total/NA	Water	300.0	
MB 600-274705/35	Method Blank	Total/NA	Water	300.0	
LCS 600-274705/36	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 274863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-2	MW-22	Total/NA	Water	300.0	
600-191854-3	MW-19	Total/NA	Water	300.0	
MB 600-274863/4	Method Blank	Total/NA	Water	300.0	
LCS 600-274863/5	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 274884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-1	MW-17	Total/NA	Water	SM 2540C	
600-191854-4	MW-20	Total/NA	Water	SM 2540C	
600-191854-5	MW-13	Total/NA	Water	SM 2540C	
600-191854-6	MW-21	Total/NA	Water	SM 2540C	
600-191854-7	MW-23	Total/NA	Water	SM 2540C	
600-191854-8	MW-18	Total/NA	Water	SM 2540C	
600-191854-9	MW-11	Total/NA	Water	SM 2540C	
600-191854-10	DUP-1	Total/NA	Water	SM 2540C	
MB 600-274884/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-274884/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 274896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-1	MW-17	Total/NA	Water	2320B-1997	
600-191854-4	MW-20	Total/NA	Water	2320B-1997	
600-191854-5	MW-13	Total/NA	Water	2320B-1997	
600-191854-6	MW-21	Total/NA	Water	2320B-1997	
600-191854-7	MW-23	Total/NA	Water	2320B-1997	
600-191854-8	MW-18	Total/NA	Water	2320B-1997	
MB 600-274896/1	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-274896/2	Lab Control Sample	Total/NA	Water	2320B-1997	
600-191854-1 DU	MW-17	Total/NA	Water	2320B-1997	

Analysis Batch: 274999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-2	MW-22	Total/NA	Water	2320B-1997	
600-191854-3	MW-19	Total/NA	Water	2320B-1997	
600-191854-9	MW-11	Total/NA	Water	2320B-1997	

Eurofins TestAmerica, Houston

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

General Chemistry (Continued)

Analysis Batch: 274999 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-10	DUP-1	Total/NA	Water	2320B-1997	
MB 600-274999/1	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-274999/2	Lab Control Sample	Total/NA	Water	2320B-1997	
600-191854-2 DU	MW-22	Total/NA	Water	2320B-1997	

Analysis Batch: 275014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191854-2	MW-22	Total/NA	Water	SM 2540C	
600-191854-3	MW-19	Total/NA	Water	SM 2540C	
MB 600-275014/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-275014/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Client Sample ID: MW-17

Date Collected: 09/11/19 12:24

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			274705	09/14/19 02:34	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: MW-22

Date Collected: 09/11/19 12:38

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2			274705	09/14/19 02:54	SKR	TAL HOU
Total/NA	Analysis	300.0		10			274863	09/16/19 22:19	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	275014	09/17/19 14:07	TNL	TAL HOU

Client Sample ID: MW-19

Date Collected: 09/11/19 12:51

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			274863	09/16/19 22:39	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	275014	09/17/19 14:07	TNL	TAL HOU

Client Sample ID: MW-20

Date Collected: 09/11/19 12:58

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			274705	09/14/19 05:34	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: MW-13

Date Collected: 09/11/19 13:09

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			274705	09/14/19 05:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

Client Sample ID: MW-21

Date Collected: 09/11/19 13:18

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			274705	09/14/19 03:14	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: MW-23

Date Collected: 09/11/19 13:31

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			274705	09/14/19 06:14	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: MW-18

Date Collected: 09/11/19 13:42

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			274705	09/14/19 03:34	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274896	09/16/19 14:38	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: MW-11

Date Collected: 09/11/19 13:51

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			274705	09/14/19 03:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Client Sample ID: DUP-1

Date Collected: 09/11/19 00:00

Date Received: 09/12/19 10:05

Lab Sample ID: 600-191854-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			274705	09/14/19 04:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	274884	09/16/19 13:50	TNL	TAL HOU

Laboratory References:

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

Eurofins TestAmerica, Houston

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron 9-11-19

Job ID: 600-191854-1

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
Arkansas DEQ	State Program	19-040-0	08-04-20
Louisiana	NELAP	01967	06-30-20
Louisiana	NELAP	01967	06-30-20
Oklahoma	State	2019-073	09-01-20
Oklahoma	State Program	2018-052	08-31-20
Texas	NELAP	T104704223-18-23	10-31-19
Texas	NELAP	T104704223-18-23	10-31-19
USDA	Federal	P330-18-00130	04-30-21
Utah	NELAP	TX000832019-5	07-31-20
Utah	NELAP	TX000832019-5	07-31-20

Chain of Custody Record

191854

Eurofins
Environment Testing
TestAmerica

Client Information Client Contact: Russell Grant Company: ARCADIS U.S., Inc. Address: 1004 North Big Spring Suite 121 City: Midland State: TX, Zip: 79701 Phone: 916-786-5382 (Tel) Email: russell.grant@arcadis.com Project Name: Midland - Chevron Site: Azel Owen		Lab PM: Kutchadkar, Sachin G E-Mail: sachin.kutchadkar@testamericainc.com Due Date Requested: TAT TAT Requested (days): Standard 3 TAT PO #: WO #: 3006543 Project #: 60003622 SSOW#:		GOC No: 600-70989-19414 3 Page: Page: Job #:	
Sample Information Sampler: Terry S. Longwell Phone:		Carrier Tracking No(s):		Analysis Requested:	
Sample Identification		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)	
Sample ID MW-17 MW-22 MW-19 MW-20 MW-13 MW-21 MW-23 MW-18 MW-11 DUP-1		Sample Date 8/14/19 8/14/19 8/14/19 8/14/19 8/14/19 8/14/19 8/14/19 8/14/19 8/14/19		Sample Time 1224 1235 1251 1253 1305 1318 1331 1342 1351 ---	
Sample Type (C=Comp, G=grab)		Preservation Code:		Matrix (Water, Solid, Other)	
G G G G G G G G G G		N N N N N N N N N N		Water Water Water Water Water Water Water Water Water Water	
Total Number of Containers		300-301 Plate		300-301 Chloride 2540C-TDS 2320B-Alkalinity	
Special Instructions/Note:		600-191854 Chain of Custody		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 Other:	
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		Special Instructions/OC Requirements:	
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by: Terry S. Longwell		Date/Time: 8/14/19 15:14		Company: ARCADIS	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seals Intact: Yes ☐ No ☐		Cooler Temperature(s) °C and Other Remarks:		Date/Time: 9/12/19 10:05 Company: Jc	

TestAmerica Houston

Lot: 600

191854

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Checklist

19 SEP 12 10:05

JOB NUMBER:

Date/Time Received:

CLIENT:

UNPACKED BY:

CARRIER/DRIVER:

Custody Seal Present:

☐ YES☒ NO

Number of Coolers Received:

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
3104	Y / N	Y / N	0.7	678	+0.1	0.8
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	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

pH paper Lot #

VOA headspace acceptable (5-6mm):

☐ YES☐ NO☒ NA

YES NO

Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?

☒☐

COMMENTS:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 600-191854-1

Login Number: 191854

List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Trenery, Michael J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	0.8
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 $<6\text{mm}$ (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.

ANALYTICAL REPORT

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

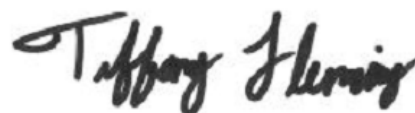
Laboratory Job ID: 600-191901-1

Client Project/Site: Midland - Chevron - 9-12-19

For:

ARCADIS U.S., Inc.
1004 North Big Spring
Suite 121
Midland, Texas 79701

Attn: Mr. Russell Grant



Authorized for release by:

9/30/2019 12:13:09 PM

Tiffany Fleming, Project Management Assistant I
(361)289-2673

tiffany.fleming@testamericainc.com

Designee for

Sachin Kudchadkar, Senior Project Manager
(713)690-4444

sachin.kudchadkar@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
TRRP Checklists & DCSs	3
Case Narrative	10
Method Summary	11
Sample Summary	12
Client Sample Results	13
Definitions/Glossary	19
QC Sample Results	20
Default Detection Limits	24
QC Association Summary	25
Lab Chronicle	27
Certification Summary	31
Chain of Custody	32
Receipt Checklists	35



Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Eurofins TestAmerica, Houston job number 600-191901-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☒ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Tiffany Fleming, for Sachin Kudchadkar

Name (printed)



Signature

9/30/2019

Date

Senior Project Manager

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/30/2019
Project Name:	Midland - Chevron - 9-12-19	Laboratory Job Number:	600-191901-1
Reviewer Name:	Tiffany Fleming, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?	X				
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				R05D
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R07C
		Were MS/MSD RPDs within laboratory QC limits?		X			R07D
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/30/2019
Project Name:	Midland - Chevron - 9-12-19	Laboratory Job Number:	600-191901-1
Reviewer Name:	Tiffany Fleming, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	9/30/2019
Project Name:	Midland - Chevron - 9-12-19	Laboratory Job Number:	600-191901-1
Reviewer Name:	Tiffany Fleming, for Sachin Kudchadkar		

ER # ¹	Description
R05D	Method 300.0: The method blank for analytical batch 600-275207 contained chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.
R07C	Method 300.0: 600-191901-1 MS failed the recovery criteria for the following analyte: Sulfate. Matrix interference is suspected. Method 300.0: 600-191901-8 MS/MSD failed the recovery criteria for the following analyte: Chloride. Matrix interference is suspected.
R07D	Method 300.0: 600-191901-1 MSD failed the RPD criteria for the following analyte: Sulfate.
- Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. - O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); - NA = Not applicable; - NR = Not reviewed; - ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).	

Matrix: Water
Method: EPA 300 / SW-846 9056
Date Analyzed: 5/16/2019
Job #: 600-183719
TALS Batch: 265145
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Bromide	CHWC11	0.101	0.200	0.385	0.4
Chloride	CHWC11	0.053	0.200	0.126	0.4
Fluoride	CHWC11	0.060	0.200	0.139	0.2
Nitrate as N	CHWC11	0.025	0.100	0.236	0.2
Nitrite as N	CHWC11	0.030	0.400	0.016	0.2
Sulfate	CHWC11	0.096	0.400	0.473	0.5

Matrix: Water
Method: SM 2540C
Date Analyzed: 5/30/2019
Job #: 600-183719
TALS Batch: 266184
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Total Dissolved Solids	NOEQUIP	10	9	9.9	10

Matrix: Water
Method: SM 2320B
Date Analyzed: 4/23/2019
Job #: 600-183719
TALS Batch: 263603
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Alkalinity	WC23	20.000	4.800	5.040	20

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Job ID: 600-191901-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-191901-1

Comments

No additional comments.

Receipt

The samples were received on 9/13/2019 8:31 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.0° C.

All applicable analytical narratives can be found in the TRRP Checklist section of the report.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL HOU
2320B-1997	Alkalinity, Total - SM Online, 2011	SM-Online	TAL HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL HOU

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM-Online = Standard Methods Online

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-191901-1	MW-12	Water	09/12/19 07:58	09/13/19 08:31	
600-191901-2	MW-24	Water	09/12/19 08:09	09/13/19 08:31	
600-191901-3	MW-9	Water	09/12/19 08:25	09/13/19 08:31	
600-191901-4	MW-10	Water	09/12/19 08:33	09/13/19 08:31	
600-191901-5	MW-14	Water	09/12/19 08:44	09/13/19 08:31	
600-191901-6	MW-16	Water	09/12/19 08:54	09/13/19 08:31	
600-191901-7	MW-25	Water	09/12/19 09:02	09/13/19 08:31	
600-191901-8	MW-15	Water	09/12/19 09:12	09/13/19 08:31	
600-191901-9	MW-7	Water	09/12/19 09:19	09/13/19 08:31	
600-191901-10	DUP-2	Water	09/12/19 00:00	09/13/19 08:31	
600-191901-11	MW-6	Water	09/12/19 09:39	09/13/19 08:31	
600-191901-12	MW-8	Water	09/12/19 09:49	09/13/19 08:31	
600-191901-13	MW-3	Water	09/12/19 10:05	09/13/19 08:31	
600-191901-14	MW-4	Water	09/12/19 10:16	09/13/19 08:31	
600-191901-15	DUP-3	Water	09/12/19 00:00	09/13/19 08:31	
600-191901-16	RW-1	Water	09/12/19 10:35	09/13/19 08:31	
600-191901-17	MW-1	Water	09/12/19 10:39	09/13/19 08:31	
600-191901-18	MW-5	Water	09/12/19 10:47	09/13/19 08:31	
600-191901-19	MW-2	Water	09/12/19 11:20	09/13/19 08:31	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-12

Date Collected: 09/12/19 07:58

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1550	b	0.400	0.0534	mg/L			09/19/19 17:00	100
Sulfate	207		0.500	0.0957	mg/L			09/19/19 17:00	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	568		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	568		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	5090		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-24

Date Collected: 09/12/19 08:09

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1530	b	0.400	0.0534	mg/L			09/19/19 18:00	100
Sulfate	188		0.500	0.0957	mg/L			09/19/19 18:00	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	223		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	223		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	4380		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-9

Date Collected: 09/12/19 08:25

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4850	b	0.400	0.0534	mg/L			09/19/19 18:20	250
Sulfate	286		0.500	0.0957	mg/L			09/19/19 18:20	250

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	270		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	270		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	10700		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-10

Date Collected: 09/12/19 08:33

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500	b	0.400	0.0534	mg/L			09/19/19 18:40	100
Sulfate	159		0.500	0.0957	mg/L			09/19/19 18:40	100

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-10

Date Collected: 09/12/19 08:33

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	298		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	298		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	5280		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-14

Date Collected: 09/12/19 08:44

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	953	b	0.400	0.0534	mg/L			09/19/19 19:00	100
Sulfate	186		0.500	0.0957	mg/L			09/19/19 19:00	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	307		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	307		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	2320		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-16

Date Collected: 09/12/19 08:54

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	410	b	0.400	0.0534	mg/L			09/19/19 19:20	20
Sulfate	213		0.500	0.0957	mg/L			09/19/19 19:20	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	1020		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	1020		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	1340		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-25

Date Collected: 09/12/19 09:02

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2160	b	0.400	0.0534	mg/L			09/19/19 19:40	100
Sulfate	529		0.500	0.0957	mg/L			09/19/19 19:40	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	261		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	261		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	6340		10.0	10.0	mg/L			09/16/19 10:56	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-15

Date Collected: 09/12/19 09:12

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	990		0.400	0.0534	mg/L			09/20/19 12:33	50
Sulfate	494		0.500	0.0957	mg/L			09/20/19 12:33	50

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	363		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	363		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	2990		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-7

Date Collected: 09/12/19 09:19

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-9

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	89.7		0.400	0.0534	mg/L			09/20/19 13:33	10
Sulfate	50.6		0.500	0.0957	mg/L			09/20/19 13:33	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	214		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	214		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	545		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: DUP-2

Date Collected: 09/12/19 00:00

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-10

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	249		0.400	0.0534	mg/L			09/20/19 13:53	20
Sulfate	98.9		0.500	0.0957	mg/L			09/20/19 13:53	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	196		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	196		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	858		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-6

Date Collected: 09/12/19 09:39

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-11

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	959		0.400	0.0534	mg/L			09/20/19 14:13	50
Sulfate	213		0.500	0.0957	mg/L			09/20/19 14:13	50

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-6

Date Collected: 09/12/19 09:39

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-11

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	168		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	168		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	2630		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-8

Date Collected: 09/12/19 09:49

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-12

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2180		0.400	0.0534	mg/L			09/20/19 14:33	100
Sulfate	563		0.500	0.0957	mg/L			09/20/19 14:33	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	177		20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO ₃	177		20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Total Dissolved Solids	5690		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-3

Date Collected: 09/12/19 10:05

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-13

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	279		0.400	0.0534	mg/L			09/20/19 14:54	20
Sulfate	117		0.500	0.0957	mg/L			09/20/19 14:54	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	317		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO ₃	317		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	934		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-4

Date Collected: 09/12/19 10:16

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-14

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	345		0.400	0.0534	mg/L			09/20/19 15:54	20
Sulfate	67.7		0.500	0.0957	mg/L			09/20/19 15:54	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	205		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO ₃	205		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	920		10.0	10.0	mg/L			09/16/19 10:56	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: DUP-3

Date Collected: 09/12/19 00:00

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-15

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	339		0.400	0.0534	mg/L			09/20/19 16:14	20
Sulfate	62.9		0.500	0.0957	mg/L			09/20/19 16:14	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	214		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO3	214		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	892		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: RW-1

Date Collected: 09/12/19 10:35

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-16

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9460		0.400	0.0534	mg/L			09/20/19 17:34	250
Sulfate	350		0.500	0.0957	mg/L			09/20/19 17:34	250

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	186		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO3	186		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	17800		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-1

Date Collected: 09/12/19 10:39

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-17

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8170		0.400	0.0534	mg/L			09/20/19 17:54	500
Sulfate	363		0.500	0.0957	mg/L			09/20/19 17:54	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	168		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO3	168		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	15700		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-5

Date Collected: 09/12/19 10:47

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-18

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4260		0.400	0.0534	mg/L			09/23/19 13:08	500
Sulfate	288		0.500	0.0957	mg/L			09/20/19 18:14	20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-5

Date Collected: 09/12/19 10:47

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-18

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	279		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO3	279		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	9560		10.0	10.0	mg/L			09/16/19 10:56	1

Client Sample ID: MW-2

Date Collected: 09/12/19 11:20

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-19

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	322		0.400	0.0534	mg/L			09/20/19 16:34	20
Sulfate	183		0.500	0.0957	mg/L			09/20/19 16:34	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	298		20.0	20.0	mg/L			09/18/19 13:58	1
Bicarbonate Alkalinity as CaCO3	298		20.0	20.0	mg/L			09/18/19 13:58	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/18/19 13:58	1
Total Dissolved Solids	1200		10.0	10.0	mg/L			09/16/19 10:56	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
b	The compound was found in the blank and sample
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.
N2	RPD of the MS and MSD exceeds the control limits
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-275207/4

Matrix: Water

Analysis Batch: 275207

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1935	J	0.400	0.0534	mg/L			09/19/19 12:40	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/19/19 12:40	1

Lab Sample ID: LCS 600-275207/5

Matrix: Water

Analysis Batch: 275207

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.45		mg/L		97	90 - 110
Sulfate	20.0	19.41		mg/L		97	90 - 110

Lab Sample ID: 600-191901-1 MS

Matrix: Water

Analysis Batch: 275207

Client Sample ID: MW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1550	b	1000	2395		mg/L		84	80 - 120
Sulfate	207		1000	1798	N1	mg/L		159	80 - 120

Lab Sample ID: 600-191901-1 MSD

Matrix: Water

Analysis Batch: 275207

Client Sample ID: MW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1550	b	1000	2355		mg/L		80	80 - 120	2	20
Sulfate	207		1000	1078	N2	mg/L		87	80 - 120	50	20

Lab Sample ID: MB 600-275290/4

Matrix: Water

Analysis Batch: 275290

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			09/20/19 11:53	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/20/19 11:53	1

Lab Sample ID: LCS 600-275290/5

Matrix: Water

Analysis Batch: 275290

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.82		mg/L		99	90 - 110
Sulfate	20.0	20.01		mg/L		100	90 - 110

Lab Sample ID: 600-191901-1 MS

Matrix: Water

Analysis Batch: 275290

Client Sample ID: MW-12

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride			200	481.3		mg/L			
Sulfate			200	356.3		mg/L			

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 600-191901-8 MS

Matrix: Water

Analysis Batch: 275290

Client Sample ID: MW-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	990		500	1360	N1	mg/L		74	80 - 120
Sulfate	494		500	918.2		mg/L		85	80 - 120

Lab Sample ID: 600-191901-8 MSD

Matrix: Water

Analysis Batch: 275290

Client Sample ID: MW-15

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	990		500	1351	N1	mg/L		72	80 - 120	1	20
Sulfate	494		500	912.3		mg/L		84	80 - 120	1	20

Lab Sample ID: 600-191901-19 MSD

Matrix: Water

Analysis Batch: 275290

Client Sample ID: MW-2

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	322		200	488.8		mg/L					
Sulfate	183		200	362.0		mg/L					

Lab Sample ID: MB 600-275347/4

Matrix: Water

Analysis Batch: 275347

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			09/21/19 14:25	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/21/19 14:25	1

Lab Sample ID: LCS 600-275347/5

Matrix: Water

Analysis Batch: 275347

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.80		mg/L		99	90 - 110
Sulfate	20.0	19.99		mg/L		100	90 - 110

Lab Sample ID: 600-191901-18 MS

Matrix: Water

Analysis Batch: 275347

Client Sample ID: MW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	268		1000	1180		mg/L		91	80 - 120

Lab Sample ID: 600-191901-18 MSD

Matrix: Water

Analysis Batch: 275347

Client Sample ID: MW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	268		1000	1182		mg/L		91	80 - 120	0	20

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 600-275409/4

Matrix: Water

Analysis Batch: 275409

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.0534	U	0.400	0.0534	mg/L			09/23/19 12:28	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			09/23/19 12:28	1

Lab Sample ID: LCS 600-275409/5

Matrix: Water

Analysis Batch: 275409

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.88		mg/L		99	90 - 110
Sulfate	20.0	20.11		mg/L		101	90 - 110

Lab Sample ID: 600-191901-18 MS

Matrix: Water

Analysis Batch: 275409

Client Sample ID: MW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4260		5000	8814		mg/L		91	80 - 120
Sulfate	329		5000	4812		mg/L		90	80 - 120

Lab Sample ID: 600-191901-18 MSD

Matrix: Water

Analysis Batch: 275409

Client Sample ID: MW-5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4260		5000	8851		mg/L		92	80 - 120	0	20
Sulfate	329		5000	4824		mg/L		90	80 - 120	0	20

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011

Lab Sample ID: MB 600-274999/1

Matrix: Water

Analysis Batch: 274999

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			09/17/19 13:01	1

Lab Sample ID: LCS 600-274999/2

Matrix: Water

Analysis Batch: 274999

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	93.10		mg/L		93	90 - 110

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011 (Continued)

Lab Sample ID: 600-191901-7 DU

Matrix: Water

Analysis Batch: 274999

Client Sample ID: MW-25

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	261		260.7		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	261		260.7		mg/L		0	20
Carbonate Alkalinity as CaCO3	20.0	U	20.0	U	mg/L		NC	20

Lab Sample ID: 600-191901-17 DU

Matrix: Water

Analysis Batch: 274999

Client Sample ID: MW-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	168		167.6		mg/L		0	20
Bicarbonate Alkalinity as CaCO3	168		167.6		mg/L		0	20
Carbonate Alkalinity as CaCO3	20.0	U	20.0	U	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-274845/1

Matrix: Water

Analysis Batch: 274845

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L			09/16/19 10:56	1

Lab Sample ID: LCS 600-274845/2

Matrix: Water

Analysis Batch: 274845

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1863		mg/L		104	90 - 110

Lab Sample ID: 600-191901-9 DU

Matrix: Water

Analysis Batch: 274845

Client Sample ID: MW-7

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	545		555.0		mg/L		2	10

Default Detection Limits

Client: ARCADIS U.S., Inc.

Job ID: 600-191901-1

Project/Site: Midland - Chevron - 9-12-19

Method: 300.0 - Anions, Ion Chromatography

Analyte	MQL	MDL	Units
Chloride	0.400	0.0534	mg/L
Sulfate	0.500	0.0957	mg/L

General Chemistry

Analyte	MQL	MDL	Units
Alkalinity	20.0	20.0	mg/L
Bicarbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Carbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

HPLC/IC

Analysis Batch: 275207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191901-1	MW-12	Total/NA	Water	300.0	
600-191901-2	MW-24	Total/NA	Water	300.0	
600-191901-3	MW-9	Total/NA	Water	300.0	
600-191901-4	MW-10	Total/NA	Water	300.0	
600-191901-5	MW-14	Total/NA	Water	300.0	
600-191901-6	MW-16	Total/NA	Water	300.0	
600-191901-7	MW-25	Total/NA	Water	300.0	
MB 600-275207/4	Method Blank	Total/NA	Water	300.0	
LCS 600-275207/5	Lab Control Sample	Total/NA	Water	300.0	
600-191901-1 MS	MW-12	Total/NA	Water	300.0	
600-191901-1 MSD	MW-12	Total/NA	Water	300.0	

Analysis Batch: 275290

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191901-8	MW-15	Total/NA	Water	300.0	
600-191901-9	MW-7	Total/NA	Water	300.0	
600-191901-10	DUP-2	Total/NA	Water	300.0	
600-191901-11	MW-6	Total/NA	Water	300.0	
600-191901-12	MW-8	Total/NA	Water	300.0	
600-191901-13	MW-3	Total/NA	Water	300.0	
600-191901-14	MW-4	Total/NA	Water	300.0	
600-191901-15	DUP-3	Total/NA	Water	300.0	
600-191901-16	RW-1	Total/NA	Water	300.0	
600-191901-17	MW-1	Total/NA	Water	300.0	
600-191901-18	MW-5	Total/NA	Water	300.0	
600-191901-19	MW-2	Total/NA	Water	300.0	
MB 600-275290/4	Method Blank	Total/NA	Water	300.0	
LCS 600-275290/5	Lab Control Sample	Total/NA	Water	300.0	
600-191901-1 MS	MW-12	Total/NA	Water	300.0	
600-191901-8 MS	MW-15	Total/NA	Water	300.0	
600-191901-8 MSD	MW-15	Total/NA	Water	300.0	
600-191901-19 MSD	MW-2	Total/NA	Water	300.0	

Analysis Batch: 275347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 600-275347/4	Method Blank	Total/NA	Water	300.0	
LCS 600-275347/5	Lab Control Sample	Total/NA	Water	300.0	
600-191901-18 MS	MW-5	Total/NA	Water	300.0	
600-191901-18 MSD	MW-5	Total/NA	Water	300.0	

Analysis Batch: 275409

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191901-18	MW-5	Total/NA	Water	300.0	
MB 600-275409/4	Method Blank	Total/NA	Water	300.0	
LCS 600-275409/5	Lab Control Sample	Total/NA	Water	300.0	
600-191901-18 MS	MW-5	Total/NA	Water	300.0	
600-191901-18 MSD	MW-5	Total/NA	Water	300.0	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

General Chemistry

Analysis Batch: 274845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191901-1	MW-12	Total/NA	Water	SM 2540C	
600-191901-2	MW-24	Total/NA	Water	SM 2540C	
600-191901-3	MW-9	Total/NA	Water	SM 2540C	
600-191901-4	MW-10	Total/NA	Water	SM 2540C	
600-191901-5	MW-14	Total/NA	Water	SM 2540C	
600-191901-6	MW-16	Total/NA	Water	SM 2540C	
600-191901-7	MW-25	Total/NA	Water	SM 2540C	
600-191901-8	MW-15	Total/NA	Water	SM 2540C	
600-191901-9	MW-7	Total/NA	Water	SM 2540C	
600-191901-10	DUP-2	Total/NA	Water	SM 2540C	
600-191901-11	MW-6	Total/NA	Water	SM 2540C	
600-191901-12	MW-8	Total/NA	Water	SM 2540C	
600-191901-13	MW-3	Total/NA	Water	SM 2540C	
600-191901-14	MW-4	Total/NA	Water	SM 2540C	
600-191901-15	DUP-3	Total/NA	Water	SM 2540C	
600-191901-16	RW-1	Total/NA	Water	SM 2540C	
600-191901-17	MW-1	Total/NA	Water	SM 2540C	
600-191901-18	MW-5	Total/NA	Water	SM 2540C	
600-191901-19	MW-2	Total/NA	Water	SM 2540C	
MB 600-274845/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-274845/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-191901-9 DU	MW-7	Total/NA	Water	SM 2540C	

Analysis Batch: 274999

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-191901-1	MW-12	Total/NA	Water	2320B-1997	
600-191901-2	MW-24	Total/NA	Water	2320B-1997	
600-191901-3	MW-9	Total/NA	Water	2320B-1997	
600-191901-4	MW-10	Total/NA	Water	2320B-1997	
600-191901-5	MW-14	Total/NA	Water	2320B-1997	
600-191901-6	MW-16	Total/NA	Water	2320B-1997	
600-191901-7	MW-25	Total/NA	Water	2320B-1997	
600-191901-8	MW-15	Total/NA	Water	2320B-1997	
600-191901-9	MW-7	Total/NA	Water	2320B-1997	
600-191901-10	DUP-2	Total/NA	Water	2320B-1997	
600-191901-11	MW-6	Total/NA	Water	2320B-1997	
600-191901-12	MW-8	Total/NA	Water	2320B-1997	
600-191901-13	MW-3	Total/NA	Water	2320B-1997	
600-191901-14	MW-4	Total/NA	Water	2320B-1997	
600-191901-15	DUP-3	Total/NA	Water	2320B-1997	
600-191901-16	RW-1	Total/NA	Water	2320B-1997	
600-191901-17	MW-1	Total/NA	Water	2320B-1997	
600-191901-18	MW-5	Total/NA	Water	2320B-1997	
600-191901-19	MW-2	Total/NA	Water	2320B-1997	
MB 600-274999/1	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-274999/2	Lab Control Sample	Total/NA	Water	2320B-1997	
600-191901-7 DU	MW-25	Total/NA	Water	2320B-1997	
600-191901-17 DU	MW-1	Total/NA	Water	2320B-1997	

Eurofins TestAmerica, Houston

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-12

Date Collected: 09/12/19 07:58

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	275207	09/19/19 17:00	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-24

Date Collected: 09/12/19 08:09

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	275207	09/19/19 18:00	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-9

Date Collected: 09/12/19 08:25

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250	5 mL	1.0 mL	275207	09/19/19 18:20	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-10

Date Collected: 09/12/19 08:33

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	275207	09/19/19 18:40	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-14

Date Collected: 09/12/19 08:44

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	275207	09/19/19 19:00	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-16

Date Collected: 09/12/19 08:54

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20	5 mL	1.0 mL	275207	09/19/19 19:20	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-25

Date Collected: 09/12/19 09:02

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	5 mL	1.0 mL	275207	09/19/19 19:40	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-15

Date Collected: 09/12/19 09:12

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			275290	09/20/19 12:33	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-7

Date Collected: 09/12/19 09:19

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10			275290	09/20/19 13:33	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: DUP-2

Date Collected: 09/12/19 00:00

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 13:53	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: MW-6

Date Collected: 09/12/19 09:39

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			275290	09/20/19 14:13	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-8

Date Collected: 09/12/19 09:49

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			275290	09/20/19 14:33	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/17/19 13:01	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-3

Date Collected: 09/12/19 10:05

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 14:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-4

Date Collected: 09/12/19 10:16

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 15:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: DUP-3

Date Collected: 09/12/19 00:00

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 16:14	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

Client Sample ID: RW-1

Date Collected: 09/12/19 10:35

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			275290	09/20/19 17:34	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-1

Date Collected: 09/12/19 10:39

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			275290	09/20/19 17:54	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-5

Date Collected: 09/12/19 10:47

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 18:14	SKR	TAL HOU
Total/NA	Analysis	300.0		500			275409	09/23/19 13:08	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Client Sample ID: MW-2

Date Collected: 09/12/19 11:20

Date Received: 09/13/19 08:31

Lab Sample ID: 600-191901-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			275290	09/20/19 16:34	SKR	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	274999	09/18/19 13:58	DTN	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	274845	09/16/19 10:56	TNL	TAL HOU

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron - 9-12-19

Job ID: 600-191901-1

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
Arkansas DEQ	State Program	19-040-0	08-04-20
Louisiana	NELAP	01967	06-30-20
Louisiana	NELAP	01967	06-30-20
Oklahoma	State	2019-073	09-01-20
Oklahoma	State Program	2018-052	08-31-20
Texas	NELAP	T104704223-18-23	10-31-19
Texas	NELAP	T104704223-18-23	10-31-19
USDA	Federal	P330-18-00130	04-30-21
Utah	NELAP	TX000832019-5	07-31-20
Utah	NELAP	TX000832019-5	07-31-20

Chain of Custody Record

Environmental Testing
TestAmerica

141901

Client Information Client Contact: Russell Grant Company: ARCADIS U.S., Inc. Address: 1004 North Big Spring Suite 121 City: Midland State, Zip: TX, 79701 Phone: 916-786-5382 (Tel) Email: russell.grant@arcadis.com Project Name: Midland - Chevron Site:		Sample Information Sampler: <i>Sam S. Longwell</i> Lab PM: Kuchhadkar, Sachin G E-Mail: sachin.kuchhadkar@testamerica.com Phone:		Carrier Tracking No(s): COC No: 600-70989-19414.3 Page: 2 Job #:	
Due Date Requested: TAT Requested (days): PO #: WO #: Project #: SSOW#:		Analysis Requested Perform MS/MSD (Yes or No) ☒ N Field Filtered Sample (Yes or No) ☒ N 2320B - Alkalinity 2540C - TDS 300 - Chloride 500-501-524			
Sample Identification MW-12 MW-24 MW-9 MW-10 MW-14 MW-16 MW-15 MW-7 DUP-2 MW-6		Sample Date 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19	Sample Time 0758 0805 0825 0833 0844 0854 0902 0912 0919 — 0939	Sample Type (C=Comp, G=grab) G G G G G G G G G G	Matrix (W=Water, S=solid, O=Other) Water Water Water Water Water Water Water Water Water Water
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months			
Empty Kit Relinquished by: <i>Sam S. Longwell</i> Date: 09/12/19		Method of Shipment: Date/Time: 09/13/19 21:1 Company: J2			
Relinquished by: Relinquished by: <i>Sam S. Longwell</i> Date/Time: 09/12/19 Company:		Relinquished by: _____ Date/Time: _____ Company:			
Relinquished by: Relinquished by: _____ Date/Time: _____ Company:		Relinquished by: _____ Date/Time: _____ Company:			
Custody Seals Intact: Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:			

Chain of Custody Record


 Environment Testing
 TestAmerica

Client Information Russell Grant Company: ARCADIS U.S., Inc. Address: 1004 North Big Spring Suite 121 City: Midland State, Zip: TX, 79701 Phone: 916-786-5382 (Tel) Email: russell.grant@arcadis.com Project Name: Midland - Chevron Site:		Lab PM: Kutchadkar, Sachin G E-Mail: sachin.kutchadkar@testamericainc.com Carrier Tracking No(s): Job #:		COC No: 600-70989-19414.3 Page: 1 Page: 1	
Due Date Requested: TAT Requested (days): PO #: W/O #: 3006543 Project #: 60003622 SSO#		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)			
Sample Identification Sample ID: M2-8 M2-3 M2-4 DUP-3 R2-1 M2-1 M2-5 M2-2		Sample Date 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19 09/12/19	Sample Time 0949 1005 1010 --- 1035 1039 1047 1120	Sample Type G=grab G G G G G G G	Matrix (Water, Seawater, Other) Water Water Water Water Water Water Water Water
Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers	
Special Instructions/Note: 300 - Soil Plate		Special Instructions/Note: 300 - Chloride 2540C - TDS 2220B - Alkalinity			
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested I, II, III, IV, Other (specify)					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months					
Special Instructions/QC Requirements:					
Empty Kit Relinquished by:		Date:		Method of Shipment:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		Ver: 01/16/2019	

Sample Receipt Checklist

19SEP13 8:31

JOB NUMBER: _____

Date/Time Received: _____

CLIENT: ArcadisUNPACKED BY: JPCARRIER/DRIVER: FedexCustody Seal Present: ☒ YES ☐ NONumber of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
9271	Y / N	Y / N	4.0	676	0	4.0
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	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 ☐ NOLABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YESBase samples are >pH 12: ☐ YES ☐ NO Acid preserved are <pH 2: ☐ YES ☐ NO

pH paper Lot # _____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

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

COMMENTS:

JP 9/13/19

Client: ARCADIS U.S., Inc.

Job Number: 600-191901-1

Login Number: 191901

List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Trenery, Michael J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	4..0
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 $<6\text{mm}$ (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.

November 2019 Event



ANALYTICAL REPORT

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

Laboratory Job ID: 600-196676-1
Client Project/Site: Mark Owen

For:

ARCADIS U.S., Inc.
1004 North Big Spring
Suite 121
Midland, Texas 79701

Attn: Mr. Russell Grant



Authorized for release by:

12/19/2019 5:01:41 PM

Jasmine Turner, Project Management Assistant I
(713)690-4444

jasmine.turner@testamericainc.com

Designee for

Sachin Kudchadkar, Senior Project Manager
(713)690-4444

sachin.kudchadkar@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1

Table of Contents 2

TRRP Checklists & DCSs 3

Case Narrative 10

Method Summary 11

Sample Summary 12

Client Sample Results 13

Definitions/Glossary 21

QC Sample Results 22

Default Detection Limits 27

QC Association Summary 28

Lab Chronicle 31

Certification Summary 37

Chain of Custody 38

Receipt Checklists 42



Appendix A

Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Eurofins TestAmerica, Houston job number 600-196676-1 and consists of:

- ☒ R1 - Field chain-of-custody documentation;
- ☒ R2 - Sample identification cross-reference;
- ☒ R3 - Test reports (analytical data sheets) for each environmental sample that includes:
 - a. Items consistent with NELAC Chapter 5,
 - b. dilution factors,
 - c. preparation methods,
 - d. cleanup methods, and
 - e. if required for the project, tentatively identified compounds (TICs).
- ☐ R4 - Surrogate recovery data including:
 - a. Calculated recovery (%R), and
 - b. The laboratory's surrogate QC limits.
- ☒ R5 - Test reports/summary forms for blank samples;
- ☒ R6 - Test reports/summary forms for laboratory control samples (LCSs) including:
 - a. LCS spiking amounts,
 - b. Calculated %R for each analyte, and
 - c. The laboratory's LCS QC limits.
- ☒ R7 - Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a. Samples associated with the MS/MSD clearly identified,
 - b. MS/MSD spiking amounts,
 - c. Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d. Calculated %Rs and relative percent differences (RPDs), and
 - e. The laboratory's MS/MSD QC limits
- ☒ R8 - Laboratory analytical duplicate (if applicable) recovery and precision:
 - a. The amount of analyte measured in the duplicate,
 - b. The calculated RPD, and
 - c. The laboratory's QC limits for analytical duplicates.
- ☒ R9 - List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
- ☒ R10 - Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Jasmine Turner, for Sachin Kudchadkar

Name (printed)



Signature

12/19/2019

Date

Senior Project Manager

Official Title (printed)

Laboratory Review Checklist: Reportable Data - Page 2 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	12/19/2019
Project Name:	Mark Owen	Laboratory Job Number:	600-196676-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
R1	OI	Chain-of-custody (C-O-C)					
		Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
		Were all departures from standard conditions described in an exception report?	X				
R2	OI	Sample and quality control (QC) identification					
		Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
		Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
R3	OI	Test reports					
		Were all samples prepared and analyzed within holding times?		X			R03A
		Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
		Were calculations checked by a peer or supervisor?	X				
		Were all analyte identifications checked by a peer or supervisor?	X				
		Were sample detection limits reported for all analytes not detected?	X				
		Were all results for soil and sediment samples reported on a dry weight basis?			X		
		Were % moisture (or solids) reported for all soil and sediment samples?			X		
		Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
		If required for the project, are TICs reported?			X		
R4	O	Surrogate recovery data					
		Were surrogates added prior to extraction?			X		
		Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
R5	OI	Test reports/summary forms for blank samples					
		Were appropriate type(s) of blanks analyzed?	X				
		Were blanks analyzed at the appropriate frequency?	X				
		Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
		Were blank concentrations < MQL?	X				R05D
R6	OI	Laboratory control samples (LCS):					
		Were all COCs included in the LCS?	X				
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
		Were LCSs analyzed at the required frequency?	X				
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
		Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
		Was the LCSD RPD within QC limits?			X		
R7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data					
		Were the project/method specified analytes included in the MS and MSD?	X				
		Were MS/MSD analyzed at the appropriate frequency?	X				
		Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			R07C
		Were MS/MSD RPDs within laboratory QC limits?	X				
R8	OI	Analytical duplicate data					
		Were appropriate analytical duplicates analyzed for each matrix?	X				
		Were analytical duplicates analyzed at the appropriate frequency?	X				
		Were RPDs or relative standard deviations within the laboratory QC limits?	X				
R9	OI	Method quantitation limits (MQLs):					
		Are the MQLs for each method analyte included in the laboratory data package?	X				
		Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
		Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
R10	OI	Other problems/anomalies					
		Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
		Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
		Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				

1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Review checklist: Supporting Data - Page 3 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	12/19/2019
Project Name:	Mark Owen	Laboratory Job Number:	600-196676-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

# ¹	A ²	Description	Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					
		Were response factors and/or relative response factors for each analyte within QC limits?	X				
		Were percent RSDs or correlation coefficient criteria met?	X				
		Was the number of standards recommended in the method used for all analytes?	X				
		Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		Are ICAL data available for all instruments used?	X				
		Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	Initial and continuing calibration verification (ICV and CCV) and continuing calibration blank (CCB):					
		Was the CCV analyzed at the method-required frequency?	X				
		Were percent differences for each analyte within the method-required QC limits?	X				
		Was the ICAL curve verified for each analyte?	X				
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	Mass spectral tuning					
		Was the appropriate compound for the method used for tuning?			X		
		Were ion abundance data within the method-required QC limits?			X		
S4	O	Internal standards (IS)					
		Were IS area counts and retention times within the method-required QC limits?			X		
S5	OI	Raw data (NELAC Section 5.5.10)					
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		Were data associated with manual integrations flagged on the raw data?	X				
S6	O	Dual column confirmation					
		Did dual column confirmation results meet the method-required QC?			X		
S7	O	Tentatively identified compounds (TICs)					
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	Interference Check Sample (ICS) results					
		Were percent recoveries within method QC limits?			X		
S9	I	Serial dilutions, post digestion spikes, and method of standard additions					
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
S10	OI	Method detection limit (MDL) studies					
		Was a MDL study performed for each reported analyte?	X				
		Is the MDL either adjusted or supported by the analysis of DCSS?	X				
S11	OI	Proficiency test reports					
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	Standards documentation					
		Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	Compound/analyte identification procedures					
		Are the procedures for compound/analyte identification documented?	X				
S14	OI	Demonstration of analyst competency (DOC)					
		Was DOC conducted consistent with NELAC Chapter 5?	X				
		Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	Verification/validation documentation for methods (NELAC Chapter 5)					
		Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	Laboratory standard operating procedures (SOPs)					
		Are laboratory SOPs current and on file for each method performed?	X				
1. Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. 2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); 3. NA = Not applicable; 4. NR = Not reviewed; 5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).							

Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	12/19/2019
Project Name:	Mark Owen	Laboratory Job Number:	600-196676-1
Reviewer Name:	Jasmine Turner, for Sachin Kudchadkar		

ER # ¹	Description
R03A	Method SM 2540C: The following samples were 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-17 (600-196676-1), MW-12 (600-196676-2), MW-18 (600-196676-3), MW-11 (600-196676-4)MW-22 (600-196676-5), MW-19 (600-196676-6), MW-20 (600-196676-7), MW-21 (600-196676-8), MW-23 (600-196676-9), MW-24 (600-196676-10), MW-9 (600-196676-11), MW-10 (600-196676-12), MW-14 (600-196676-13), MW-5 (600-196676-14), MW-8 (600-196676-15), MW-6 (600-196676-16), RW-1 (600-196676-17), MW-1 (600-196676-18), MW-2 (600-196676-19), MW-3 (600-196676-20), MW-4 (600-196676-21), DUP-1 (600-196676-22), MW-7 (600-196676-23), (600-196675-A-1), MW-15 (600-196676-24), MW-25 (600-196676-25), MW-16 (600-196676-26) and MW-13 (600-196676-27).
R05D	Method 300.0: The method blank for analytical batch 600-283045 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. Method 300.0: The method blank for analytical batch 600-283137 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed. Method 300.0: The method blank for analytical batch 600-283213 contained Chloride above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.
R07C	Method 2320B-1997: 600-196676-1 MS and 600-196676-1 MSD recovered below QC limits criteria for the following analyte: Alkalinity. Matrix interference is suspected. Method 2320B-1997: 600-196676-6 MS and 600-196676-6 MSD recovered below QC limits criteria for the following analyte: Alkalinity. Matrix interference is suspected. Method 300.0: 600-196676-15 MS and 600-196676-15 MSD recovered above QC limits for the following analyte: Chloride. Matrix interference is suspected.
- Items identified by the letter "R" must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period. - O = organic analyses; I = inorganic analyses (and general chemistry, when applicable); - NA = Not applicable; - NR = Not reviewed; - ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).	

Matrix: Water
Method: SW-846 9056 / EPA 300
Date Analyzed: 8/23/2019
Job #: 600-188237
TALS Batch: 272774
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Bromide	CHWC16	0.101	0.200	0.306	0.4
Chloride	CHWC16	0.053	0.200	0.305	0.4
Fluoride	CHWC16	0.060	0.200	0.296	0.2
Nitrate as N	CHWC16	0.025	0.200	0.306	0.2
Nitrite as N	CHWC16	0.030	0.400	0.384	0.2
Sulfate	CHWC16	0.096	0.400	0.482	0.5

Matrix: Water
Method: SM 2540C
Date Analyzed: 8/20/2019
Job #: 600-188237
TALS Batch: 272376
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Total Dissolved Solids	NOEQUIP	10.000	29.880	86.000	10

Matrix: Water
Method: SM 2320B
Date Analyzed: 8/10/2019
Job #: 600-188237
TALS Batch: 271664
Units: mg/L

Analyte	Instrument #	MDL	DCS Spike	Measured Result	MQL
Alkalinity	WC23	20.000	4.800	4.770	20

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Job ID: 600-196676-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-196676-1

Comments

No additional comments.

Receipt

The samples were received on 11/27/2019 10:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.4° C and 0.5° C.

All applicable analytical narratives can be found in the TRRP Checklist section of this report.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL HOU
2320B-1997	Alkalinity, Total - SM Online, 2011	SM-Online	TAL HOU
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL HOU

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

SM-Online = Standard Methods Online

Laboratory References:

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

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-196676-1	MW-17	Water	11/23/19 08:41	11/27/19 10:15	
600-196676-2	MW-12	Water	11/23/19 08:47	11/27/19 10:15	
600-196676-3	MW-18	Water	11/23/19 08:58	11/27/19 10:15	
600-196676-4	MW-11	Water	11/23/19 09:08	11/27/19 10:15	
600-196676-5	MW-22	Water	11/23/19 09:16	11/27/19 10:15	
600-196676-6	MW-19	Water	11/23/19 09:24	11/27/19 10:15	
600-196676-7	MW-20	Water	11/23/19 09:31	11/27/19 10:15	
600-196676-8	MW-21	Water	11/23/19 09:38	11/27/19 10:15	
600-196676-9	MW-23	Water	11/23/19 09:43	11/27/19 10:15	
600-196676-10	MW-24	Water	11/23/19 09:50	11/27/19 10:15	
600-196676-11	MW-9	Water	11/23/19 10:01	11/27/19 10:15	
600-196676-12	MW-10	Water	11/23/19 10:12	11/27/19 10:15	
600-196676-13	MW-14	Water	11/23/19 10:19	11/27/19 10:15	
600-196676-14	MW-5	Water	11/23/19 10:30	11/27/19 10:15	
600-196676-15	MW-8	Water	11/23/19 11:12	11/27/19 10:15	
600-196676-16	MW-6	Water	11/23/19 11:14	11/27/19 10:15	
600-196676-17	RW-1	Water	11/23/19 11:28	11/27/19 10:15	
600-196676-18	MW-1	Water	11/23/19 11:35	11/27/19 10:15	
600-196676-19	MW-2	Water	11/23/19 12:48	11/27/19 10:15	
600-196676-20	MW-3	Water	11/23/19 12:59	11/27/19 10:15	
600-196676-21	MW-4	Water	11/23/19 13:09	11/27/19 10:15	
600-196676-22	DUP-1	Water	11/23/19 00:00	11/27/19 10:15	
600-196676-23	MW-7	Water	11/23/19 13:29	11/27/19 10:15	
600-196676-24	MW-15	Water	11/23/19 13:34	11/27/19 10:15	
600-196676-25	MW-25	Water	11/23/19 13:45	11/27/19 10:15	
600-196676-26	MW-16	Water	11/23/19 13:56	11/27/19 10:15	
600-196676-27	MW-13	Water	11/23/19 14:04	11/27/19 10:15	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-17

Date Collected: 11/23/19 08:41

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-1

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9050	b	200	26.7	mg/L			12/14/19 15:10	500
Sulfate	488		250	47.9	mg/L			12/14/19 15:10	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	194		20.0	20.0	mg/L			12/05/19 19:50	1
Bicarbonate Alkalinity as CaCO3	194		20.0	20.0	mg/L			12/05/19 19:50	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 19:50	1
Total Dissolved Solids	17900	H	200	200	mg/L			12/03/19 13:50	1

Client Sample ID: MW-12

Date Collected: 11/23/19 08:47

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-2

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	646	b	100	13.4	mg/L			12/14/19 15:30	250
Sulfate	154		5.00	0.957	mg/L			12/17/19 11:51	10

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	298		20.0	20.0	mg/L			12/05/19 20:16	1
Bicarbonate Alkalinity as CaCO3	298		20.0	20.0	mg/L			12/05/19 20:16	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:16	1
Total Dissolved Solids	3440	H	40.0	40.0	mg/L			12/03/19 13:50	1

Client Sample ID: MW-18

Date Collected: 11/23/19 08:58

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-3

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1040	b	100	13.4	mg/L			12/14/19 15:51	250
Sulfate	123		5.00	0.957	mg/L			12/17/19 12:01	10

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	196		20.0	20.0	mg/L			12/05/19 20:10	1
Bicarbonate Alkalinity as CaCO3	196		20.0	20.0	mg/L			12/05/19 20:10	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:10	1
Total Dissolved Solids	2760	H	40.0	40.0	mg/L			12/03/19 13:50	1

Client Sample ID: MW-11

Date Collected: 11/23/19 09:08

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-4

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5150	b	200	26.7	mg/L			12/14/19 16:11	500
Sulfate	138		25.0	4.79	mg/L			12/17/19 12:12	50

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-11

Date Collected: 11/23/19 09:08

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	181		20.0	20.0	mg/L			12/05/19 20:26	1
Bicarbonate Alkalinity as CaCO3	181		20.0	20.0	mg/L			12/05/19 20:26	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:26	1
Total Dissolved Solids	12500	H	200	200	mg/L			12/03/19 13:50	1

Client Sample ID: MW-22

Date Collected: 11/23/19 09:16

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-5

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	84.5	b	40.0	5.34	mg/L			12/14/19 16:32	100
Sulfate	50.4		1.00	0.191	mg/L			12/17/19 12:23	2

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	210		20.0	20.0	mg/L			12/05/19 20:21	1
Bicarbonate Alkalinity as CaCO3	210		20.0	20.0	mg/L			12/05/19 20:21	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:21	1
Total Dissolved Solids	360	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-19

Date Collected: 11/23/19 09:24

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-6

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86.6	b	40.0	5.34	mg/L			12/14/19 16:52	100
Sulfate	85.8		50.0	9.57	mg/L			12/14/19 16:52	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	203		20.0	20.0	mg/L			12/05/19 21:03	1
Bicarbonate Alkalinity as CaCO3	203		20.0	20.0	mg/L			12/05/19 21:03	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:03	1
Total Dissolved Solids	476	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-20

Date Collected: 11/23/19 09:31

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-7

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	274	b	80.0	10.7	mg/L			12/14/19 17:53	200
Sulfate	245		100	19.1	mg/L			12/14/19 17:53	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	324		20.0	20.0	mg/L			12/05/19 20:48	1
Bicarbonate Alkalinity as CaCO3	324		20.0	20.0	mg/L			12/05/19 20:48	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:48	1
Total Dissolved Solids	1460	H	20.0	20.0	mg/L			12/04/19 15:38	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-21

Date Collected: 11/23/19 09:38

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11300	b	200	26.7	mg/L			12/14/19 18:14	500
Sulfate	486		250	47.9	mg/L			12/14/19 18:14	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	200		20.0	20.0	mg/L			12/05/19 20:43	1
Bicarbonate Alkalinity as CaCO3	200		20.0	20.0	mg/L			12/05/19 20:43	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:43	1
Total Dissolved Solids	21300	H	500	500	mg/L			12/04/19 15:38	1

Client Sample ID: MW-23

Date Collected: 11/23/19 09:43

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-9

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8680	b	200	26.7	mg/L			12/14/19 18:34	500
Sulfate	346		250	47.9	mg/L			12/14/19 18:34	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	240		20.0	20.0	mg/L			12/05/19 20:37	1
Bicarbonate Alkalinity as CaCO3	240		20.0	20.0	mg/L			12/05/19 20:37	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:37	1
Total Dissolved Solids	11500	H	200	200	mg/L			12/04/19 15:38	1

Client Sample ID: MW-24

Date Collected: 11/23/19 09:50

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-10

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2230	b	200	26.7	mg/L			12/14/19 18:54	500
Sulfate	284		250	47.9	mg/L			12/14/19 18:54	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	200		20.0	20.0	mg/L			12/05/19 20:32	1
Bicarbonate Alkalinity as CaCO3	200		20.0	20.0	mg/L			12/05/19 20:32	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 20:32	1
Total Dissolved Solids	3640	H	100	100	mg/L			12/04/19 15:38	1

Client Sample ID: MW-9

Date Collected: 11/23/19 10:01

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-11

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5020	b	200	26.7	mg/L			12/14/19 19:15	500
Sulfate	334		250	47.9	mg/L			12/14/19 19:15	500

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-9

Date Collected: 11/23/19 10:01

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-11

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	279		20.0	20.0	mg/L			12/05/19 21:41	1
Bicarbonate Alkalinity as CaCO3	279		20.0	20.0	mg/L			12/05/19 21:41	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:41	1
Total Dissolved Solids	5860	H	200	200	mg/L			12/04/19 15:38	1

Client Sample ID: MW-10

Date Collected: 11/23/19 10:12

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-12

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3720	b	200	26.7	mg/L			12/14/19 19:35	500
Sulfate	129		12.5	2.39	mg/L			12/17/19 12:55	25

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	292		20.0	20.0	mg/L			12/05/19 21:35	1
Bicarbonate Alkalinity as CaCO3	292		20.0	20.0	mg/L			12/05/19 21:35	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:35	1
Total Dissolved Solids	5170	H	100	100	mg/L			12/04/19 15:38	1

Client Sample ID: MW-14

Date Collected: 11/23/19 10:19

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-13

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	963	b	100	13.4	mg/L			12/14/19 20:37	250
Sulfate	181		125	23.9	mg/L			12/14/19 20:37	250

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	314		20.0	20.0	mg/L			12/05/19 21:29	1
Bicarbonate Alkalinity as CaCO3	314		20.0	20.0	mg/L			12/05/19 21:29	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:29	1
Total Dissolved Solids	2030	H	40.0	40.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-5

Date Collected: 11/23/19 10:30

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-14

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4680	b	200	26.7	mg/L			12/14/19 20:57	500
Sulfate	271		250	47.9	mg/L			12/14/19 20:57	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	237		20.0	20.0	mg/L			12/05/19 21:24	1
Bicarbonate Alkalinity as CaCO3	237		20.0	20.0	mg/L			12/05/19 21:24	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:24	1
Total Dissolved Solids	9500	H	200	200	mg/L			12/04/19 15:38	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-8

Lab Sample ID: 600-196676-15

Date Collected: 11/23/19 11:12

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2170	b	200	26.7	mg/L			12/14/19 21:58	500
Sulfate	557		250	47.9	mg/L			12/14/19 21:58	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	169		20.0	20.0	mg/L			12/05/19 21:18	1
Bicarbonate Alkalinity as CaCO3	169		20.0	20.0	mg/L			12/05/19 21:18	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 21:18	1
Total Dissolved Solids	6380	H	100	100	mg/L			12/04/19 15:38	1

Client Sample ID: MW-6

Lab Sample ID: 600-196676-16

Date Collected: 11/23/19 11:14

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	433	b	80.0	10.7	mg/L			12/14/19 22:59	200
Sulfate	117		100	19.1	mg/L			12/14/19 22:59	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	188		20.0	20.0	mg/L			12/06/19 16:20	1
Bicarbonate Alkalinity as CaCO3	188		20.0	20.0	mg/L			12/06/19 16:20	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:20	1
Total Dissolved Solids	1320	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: RW-1

Lab Sample ID: 600-196676-17

Date Collected: 11/23/19 11:28

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8000	b	200	26.7	mg/L			12/14/19 23:20	500
Sulfate	285		250	47.9	mg/L			12/14/19 23:20	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	229		20.0	20.0	mg/L			12/05/19 22:03	1
Bicarbonate Alkalinity as CaCO3	229		20.0	20.0	mg/L			12/05/19 22:03	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 22:03	1
Total Dissolved Solids	12800	H	200	200	mg/L			12/04/19 15:38	1

Client Sample ID: MW-1

Lab Sample ID: 600-196676-18

Date Collected: 11/23/19 11:35

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11000	b	200	26.7	mg/L			12/14/19 23:40	500
Sulfate	347		250	47.9	mg/L			12/14/19 23:40	500

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-1

Date Collected: 11/23/19 11:35

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-18

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	179		20.0	20.0	mg/L			12/05/19 21:57	1
Bicarbonate Alkalinity as CaCO ₃	179		20.0	20.0	mg/L			12/05/19 21:57	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/05/19 21:57	1
Total Dissolved Solids	19000	H	200	200	mg/L			12/04/19 15:38	1

Client Sample ID: MW-2

Date Collected: 11/23/19 12:48

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-19

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	307	b	80.0	10.7	mg/L			12/15/19 00:01	200
Sulfate	162		100	19.1	mg/L			12/15/19 00:01	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	289		20.0	20.0	mg/L			12/05/19 21:52	1
Bicarbonate Alkalinity as CaCO ₃	289		20.0	20.0	mg/L			12/05/19 21:52	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/05/19 21:52	1
Total Dissolved Solids	1120	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-3

Date Collected: 11/23/19 12:59

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-20

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	267	b	40.0	5.34	mg/L			12/15/19 00:21	100
Sulfate	113		50.0	9.57	mg/L			12/15/19 00:21	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	260		20.0	20.0	mg/L			12/05/19 21:47	1
Bicarbonate Alkalinity as CaCO ₃	260		20.0	20.0	mg/L			12/05/19 21:47	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/05/19 21:47	1
Total Dissolved Solids	974	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-4

Date Collected: 11/23/19 13:09

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-21

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	117	b	8.00	1.07	mg/L			12/16/19 10:32	20
Sulfate	52.7		10.0	1.91	mg/L			12/16/19 10:32	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	213		20.0	20.0	mg/L			12/06/19 16:32	1
Bicarbonate Alkalinity as CaCO ₃	213		20.0	20.0	mg/L			12/06/19 16:32	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/06/19 16:32	1
Total Dissolved Solids	486	H	20.0	20.0	mg/L			12/04/19 15:38	1

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: DUP-1

Lab Sample ID: 600-196676-22

Date Collected: 11/23/19 00:00

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	166	b	8.00	1.07	mg/L			12/16/19 10:43	20
Sulfate	63.4		10.0	1.91	mg/L			12/16/19 10:43	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	207		20.0	20.0	mg/L			12/06/19 16:37	1
Bicarbonate Alkalinity as CaCO3	207		20.0	20.0	mg/L			12/06/19 16:37	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:37	1
Total Dissolved Solids	492	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-7

Lab Sample ID: 600-196676-23

Date Collected: 11/23/19 13:29

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	326	b	20.0	2.67	mg/L			12/16/19 10:54	50
Sulfate	119		25.0	4.79	mg/L			12/16/19 10:54	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	206		20.0	20.0	mg/L			12/06/19 16:42	1
Bicarbonate Alkalinity as CaCO3	206		20.0	20.0	mg/L			12/06/19 16:42	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:42	1
Total Dissolved Solids	968	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-15

Lab Sample ID: 600-196676-24

Date Collected: 11/23/19 13:34

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	456	b	40.0	5.34	mg/L			12/16/19 11:04	100
Sulfate	241		50.0	9.57	mg/L			12/16/19 11:04	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	217		20.0	20.0	mg/L			12/06/19 16:48	1
Bicarbonate Alkalinity as CaCO3	217		20.0	20.0	mg/L			12/06/19 16:48	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:48	1
Total Dissolved Solids	1450	H	20.0	20.0	mg/L			12/05/19 12:37	1

Client Sample ID: MW-25

Lab Sample ID: 600-196676-25

Date Collected: 11/23/19 13:45

Matrix: Water

Date Received: 11/27/19 10:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1360	b	100	13.4	mg/L			12/16/19 11:15	250
Sulfate	289		125	23.9	mg/L			12/16/19 11:15	250

Eurofins TestAmerica, Houston

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-25

Date Collected: 11/23/19 13:45

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-25

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	237		20.0	20.0	mg/L			12/06/19 16:53	1
Bicarbonate Alkalinity as CaCO ₃	237		20.0	20.0	mg/L			12/06/19 16:53	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/06/19 16:53	1
Total Dissolved Solids	6180	H	100	100	mg/L			12/05/19 12:37	1

Client Sample ID: MW-16

Date Collected: 11/23/19 13:56

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-26

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	368	b	40.0	5.34	mg/L			12/16/19 11:47	100
Sulfate	186		50.0	9.57	mg/L			12/16/19 11:47	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	281		20.0	20.0	mg/L			12/06/19 16:59	1
Bicarbonate Alkalinity as CaCO ₃	281		20.0	20.0	mg/L			12/06/19 16:59	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/06/19 16:59	1
Total Dissolved Solids	1230	H	20.0	20.0	mg/L			12/05/19 12:37	1

Client Sample ID: MW-13

Date Collected: 11/23/19 14:04

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-27

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6380	b	400	53.4	mg/L			12/16/19 11:58	1000
Sulfate	683		500	95.7	mg/L			12/16/19 11:58	1000

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	179		20.0	20.0	mg/L			12/06/19 17:05	1
Bicarbonate Alkalinity as CaCO ₃	179		20.0	20.0	mg/L			12/06/19 17:05	1
Carbonate Alkalinity as CaCO ₃	20.0	U	20.0	20.0	mg/L			12/06/19 17:05	1
Total Dissolved Solids	22000	H	500	500	mg/L			12/05/19 12:37	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
b	The compound was found in the blank and sample
J	Result is less than the MQL but greater than or equal to the SDL and the concentration is an estimated value.
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.
U	Analyte was not detected at or above the SDL.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
N1	MS, MSD: Spike recovery exceeds upper or lower control limits.
U	Analyte was not detected at or above the SDL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-283045/34

Matrix: Water

Analysis Batch: 283045

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1805	J	0.400	0.0534	mg/L			12/14/19 19:56	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 19:56	1

Lab Sample ID: MB 600-283045/4

Matrix: Water

Analysis Batch: 283045

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1909	J	0.400	0.0534	mg/L			12/14/19 09:43	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 09:43	1

Lab Sample ID: LCS 600-283045/35

Matrix: Water

Analysis Batch: 283045

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.26		mg/L		101	90 - 110
Sulfate	20.0	19.63		mg/L		98	90 - 110

Lab Sample ID: LCS 600-283045/5

Matrix: Water

Analysis Batch: 283045

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.20		mg/L		101	90 - 110
Sulfate	20.0	19.48		mg/L		97	90 - 110

Lab Sample ID: 600-196676-15 MS

Matrix: Water

Analysis Batch: 283045

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2170	b	5000	8306	N1	mg/L		123	80 - 120
Sulfate	557		5000	5707		mg/L		103	80 - 120

Lab Sample ID: 600-196676-15 MSD

Matrix: Water

Analysis Batch: 283045

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2170	b	5000	8332	N1	mg/L		123	80 - 120	0	20
Sulfate	557		5000	5728		mg/L		103	80 - 120	0	20

Lab Sample ID: MB 600-283137/37

Matrix: Water

Analysis Batch: 283137

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3113	J	0.400	0.0534	mg/L			12/16/19 13:24	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/16/19 13:24	1

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-283137/6

Matrix: Water

Analysis Batch: 283137

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3166	J	0.400	0.0534	mg/L			12/16/19 05:48	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/16/19 05:48	1

Lab Sample ID: LCS 600-283137/38

Matrix: Water

Analysis Batch: 283137

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.52		mg/L		98	90 - 110
Sulfate	20.0	19.38		mg/L		97	90 - 110

Lab Sample ID: LCS 600-283137/7

Matrix: Water

Analysis Batch: 283137

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.39		mg/L		97	90 - 110
Sulfate	20.0	19.16		mg/L		96	90 - 110

Lab Sample ID: MB 600-283213/37

Matrix: Water

Analysis Batch: 283213

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3170	J	0.400	0.0534	mg/L			12/17/19 12:34	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 12:34	1

Lab Sample ID: MB 600-283213/6

Matrix: Water

Analysis Batch: 283213

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3135	J	0.400	0.0534	mg/L			12/17/19 05:06	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 05:06	1

Lab Sample ID: LCS 600-283213/38

Matrix: Water

Analysis Batch: 283213

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.41		mg/L		97	90 - 110
Sulfate	20.0	19.09		mg/L		95	90 - 110

Lab Sample ID: LCS 600-283213/7

Matrix: Water

Analysis Batch: 283213

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.35		mg/L		97	90 - 110
Sulfate	20.0	19.05		mg/L		95	90 - 110

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011

Lab Sample ID: MB 600-282300/2

Matrix: Water

Analysis Batch: 282300

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			12/05/19 19:39	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 19:39	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/05/19 19:39	1

Lab Sample ID: LCS 600-282300/3

Matrix: Water

Analysis Batch: 282300

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	101.5		mg/L		101	90 - 110

Lab Sample ID: 600-196676-1 MS

Matrix: Water

Analysis Batch: 282300

Client Sample ID: MW-17

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	194		250	229.0	N1	mg/L		14	75 - 125

Lab Sample ID: 600-196676-1 MSD

Matrix: Water

Analysis Batch: 282300

Client Sample ID: MW-17

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	194		250	233.7	N1	mg/L		16	75 - 125	2	20

Lab Sample ID: 600-196676-6 MS

Matrix: Water

Analysis Batch: 282300

Client Sample ID: MW-19

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	203		250	202.3	N1	mg/L		-0.2	75 - 125

Lab Sample ID: 600-196676-6 MSD

Matrix: Water

Analysis Batch: 282300

Client Sample ID: MW-19

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	203		250	206.6	N1	mg/L		2	75 - 125	2	20

Lab Sample ID: MB 600-282429/2

Matrix: Water

Analysis Batch: 282429

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	20.0	U	20.0	20.0	mg/L			12/06/19 16:09	1
Bicarbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:09	1
Carbonate Alkalinity as CaCO3	20.0	U	20.0	20.0	mg/L			12/06/19 16:09	1

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: 2320B-1997 - Alkalinity, Total - SM Online, 2011 (Continued)

Lab Sample ID: LCS 600-282429/3

Matrix: Water

Analysis Batch: 282429

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	100	102.1		mg/L		102	90 - 110

Lab Sample ID: 600-196676-16 DU

Matrix: Water

Analysis Batch: 282429

Client Sample ID: MW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	188		191.6		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	188		191.6		mg/L		2	20
Carbonate Alkalinity as CaCO3	20.0	U	20.0	U	mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-281950/1

Matrix: Water

Analysis Batch: 281950

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L			12/03/19 13:50	1

Lab Sample ID: LCS 600-281950/2

Matrix: Water

Analysis Batch: 281950

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1746		mg/L		97	90 - 110

Lab Sample ID: MB 600-282105/1

Matrix: Water

Analysis Batch: 282105

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L			12/04/19 15:38	1

Lab Sample ID: LCS 600-282105/2

Matrix: Water

Analysis Batch: 282105

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1726		mg/L		96	90 - 110

Lab Sample ID: 600-196676-16 DU

Matrix: Water

Analysis Batch: 282105

Client Sample ID: MW-6

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1320	H	1354		mg/L		3	10

Eurofins TestAmerica, Houston

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: MB 600-282206/1

Matrix: Water

Analysis Batch: 282206

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10.0	U	10.0	10.0	mg/L	-		12/05/19 12:37	1

Lab Sample ID: LCS 600-282206/2

Matrix: Water

Analysis Batch: 282206

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1731		mg/L	-	96	90 - 110

Unadjusted Detection Limits

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Method: 300.0 - Anions, Ion Chromatography

Analyte	MQL	MDL	Units
Chloride	0.400	0.0534	mg/L
Sulfate	0.500	0.0957	mg/L

General Chemistry

Analyte	MQL	MDL	Units
Alkalinity	20.0	20.0	mg/L
Bicarbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Carbonate Alkalinity as CaCO ₃	20.0	20.0	mg/L
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

HPLC/IC

Analysis Batch: 283045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-1	MW-17	Total/NA	Water	300.0	
600-196676-2	MW-12	Total/NA	Water	300.0	
600-196676-3	MW-18	Total/NA	Water	300.0	
600-196676-4	MW-11	Total/NA	Water	300.0	
600-196676-5	MW-22	Total/NA	Water	300.0	
600-196676-6	MW-19	Total/NA	Water	300.0	
600-196676-7	MW-20	Total/NA	Water	300.0	
600-196676-8	MW-21	Total/NA	Water	300.0	
600-196676-9	MW-23	Total/NA	Water	300.0	
600-196676-10	MW-24	Total/NA	Water	300.0	
600-196676-11	MW-9	Total/NA	Water	300.0	
600-196676-12	MW-10	Total/NA	Water	300.0	
600-196676-13	MW-14	Total/NA	Water	300.0	
600-196676-14	MW-5	Total/NA	Water	300.0	
600-196676-15	MW-8	Total/NA	Water	300.0	
600-196676-16	MW-6	Total/NA	Water	300.0	
600-196676-17	RW-1	Total/NA	Water	300.0	
600-196676-18	MW-1	Total/NA	Water	300.0	
600-196676-19	MW-2	Total/NA	Water	300.0	
600-196676-20	MW-3	Total/NA	Water	300.0	
MB 600-283045/34	Method Blank	Total/NA	Water	300.0	
MB 600-283045/4	Method Blank	Total/NA	Water	300.0	
LCS 600-283045/35	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283045/5	Lab Control Sample	Total/NA	Water	300.0	
600-196676-15 MS	MW-8	Total/NA	Water	300.0	
600-196676-15 MSD	MW-8	Total/NA	Water	300.0	

Analysis Batch: 283137

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-21	MW-4	Total/NA	Water	300.0	
600-196676-22	DUP-1	Total/NA	Water	300.0	
600-196676-23	MW-7	Total/NA	Water	300.0	
600-196676-24	MW-15	Total/NA	Water	300.0	
600-196676-25	MW-25	Total/NA	Water	300.0	
600-196676-26	MW-16	Total/NA	Water	300.0	
600-196676-27	MW-13	Total/NA	Water	300.0	
MB 600-283137/37	Method Blank	Total/NA	Water	300.0	
MB 600-283137/6	Method Blank	Total/NA	Water	300.0	
LCS 600-283137/38	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283137/7	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 283213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-2	MW-12	Total/NA	Water	300.0	
600-196676-3	MW-18	Total/NA	Water	300.0	
600-196676-4	MW-11	Total/NA	Water	300.0	
600-196676-5	MW-22	Total/NA	Water	300.0	
600-196676-12	MW-10	Total/NA	Water	300.0	
MB 600-283213/37	Method Blank	Total/NA	Water	300.0	
MB 600-283213/6	Method Blank	Total/NA	Water	300.0	
LCS 600-283213/38	Lab Control Sample	Total/NA	Water	300.0	

Eurofins TestAmerica, Houston

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

HPLC/IC (Continued)

Analysis Batch: 283213 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 600-283213/7	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 281950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-1	MW-17	Total/NA	Water	SM 2540C	
600-196676-2	MW-12	Total/NA	Water	SM 2540C	
600-196676-3	MW-18	Total/NA	Water	SM 2540C	
600-196676-4	MW-11	Total/NA	Water	SM 2540C	
MB 600-281950/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-281950/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 282105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-5	MW-22	Total/NA	Water	SM 2540C	
600-196676-6	MW-19	Total/NA	Water	SM 2540C	
600-196676-7	MW-20	Total/NA	Water	SM 2540C	
600-196676-8	MW-21	Total/NA	Water	SM 2540C	
600-196676-9	MW-23	Total/NA	Water	SM 2540C	
600-196676-10	MW-24	Total/NA	Water	SM 2540C	
600-196676-11	MW-9	Total/NA	Water	SM 2540C	
600-196676-12	MW-10	Total/NA	Water	SM 2540C	
600-196676-13	MW-14	Total/NA	Water	SM 2540C	
600-196676-14	MW-5	Total/NA	Water	SM 2540C	
600-196676-15	MW-8	Total/NA	Water	SM 2540C	
600-196676-16	MW-6	Total/NA	Water	SM 2540C	
600-196676-17	RW-1	Total/NA	Water	SM 2540C	
600-196676-18	MW-1	Total/NA	Water	SM 2540C	
600-196676-19	MW-2	Total/NA	Water	SM 2540C	
600-196676-20	MW-3	Total/NA	Water	SM 2540C	
600-196676-21	MW-4	Total/NA	Water	SM 2540C	
600-196676-22	DUP-1	Total/NA	Water	SM 2540C	
600-196676-23	MW-7	Total/NA	Water	SM 2540C	
MB 600-282105/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-282105/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-196676-16 DU	MW-6	Total/NA	Water	SM 2540C	

Analysis Batch: 282206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-24	MW-15	Total/NA	Water	SM 2540C	
600-196676-25	MW-25	Total/NA	Water	SM 2540C	
600-196676-26	MW-16	Total/NA	Water	SM 2540C	
600-196676-27	MW-13	Total/NA	Water	SM 2540C	
MB 600-282206/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-282206/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 282300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-1	MW-17	Total/NA	Water	2320B-1997	
600-196676-2	MW-12	Total/NA	Water	2320B-1997	

Eurofins TestAmerica, Houston

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

General Chemistry (Continued)

Analysis Batch: 282300 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-3	MW-18	Total/NA	Water	2320B-1997	
600-196676-4	MW-11	Total/NA	Water	2320B-1997	
600-196676-5	MW-22	Total/NA	Water	2320B-1997	
600-196676-6	MW-19	Total/NA	Water	2320B-1997	
600-196676-7	MW-20	Total/NA	Water	2320B-1997	
600-196676-8	MW-21	Total/NA	Water	2320B-1997	
600-196676-9	MW-23	Total/NA	Water	2320B-1997	
600-196676-10	MW-24	Total/NA	Water	2320B-1997	
600-196676-11	MW-9	Total/NA	Water	2320B-1997	
600-196676-12	MW-10	Total/NA	Water	2320B-1997	
600-196676-13	MW-14	Total/NA	Water	2320B-1997	
600-196676-14	MW-5	Total/NA	Water	2320B-1997	
600-196676-15	MW-8	Total/NA	Water	2320B-1997	
600-196676-17	RW-1	Total/NA	Water	2320B-1997	
600-196676-18	MW-1	Total/NA	Water	2320B-1997	
600-196676-19	MW-2	Total/NA	Water	2320B-1997	
600-196676-20	MW-3	Total/NA	Water	2320B-1997	
MB 600-282300/2	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-282300/3	Lab Control Sample	Total/NA	Water	2320B-1997	
600-196676-1 MS	MW-17	Total/NA	Water	2320B-1997	
600-196676-1 MSD	MW-17	Total/NA	Water	2320B-1997	
600-196676-6 MS	MW-19	Total/NA	Water	2320B-1997	
600-196676-6 MSD	MW-19	Total/NA	Water	2320B-1997	

Analysis Batch: 282429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196676-16	MW-6	Total/NA	Water	2320B-1997	
600-196676-21	MW-4	Total/NA	Water	2320B-1997	
600-196676-22	DUP-1	Total/NA	Water	2320B-1997	
600-196676-23	MW-7	Total/NA	Water	2320B-1997	
600-196676-24	MW-15	Total/NA	Water	2320B-1997	
600-196676-25	MW-25	Total/NA	Water	2320B-1997	
600-196676-26	MW-16	Total/NA	Water	2320B-1997	
600-196676-27	MW-13	Total/NA	Water	2320B-1997	
MB 600-282429/2	Method Blank	Total/NA	Water	2320B-1997	
LCS 600-282429/3	Lab Control Sample	Total/NA	Water	2320B-1997	
600-196676-16 DU	MW-6	Total/NA	Water	2320B-1997	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-17

Date Collected: 11/23/19 08:41

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 15:10	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 19:50	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	281950	12/03/19 13:50	TNL	TAL HOU

Client Sample ID: MW-12

Date Collected: 11/23/19 08:47

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			283045	12/14/19 15:30	W1N	TAL HOU
Total/NA	Analysis	300.0		10			283213	12/17/19 11:51	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:16	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	281950	12/03/19 13:50	TNL	TAL HOU

Client Sample ID: MW-18

Date Collected: 11/23/19 08:58

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			283045	12/14/19 15:51	W1N	TAL HOU
Total/NA	Analysis	300.0		10			283213	12/17/19 12:01	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:10	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	281950	12/03/19 13:50	TNL	TAL HOU

Client Sample ID: MW-11

Date Collected: 11/23/19 09:08

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 16:11	W1N	TAL HOU
Total/NA	Analysis	300.0		50			283213	12/17/19 12:12	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:26	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	281950	12/03/19 13:50	TNL	TAL HOU

Client Sample ID: MW-22

Date Collected: 11/23/19 09:16

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			283045	12/14/19 16:32	W1N	TAL HOU
Total/NA	Analysis	300.0		2			283213	12/17/19 12:23	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:21	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Eurofins TestAmerica, Houston

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-19

Date Collected: 11/23/19 09:24

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			283045	12/14/19 16:52	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:03	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-20

Date Collected: 11/23/19 09:31

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200			283045	12/14/19 17:53	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:48	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-21

Date Collected: 11/23/19 09:38

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 18:14	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:43	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	2 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-23

Date Collected: 11/23/19 09:43

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 18:34	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:37	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-24

Date Collected: 11/23/19 09:50

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 18:54	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 20:32	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-9

Date Collected: 11/23/19 10:01

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 19:15	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:41	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-10

Date Collected: 11/23/19 10:12

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 19:35	W1N	TAL HOU
Total/NA	Analysis	300.0		25			283213	12/17/19 12:55	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:35	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-14

Date Collected: 11/23/19 10:19

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			283045	12/14/19 20:37	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:29	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-5

Date Collected: 11/23/19 10:30

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 20:57	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:24	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-8

Date Collected: 11/23/19 11:12

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 21:58	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:18	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-6

Date Collected: 11/23/19 11:14

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200			283045	12/14/19 22:59	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:20	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: RW-1

Date Collected: 11/23/19 11:28

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 23:20	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 22:03	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-1

Date Collected: 11/23/19 11:35

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		500			283045	12/14/19 23:40	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:57	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-2

Date Collected: 11/23/19 12:48

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		200			283045	12/15/19 00:01	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:52	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-3

Date Collected: 11/23/19 12:59

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-20

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			283045	12/15/19 00:21	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282300	12/05/19 21:47	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-4

Date Collected: 11/23/19 13:09

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-21

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			283137	12/16/19 10:32	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:32	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: DUP-1

Date Collected: 11/23/19 00:00

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-22

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20			283137	12/16/19 10:43	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:37	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-7

Date Collected: 11/23/19 13:29

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-23

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50			283137	12/16/19 10:54	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:42	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282105	12/04/19 15:38	TNL	TAL HOU

Client Sample ID: MW-15

Date Collected: 11/23/19 13:34

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-24

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			283137	12/16/19 11:04	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:48	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282206	12/05/19 12:37	TNL	TAL HOU

Client Sample ID: MW-25

Date Collected: 11/23/19 13:45

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		250			283137	12/16/19 11:15	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:53	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282206	12/05/19 12:37	TNL	TAL HOU

Eurofins TestAmerica, Houston

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

Client Sample ID: MW-16

Date Collected: 11/23/19 13:56

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-26

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100			283137	12/16/19 11:47	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 16:59	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282206	12/05/19 12:37	TNL	TAL HOU

Client Sample ID: MW-13

Date Collected: 11/23/19 14:04

Date Received: 11/27/19 10:15

Lab Sample ID: 600-196676-27

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1000			283137	12/16/19 11:58	W1N	TAL HOU
Total/NA	Analysis	2320B-1997		1	50 mL	50 mL	282429	12/06/19 17:05	KRD	TAL HOU
Total/NA	Analysis	SM 2540C		1	2 mL	100 mL	282206	12/05/19 12:37	TNL	TAL HOU

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Mark Owen

Job ID: 600-196676-1

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
Oklahoma	State	2019-073	08-31-20
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

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

Eurofins TestAmerica, Houston

Chain of Custody Record

Client Information		Sampler: <u>CE, CM</u>		Lab PM		Carrier Tracking No(s):		COC No: 600-72356-19860.3	
Client Contact: Mr. Russell Grant		Phone:		E-Mail: sachin.kudchadkar@testamericainc.com		Kudchadkar, Sachin G		Page: Page	
Company: ARCADIS U.S., Inc.		Due Date Requested:		Analysis Requested		Job #:		Preservation Codes:	
Address: 1004 North Big Spring Suite 121		TAT Requested (days):		Perform MS/MSD (Yes or No)		2320B, Alkalinity		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 Other:	
City: Midland		PO #: 30006543 Mark Owen		Field Filtered Sample (Yes or No)		2540C, TDS		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
State, Zip: TX, 79701		WO #:		Matrix (W=water, S=solid, O=other)		300-Cl, SO4		Total Number of containers	
Phone: 916-786-5382(Tel)		Project #: 60003622		Sample Type (C=Comp, G=grab)		2320B, Alkalinity		Special Instructions/Note:	
Email: russell.grant@arcadis-us.com		SSOW#:		Sample Time		2320B, Alkalinity			
Project Name: MARK OWEN		Sample Date		Preservation Code:		2320B, Alkalinity			
Site:		Sample Date		Preservation Code:		2320B, Alkalinity			
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other)	
MW-17		11/23/19		0841		Gx		Water	
MW-12		11/23/19		0847		Gx		Water	
MW-18		11/23/19		0858		Gx		Water	
MW-11		11/23/19		0908		Gx		Water	
MW-22		11/23/19		0916		Gx		Water	
MW-14		11/23/19		0924		Gx		Water	
MW-20		11/23/19		0931		Gx		Water	
MW-21		11/23/19		0938		Gx		Water	
MW-23		11/23/19		0943		Gx		Water	
MW-24		11/23/19		0950		Gx		Water	
MW-9		11/23/19		1001		Gx		Water	



600-196676 Chain of Custody

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

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: _____ Date: _____
Relinquished by: Callum Ferguson Date/Time: 11/26/19 1325 Company: Arcadis
Relinquished by: _____ Date/Time: _____ Company: _____
Relinquished by: _____ Date/Time: _____ Company: _____
Custody Seals Intact: _____
 Δ Yes Δ No **Custody Seal No.:** _____

Method of Shipment: _____
 Received by: YORP Date/Time: 11/27/19 1015 Company: TAH
 Received by: _____ Date/Time: _____ Company: _____
 Received by: _____ Date/Time: _____ Company: _____
 Cooler Temperature(s) °C and Other Remarks

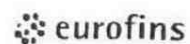
[illegible]

Client Information Client Contact: Mr. Russell Grant Company: ARCADIS U.S., Inc. Address: 1004 North Big Spring Suite 121 City: Midland State: TX Zip: 79701 Phone: 916-786-5382 (Tel) Email: russell.grant@arcadis-us.com Project Name: MARK OWEN Site:		Lab PM: Kutchadkar, Sachin G E-Mail: sachin.kutchadkar@lestamerica.com Carrier Tracking No(s): 600-72356-19860.3 Page: 1 Job #:	
Analysis Requested Due Date Requested: TAT Requested (days): PO #: 30006543 Mark Owen WD #: 60003622 Project #: 60003622 SSOW#:		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 Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Sample Identification MW-7 MW-13 MW-25 MW-16 MW-13		Special Instructions/Note: Total Number of Containers: 1 1 1 1 1	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☒ Disposal By Lab Special Instructions/QC Requirements:	
Empty Kit Relinquished by: Relinquished by: Callum Regusan Relinquished by: Relinquished by:		Method of Shipment: Received by: YRPD Received by: Received by: Date/Time: 11/26/2019 1825 Date/Time: Date/Time:	
Custody Seal No.: Custody Seal No.		Cooler Temperature(s) °C and Other Remarks: Cooler Temperature(s) °C and Other Remarks:	

Eurofins TestAmerica Houston

Loc: 600

196676

Environment Testing
TestAmerica

Sample Receipt Checklist

19 NOV 27 10:15

JOB NUMBER: _____

Date/Time Received: _____

CLIENT: _____

UNPACKED BY: YR

CARRIER/DRIVER: _____

Custody Seal Present: ☒ YES ☐ NONumber of Coolers Received: 2

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
7477	X / N	Y / N	0.4	676	+0.1	0.5
8493	X / N	Y / N	0.3	676	+0.1	0.4
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NOLABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YESBase samples are > pH 12: ☐ YES ☐ NOAcid preserved are < pH 2: ☐ YES ☐ NOTX1005 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:

YR 11/29/19

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 600-196676-1

Login Number: 196676

List Source: Eurofins TestAmerica, Houston

List Number: 1

Creator: Rubio, Yuri

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	0.5,0.4
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 $<6\text{mm}$ (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.

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Suite 800

Houston, Texas 77042

Tel 713 953 4800

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