ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

2019 ANNUAL GROUNDWATER MONITORING REPORT

Cooper-Jal Unit South Injection Station

Section 24, Township 24 South, Range 36 East

Lea County, New Mexico

OGRID No. 4323

Case No. 1R289

25 March 2020

ARCADIS Design & Consultancy for natural and built assets

2019 ANNUAL GROUNDWATER MONITORING REPORT

Cooper-Jal Unit South Injection Station GW Remediation
Lea County, Texas

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Date:
25 March 2020

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1 INTRODUCTION

Arcadis U.S., Inc. (Arcadis) has prepared this report for Chevron Environmental Management Company (CEMC), which summarizes semi-annual groundwater monitoring activities conducted in 2019 at the Cooper-Jal Unit South Injection Station (Site). Data presented in this report was collected during two semi-annual groundwater monitoring events conducted in June 2019 and November 2019.

The Site is located on Lea County Road J7, approximately five and a half miles northwest of Jal, New Mexico, in Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. The latitude and longitude coordinates of the Site are 32° 12' 7.13" N and 103° 13' 4.36" W.

Land in the vicinity of the Site is utilized primarily for livestock ranching and oil and gas production and has areas of undeveloped rangeland vegetated with indigenous grass. An injection well facility, operated by Resaca Resources, LLC (Resaca), is located adjacent to the Site. No active Chevron U.S.A. Inc. (Chevron) operations are present in the area. 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 semi-annually from a network of 18 monitoring wells and 2 recovery wells. A Site Details Map is presented as **Figure 2**. Arcadis performed semi-annual groundwater sampling events on June 20, 2019, and November 23-24, 2019. Field monitoring methodologies are detailed in **Appendix B**.

2.1 Groundwater Gauging Data

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

- Groundwater elevations ranged from
  - 3,181.43 feet above mean sea level (ft AMSL) (MW-11) to 3,190.61 ft AMSL (MW-12) during the June 2019 gauging event, and
  - 3,181.52 ft AMSL (MW-11) to 3,190.68 ft AMSL (MW-12) during the November 2019 event.
- The groundwater elevations during the 2019 period appear to be consistent with historical levels, with groundwater flow generally to the southeast.
- Potentiometric elevation data for the sampling events are presented in **Table 1**. Groundwater potentiometric surface maps for June 2019 and November 2019 are presented on **Figure 3**.
- The calculated gradient was
  - 0.0155 feet/foot (ft/ft) for the June 2019 gauging event, and
  - 0.00293 ft/ft for the November 2019 gauging event.
- LNAPL was not detected during either the June 2019 or the November 2019 monitoring events.

2.2 Groundwater Analytical Results

18 of the 20 wells were sampled at the Site during the June 2019 sampling event. Monitoring wells MW-8 and MW-10 were not sampled due to obstructions observed downhole by the field crew. These obstructions prevented deployment of the HydraSleeves™ for sample retrieval. The obstructions were not encountered during the November 2019 sampling event and all 20 wells were sampled. Groundwater analytical results for chloride and total dissolved solids (TDS) were compared to the New Mexico 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 1998 through 2019 are presented in **Appendices C and E**, respectively. Copies of the certified analytical reports and chain-of-custody documentation from Eurofins TestAmerica are provided in **Appendix D**.

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

Chloride

- Chloride concentrations detected during the June 2019 groundwater sampling event exceeded the NMWQCC standard of 250 milligrams per liter (mg/L) in
    - 12 of the 18 wells sampled (MW-1, MW-2, MW-4, MW-4A, MW-5, MW-7, MW-9, MW-9A, RW-1, RW-2, RW-2R, and the upgradient offsite monitoring well MW-12).
    - Chloride concentrations exceeding the NMWQCC standard of 250 mg/L ranged from 254 mg/L at monitoring well MW-12 up to 9,290 mg/L at recovery well RW-1.
- Chloride concentrations detected during the November 2019 groundwater sampling event exceeded the NMWQCC standard of 250 mg/L in
    - 10 of the 20 wells sampled (MW-1, MW-4 through MW-5, MW-7, MW-9, RW-1 through RW-2R and the upgradient offsite monitoring well MW-12).
    - Concentrations exceeding the NMWQCC standard of 250 mg/L ranged from 321 mg/L (MW-4A) up to 7,720 mg/L (RW-2R).

TDS

- TDS concentrations detected during the June 2019 groundwater sampling event exceeded the NMWQCC standard of 1,000 mg/L in
    - 10 of the 18 wells sampled (MW-1, MW-4, MW-4A, MW-5, MW-7, MW-9, MW-9A, RW-1, RW-2, and RW-2R).

  - TDS concentrations exceeding the NMWQCC standard of 1,000 mg/L ranged from 1,040 mg/L (MW-4A) up to 29,400 mg/L (RW-2R).

- TDS concentrations detected during the November 2019 groundwater sampling event exceeded the NMWQCC standard of 1,000 mg/L in
  - 9 of the 20 wells (MW-1, MW-4, MW-5, MW-7, MW-9, MW-12, and RW-1 through RW-2R) at concentrations ranging from 1,010 mg/L (MW-12) up to 21,000 mg/L (RW-2R).

Sulfate

- Groundwater samples were not analysed for sulfate during the June 2019 groundwater sampling event.
- Sulfate concentrations detected during the November 2019 semi-annual groundwater sampling event exceeded the NMWQCC standard of 600 mg/L in
  - 2 of the 20 wells (RW-1 and RW-2R) at concentrations of 722 mg/L (RW-1) and 943 mg/L (RW-2R), respectively.

3 SUMMARY

In summary, the semi-annual monitoring activities conducted at the Site in June 2019 and November 2019 indicate the following:

- 19 of the 20 monitoring wells were gauged during the June 2019 event, and all 20 monitoring wells were gauged during the November 2019 event;
- Groundwater elevations at the Site have remained relatively consistent over the last 10 years;
- 18 of the 20 monitoring wells were sampled during the June 2019 event, and all 20 monitoring wells were sampled during November 2019 event; and
- Potentiometric surface conditions were consistent with historical results showing groundwater flow to the southeast towards Monument Draw.

Groundwater sample analytical results reported for the June 2019 and November 2019 sampling events indicate:

- Chloride exceeded the NMWQCC standard in 12 wells sampled during the June 2019 event, and concentrations exceeded in 10 wells sampled during the November 2019 event;
- TDS exceeded the NMWQCC standard in 10 wells sampled during the June 2019 event, and concentrations exceeded in 9 monitoring wells sampled during the November 2019 event;
- Sulfate exceeded the NMWQCC standard in 2 wells sampled during the November 2019 event;
- Chloride and TDS concentrations have remained relatively stable in wells MW-1, MW-2, MW-2A, MW-3, MW-4A, MW-5A, MW-6R, MW-8, MW-10, MW-11, and MW-14;
- Chloride and TDS concentrations have exhibited a downward trend in wells MW-4 and MW-5;
- Chloride and/or TDS concentrations exhibited an upward trend in wells MW-12 and RW-2R; and
- TDS increased in wells MW-7, MW-9, MW-9A, RW-1, RW-2 during the June 2019 event, however the November 2019 sampling results were consistent with the historical data trends.

TABLES

Table 1
2019 Groundwater Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

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Well ID	TOC1 Elevation	Well Screen Interval (ft bgs[2])	Collection Date	Total Depth (ft below TOC[1])	Depth to Groundwater (ft below TOC[1])	Groundwater Elevation (ft)
MW-1	*3321.94*	153-173	06/20/19	171.17	134.56	3187.38
			11/20/19	174.20	134.45	3187.49
MW-2	*3321.27*	163-173	06/20/19	168.39	134.27	3187.00
			11/20/19	168.57	134.21	3187.06
MW-2A	*3321.30*	130-145	06/20/19	142.47	134.43	3186.87
			11/20/19	142.23	134.24	3187.06
MW-3	*3320.08*	161-171	06/20/19	171.93	132.24	3187.84
			11/19/19	175.90	132.50	3187.58
MW-4	*3321.58*	161-171	06/20/19	171.81	136.21	3185.37
			11/19/19	177.64	135.06	3186.52
MW-4A	*3321.42*	128-143	06/20/19	145.55	134.98	3186.44
			11/19/19	147.60	134.95	3186.47
MW-5	*3322.98*	161-171	06/20/19	173.72	136.65	3186.33
			11/19/19	177.50	136.91	3186.07
MW-5A	*3321.07*	126-141	06/20/19	176.71	144.05	3177.02
			11/19/19	139.98	136.46	3184.61
MW-6	*3321.15*		Well Plugged and Abandoned on 9/30/2013			
MW-6R	*3323.04*	136-176	06/20/19	----	----	----
			11/19/19	187.37	136.04	3187.00
MW-7	*3320.19*	151-166	06/20/19	162.60	135.48	3184.71
			11/20/19	162.58	135.50	3184.69
MW-8	*3319.06*	155-170	06/20/19	146.85	133.87	3185.19
			11/20/19	146.92	133.84	3185.22
MW-9	*3314.68*	149-164	06/20/19	161.46	131.95	3182.73
			11/20/19	162.00	131.86	3182.82
MW-9A	*3314.48*	127-142	06/20/19	141.72	131.69	3182.79
			11/20/19	145.66	131.63	3182.85
MW-10	*3321.12*	151-166	06/20/19	160.72	136.28	3184.84
			11/20/19	160.71	136.36	3184.76
MW-11	*3311.56*	125-140	06/20/19	165.71	130.13	3181.43
			11/20/19	172.30	130.04	3181.52
MW-12*	*3330.33*	157-172	06/20/19	171.02	139.72	3190.61
			11/20/19	174.57	139.65	3190.68
MW-13*	*3338.49*	--	Well Plugged and Abandoned on 7/11/2017			
MW-14	*3318.36*	131-171	06/20/19	178.74	134.78	3183.58
			11/20/19	178.42	130.48	3187.88
RW-1	*3320.31*	130-175	06/20/19	164.03	133.64	3186.67
			11/20/19	163.79	133.63	3186.68

Table 1
2019 Groundwater Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

Well ID	TOC1 Elevation	Well Screen Interval (ft bgs[2])	Collection Date	Total Depth (ft below TOC[1])	Depth to Groundwater (ft below TOC[1])	Groundwater Elevation (ft)
RW-2	*3320.42*	135-160	06/20/19	156.50	135.23	3185.19
			11/19/19	172.60	135.08	3185.34
RW-2R	*3320.68*	133-173	06/20/19	176.82	136.79	3183.89
			11/19/19	188.97	136.71	3183.97

Notes:
1. TOC - Top of Casing
2. MSL - Mean Sea Level
3. ft bgs - feet below ground surface
4. in - inches
5. A - Indicates groundwater monitor well installed in shallow Uppermost Groundwater Bearing Unit.
6. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.

Table 2
2019 Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

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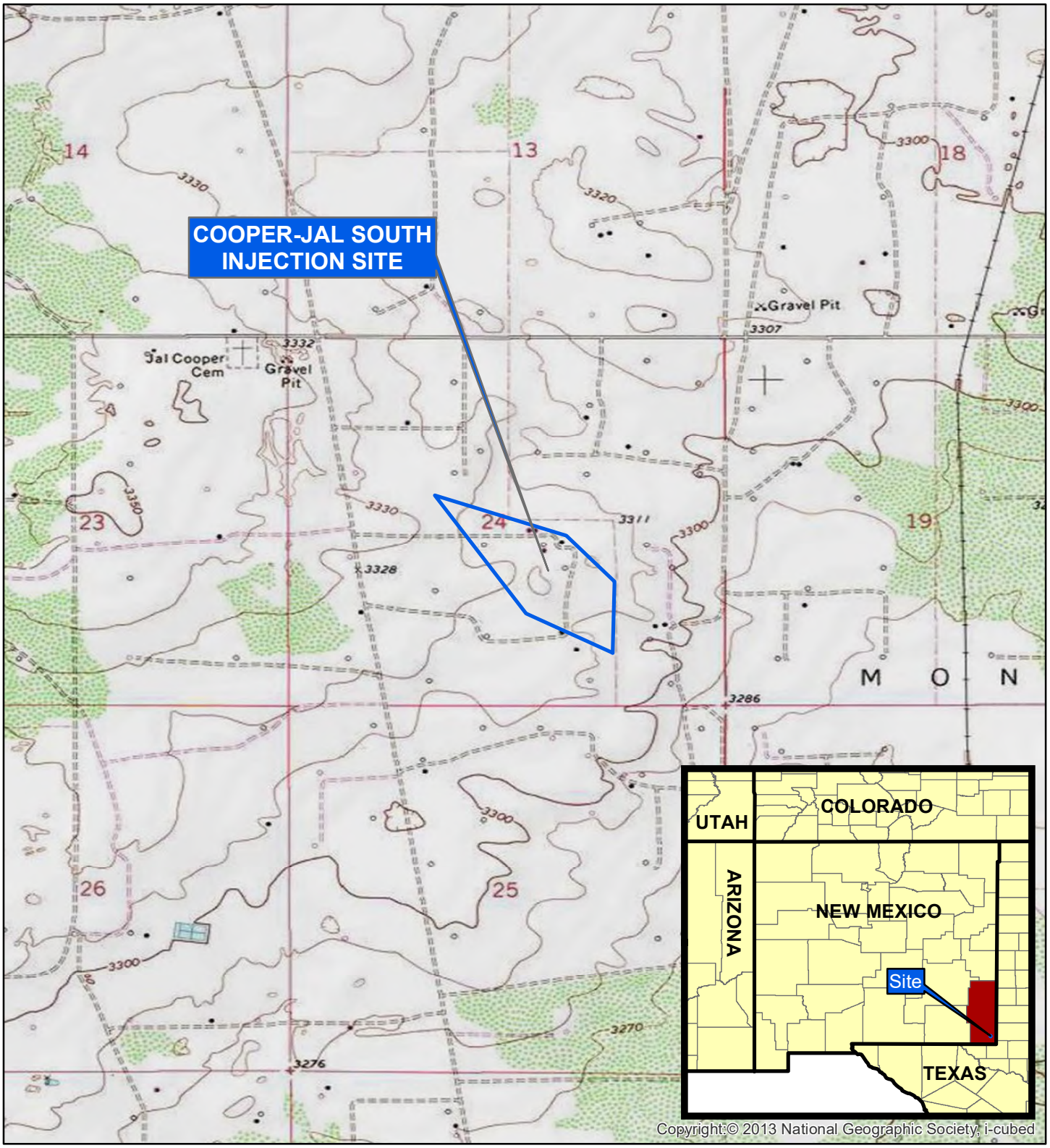
Sample ID	Sample Date	Chloride	TDS	Sulfate
NMWQCC Groundwater Standard (mg/L)		**250**	**1,000**	**600**
MW-1	6/20/2019	**1,110**	**2,510**	NS
	11/24/2019	**1,110**	**2,190**	222
MW-2	6/20/2019	**283**	960	NS
	11/23/2019	27.7	274	42
MW-2A	6/20/2019	86.5	554	NS
	11/23/2019	88	414	76.5
MW-3	6/20/2019	40	448	NS
	11/23/2019	60	352	96.6
MW-4	6/20/2019	**2,760**	**7,830**	NS
	11/24/2019	**3,050**	**5,960**	420
MW-4A	6/20/2019	**336**	**1,040**	NS
	11/24/2019	**321**	824	94.5
MW-5	6/20/2019	**1,700**	**4,280**	NS
	11/23/2019	**1,530**	**3,900**	250
MW-5A	6/20/2019	118	650	NS
	11/23/2019	116	502	61.1
MW-6R	6/20/2019	59.1	482	NS
Duplicate	6/20/2019	64.4	592	NS
	11/23/2019	69.4	384	95.2
MW-7	6/20/2019	**4,210**	**15,500**	NS
	11/24/2019	**2,080**	**6,300**	272
MW-8	6/20/2019	NS	NS	NS
	11/24/2019	12.9	239	27.6
MW-9	6/20/2019	**621**	**2,930**	NS
	11/24/2019	**337**	**1,170**	80.6
MW-9A	6/20/2019	**268**	**1,220**	NS
	11/24/2019	231	838	83.2
MW-10	6/20/2019	NS	NS	NS
	11/24/2019	230	826	78
MW-11	6/20/2019	34.4	407	NS
	11/24/2019	45.8	364	113
MW-12*	6/20/2019	**254**	580	NS
	11/23/2019	**337**	**1,010**	140
MW-14	6/20/2019	42.1	481	NS
	11/24/2019	37.1	328	94.5
Duplicate	11/24/2019	40.4	324	95.9
RW-1	6/20/2019	**9,290**	**22,100**	NS
Duplicate	6/20/2019	**9,200**	**22,800**	NS
	11/24/2019	**5,780**	**12,200**	**722**
RW-2	6/20/2019	**3,180**	**10,200 H**	NS
	11/24/2019	**3,510**	**9,880**	464
RW-2R	6/20/2019	**7,860**	**29,400**	NS
	11/24/2019	**7,720**	**21,000**	**943**

Notes:

1. Bold and colored cells indicate New Mexico Water Quality Control Commission (NMWQCC) standard exceedance.
2. NS - Not Sampled
3. Results shown in milligrams/liter (mg/L).
4. < - Analyte not detected above quantitation limit
6. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
7. ** - Indicates groundwater monitor well that was sampled prior to semiannual groundwater event via low-flow purge for internal use.

FIGURES



Legend

Site Boundary

Notes:
1. Datum: D_WGS_1984
2. Source: United States Geological Survey 7.5 Minute Quadrangle Map
3. Site Location: 32.19891, -103.21523

0 1,000 2,000 4,000 Feet

N

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

SITE LOCATION MAP

ARCADIS

FIGURE 1

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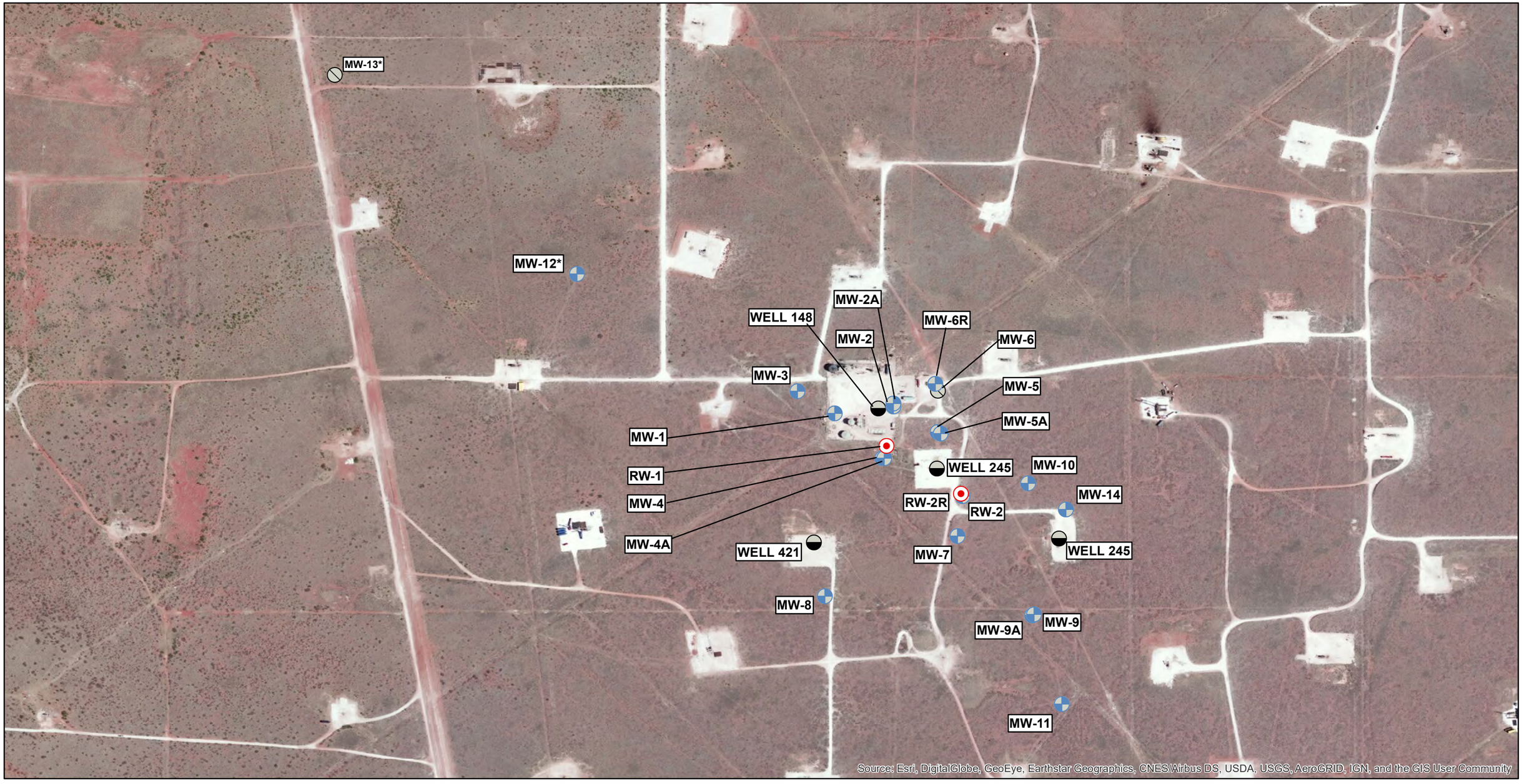

Legend

- Monitoring Well Location
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
2. Site Location: 32.19891, -103.21523

N

0 250 500 1,000 Feet

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

SITE DETAILS MAP

ARCADIS

FIGURE 2

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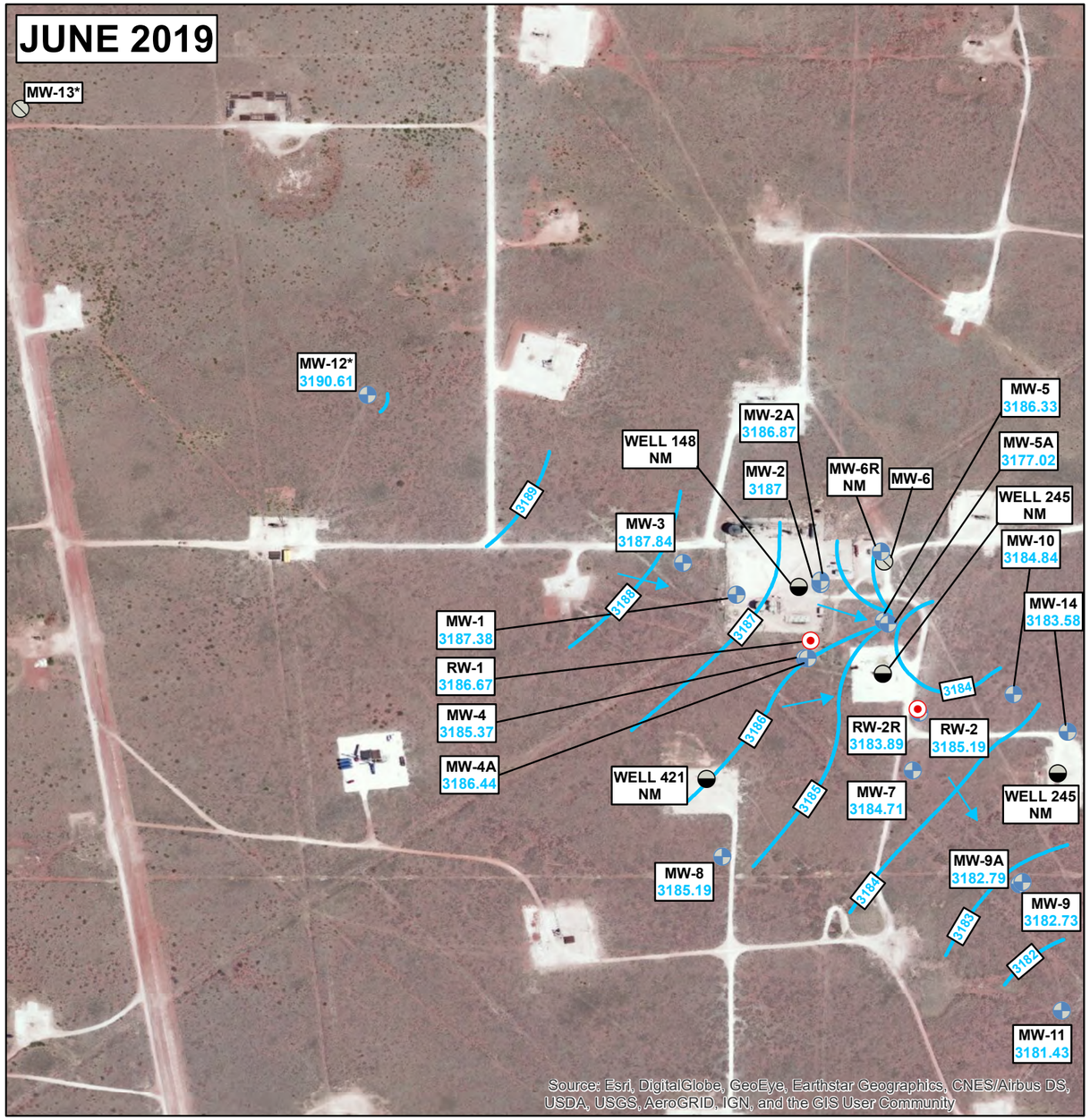

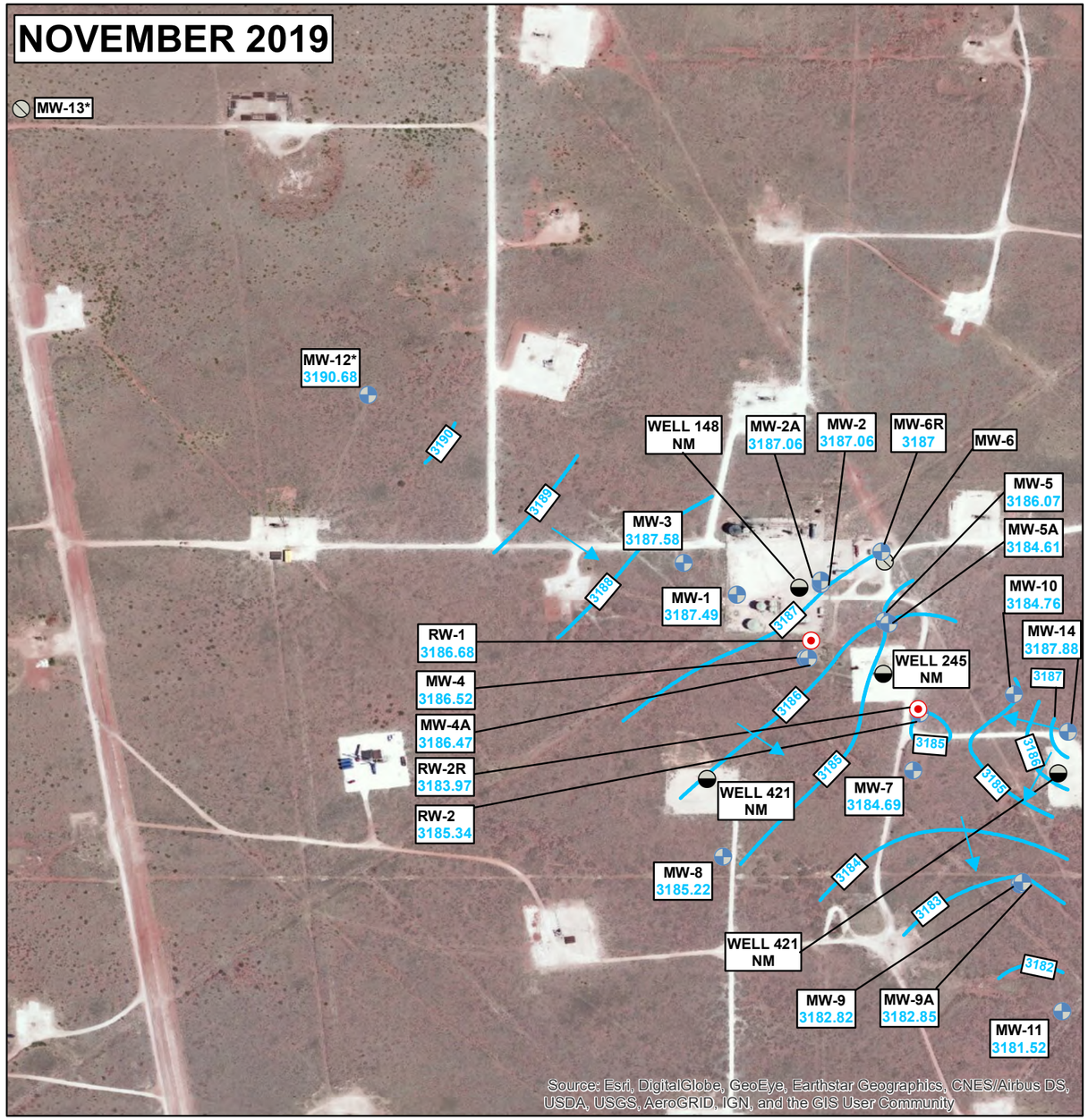

Legend

- Monitoring Well Location
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 3184 — Potentiometric Contour and Elevation
- 3182.82 — Groundwater Elevation (ft above mean sea level)
- Approximate Groundwater Flow

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NM: Not Measured

N

0 250 500 1,000 Feet

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

POTENTIOMETRIC SURFACE MAP 2019

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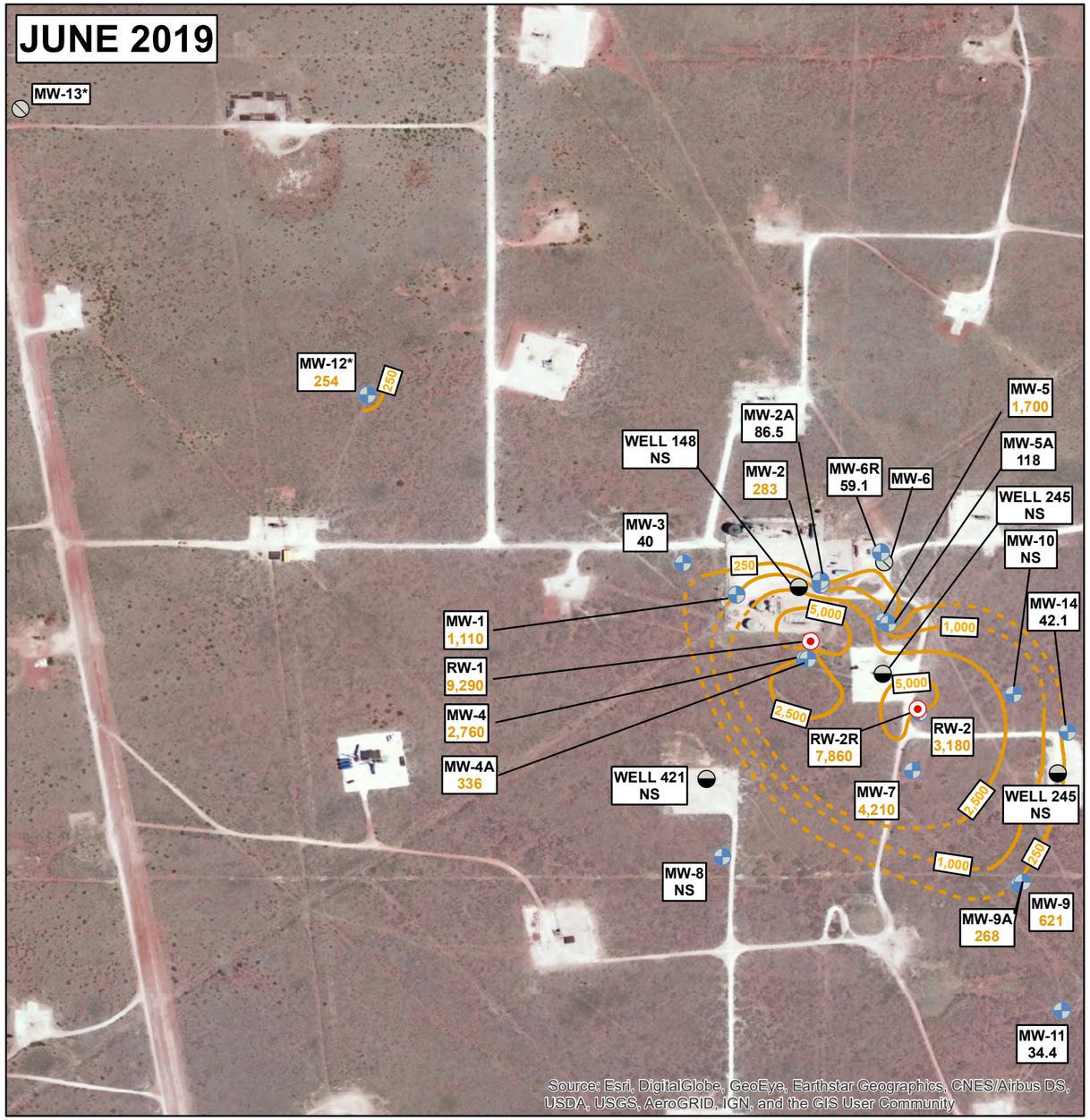
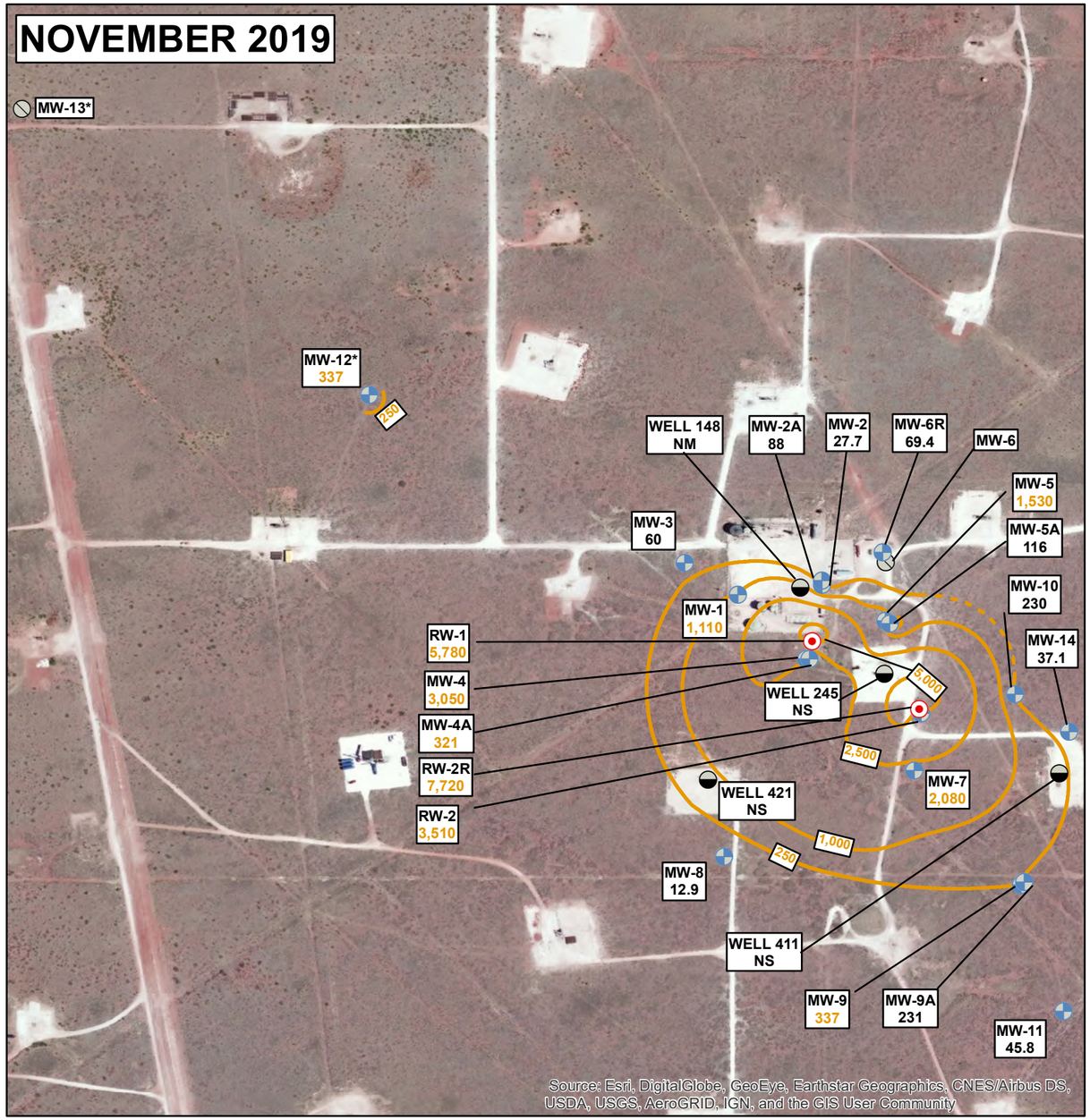
FIGURE 3





Legend

- Monitoring Well Location
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 250 — Chloride Isoconcentration Contour
- 118 — Chloride Concentration in milligrams per liter (mg/L)
- 268 — Chloride Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NS: Not Sampled

N

0 250 500 1,000 Feet

Chevron Environmental Management Company
Cooper-Jal Unit South Injection Site
Lea County, New Mexico

SEMI-ANNUAL CHLORIDE ISOCONCENTRATION MAP 2019

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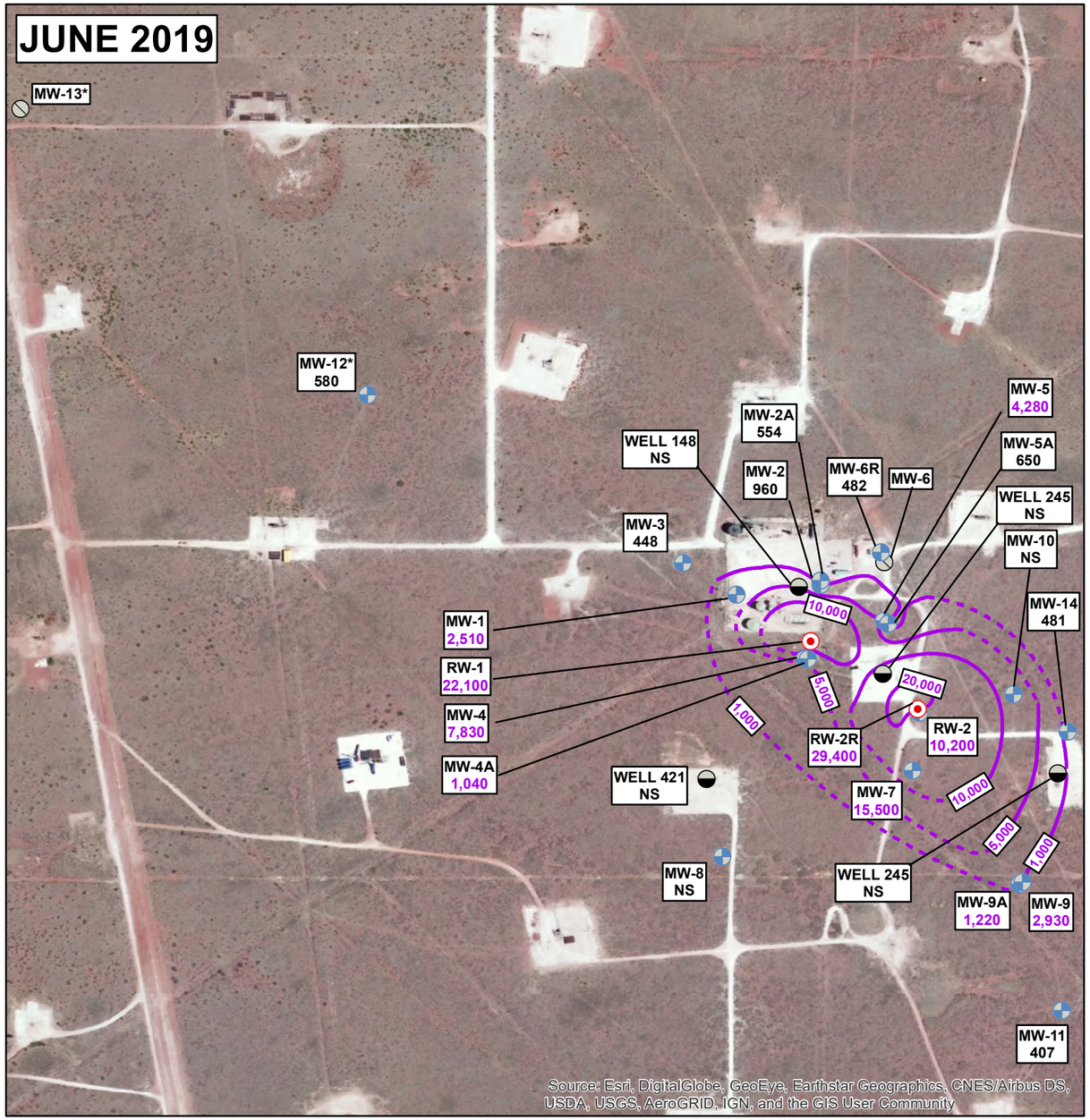
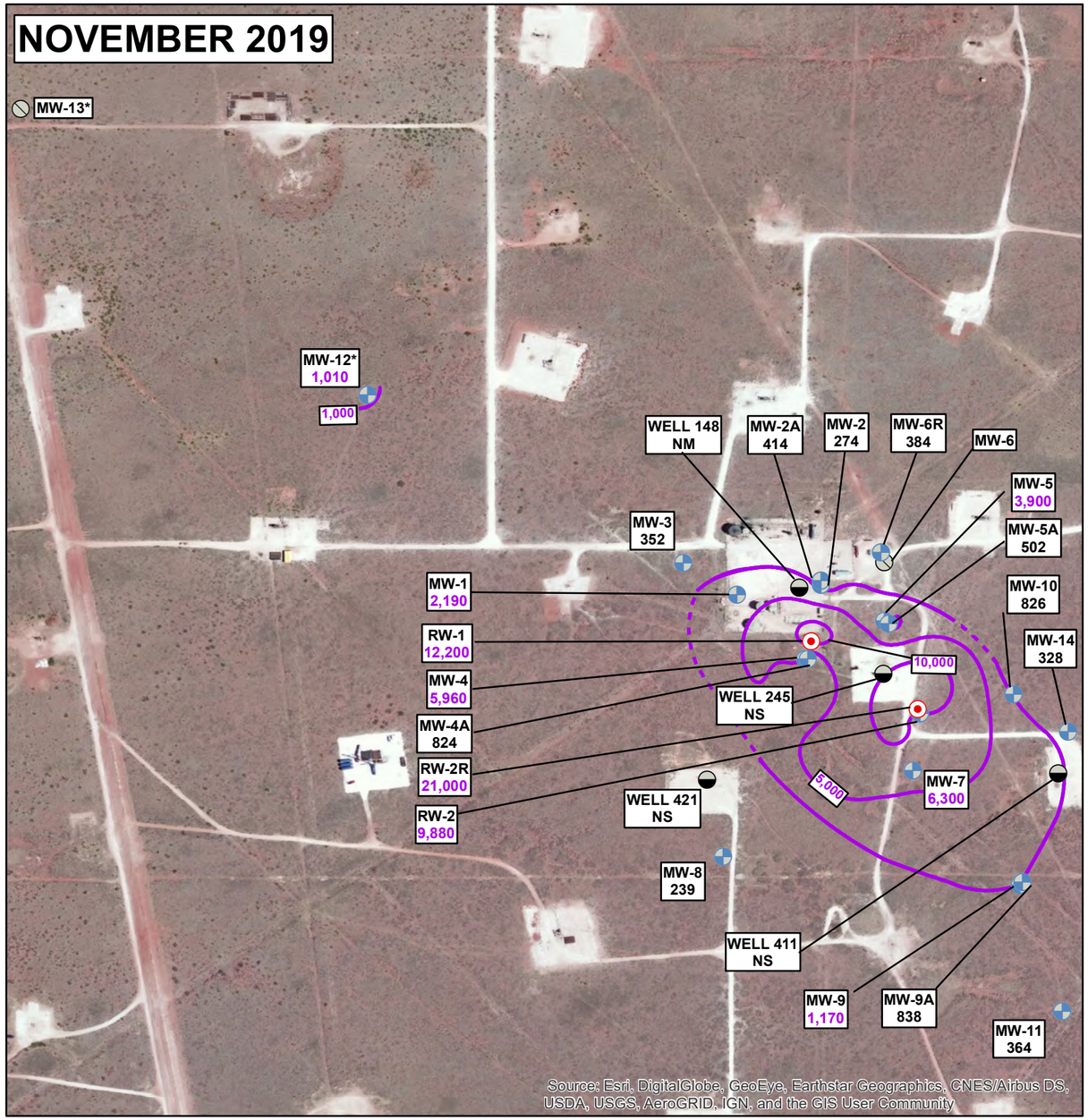
FIGURE 4

JUNE 2019



NOVEMBER 2019



Legend

- Monitoring Well Location
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 1,000 — Total Dissolved Solids (TDS) Isoconcentration Contour
- 407 — TDS Concentration in milligrams per liter (mg/L)
- 1,040 — TDS Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
3. Site Location: 32.19891, -103.21523
4. NS: Not Sampled

N

0 250 500 1,000 Feet

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Cooper-Jal Unit South Injection Site
Lea County, New Mexico

SEMI-ANNUAL TDS ISOCONCENTRATION MAP 2019

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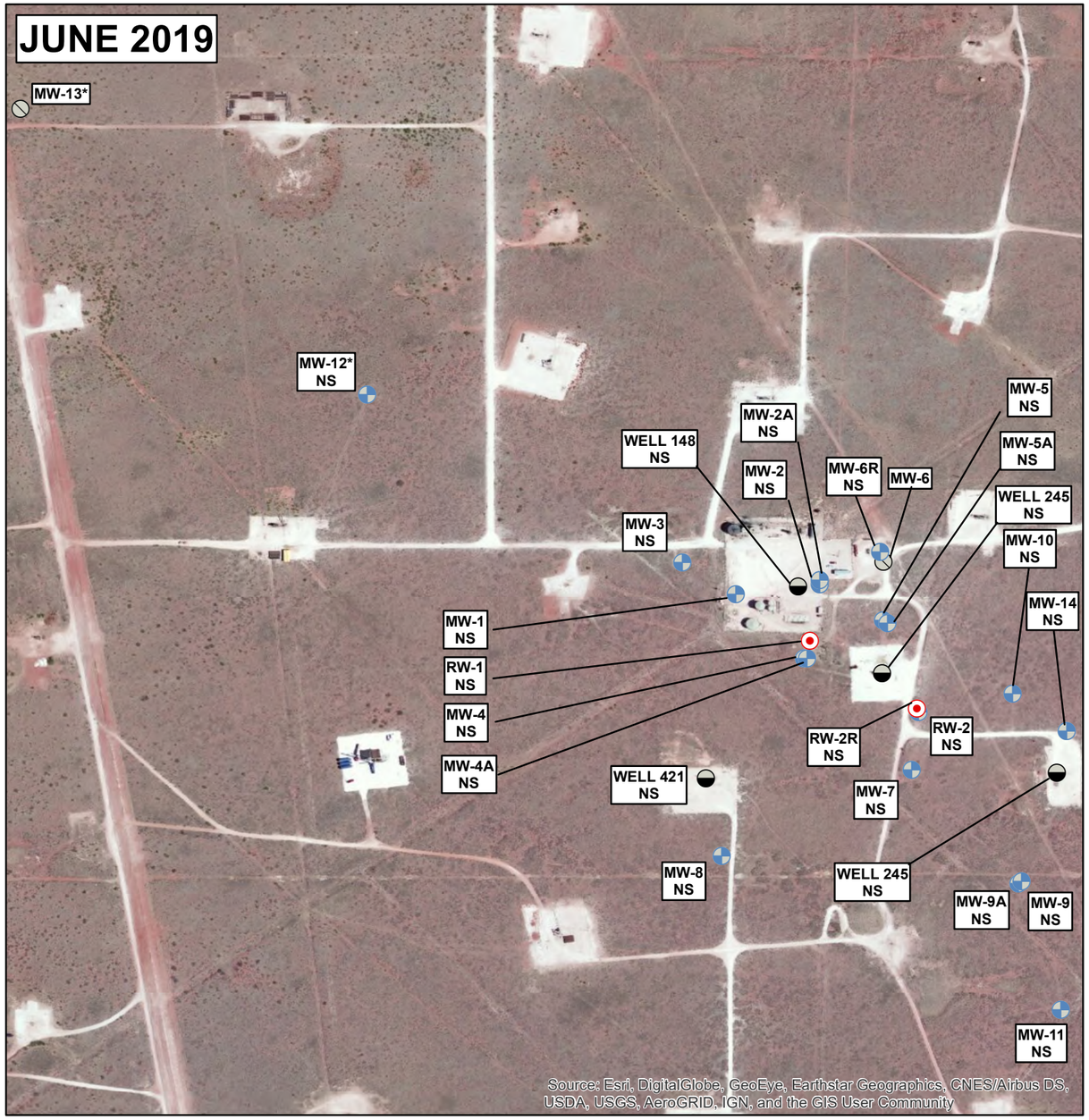
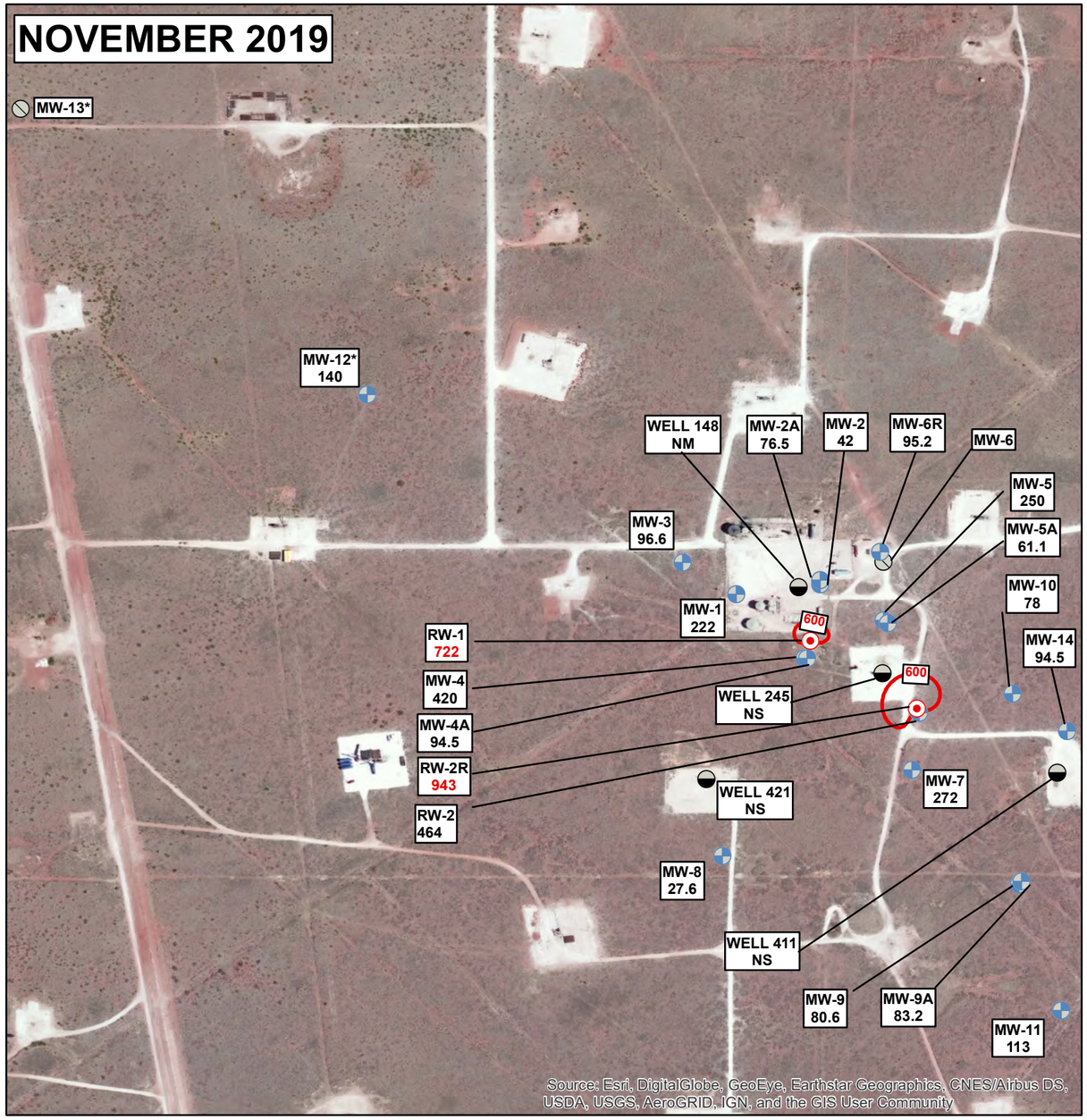
FIGURE 5





Legend

- Monitoring Well Location
- Recovery Well
- Cooper Jal Oil Well
- Plugged & Abandoned Monitoring Well
- 600 — Sulfate Isoconcentration Contour
- 464 — Sulfate Concentration in milligrams per liter (mg/L)
- 722 — Sulfate Concentration (mg/L) Exceeds NMWQCC Other Standards for Domestic Water Supply

Notes:
1. Datum: D_WGS_1984
2. Cooper Jal Oil Wells were not guaged
2. Site Location: 32.19891, -103.21523

N

0 250 500 1,000 Feet

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Cooper-Jal Unit South Injection Site
Lea County, New Mexico

SEMI-ANNUAL SULFATE ISOCONCENTRATION MAP 2019

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FIGURE 6

APPENDIX A

Site Background

REGULATORY BACKGROUND

Site assessment activities were initiated in 1993 when Environmental Spill Control, Inc. (ESCI) of Hobbs, New Mexico, performed a subsurface assessment of an unlined earthen produced water overflow pit, reportedly located adjacent to the western edge of the Site. During the investigation, five boreholes were advanced to depths ranging from 15 feet below ground surface (ft bgs) to 100 ft bgs. The investigation revealed the presence of hydrocarbon-impacted soil. In 1996, Texaco Exploration and Production, Inc. (Texaco) filed a notice of intent to close the pit with the New Mexico Oil Conservation Division (NMOCD). Approximately 1,248 cubic yards (cy) of hydrocarbon-impacted soil were removed from the pit. During the closure activities, the excavation was lined with imported clay and backfilled with imported caliche. Texaco submitted a pit closure report to the NMOCD in December 1996.

In 1997, the NMOCD requested additional assessment activities to define the vertical extent of affected soil beneath the former pit. Assessment activities performed by Highlander Environmental Corporation revealed elevated chloride concentrations in the soil. In October 1997, monitoring well MW-1 was installed near the former pit. Groundwater samples collected from the monitoring well contained chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) Human Health Standards for Groundwater (250 milligrams per liter [mg/L]). Assessment activities performed through May 1998 included the installation of 13 additional monitoring wells. In 1998, electromagnetic (EM 34) terrain conductivity surveys were completed to identify areas of elevated chloride concentrations in soil.

REGULATORY FRAMEWORK

The NMOCD of the New Mexico Energy, Minerals, and Natural Resources Department has regulatory jurisdiction over corrective actions conducted at the Site. Corrective actions follow guidance given by the NMOCD in *Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993)*. These guidelines require remediation of four constituents of concern (COCs) in groundwater to the human health standards of the NMWQCC set forth in New Mexico Administrative Code 20.6.2.3103B as follows:

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride	250
Total Dissolved Solids (TDS)	1,000
Fluoride	1.6
Sulfate (SO4)	600

Note: mg/L = milligrams per liter

The original analyte list included carbonate alkalinity, bicarbonate alkalinity, total alkalinity, nitrate-N, calcium, magnesium, potassium, sodium, chloride, TDS, fluoride, and sulfate. In a letter to the NMOCD, dated December 15, 2014, GHD, on behalf of CEMC, requested a reduction in the list of analytical parameters and a reduction in the wells included in the monitoring program. In a subsequent email, dated May 19, 2015, the NMOCD approved the reduction of the list of analyses to chloride, TDS, fluoride, and sulfate only. No wells were eliminated from the monitoring program.

GROUNDWATER SAMPLING AND ANALYSIS

Groundwater at the Site is monitored semiannually via a network of 18 monitor wells and 2 recovery wells as outlined in the *Work Plan for Plume Delineation and Modification to Proposed Groundwater Monitoring Schedule* submitted on November 18, 1998 and approved by the NMOCD on February 2, 1999. Five down gradient monitoring wells (MW-8, MW-9, MW-10, MW-11, and MW-14) were sampled during the first semi-annual monitoring event conducted on May 22, 2018. All 20 monitoring and recovery wells were sampled during the second semi-annual monitoring event performed on October 15 through 19, 2018. Semi-annual groundwater monitoring activities and annual reporting to the NMOCD for this Site have been performed by GHD (formerly Conestoga-Rovers & Associates, Inc. [CRA]) since 2005 and continued until 2018.

In June 1998, Texaco prepared a groundwater corrective action plan to mitigate chloride concentrations and to provide plume containment by extracting groundwater from the affected groundwater-bearing unit (GWBU). Between 1999 and 2013, assessment activities included the installation of wells MW-6R, MW-11 through MW-14, RW-1, RW-2, and RW-2R. Monitoring well MW-6 was plugged and abandoned in September 2013 due to a damaged well casing. Due to on-Site wells (MW-1, MW-2, MW-2A, MW-3, and MW-6) fully delineating the northern boundary of the chloride plume, monitoring well MW-13, located approximately 1,000 feet up-gradient and off-Site, was plugged and abandoned on July 11, 2017.

Historically, chloride concentrations show decreasing trends in upgradient monitor wells MW-1, MW-2, and MW-5, as shown on concentration versus date graphs in Exhibit 1A, available in the *2018 Annual Groundwater Monitoring Report*. Increasing trends have been observed since 1997 in downgradient monitor wells MW-7, MW-9, MW-9A, and MW-10, as indicated in Exhibit 1B (available in the *2018 Annual Groundwater Monitoring Report)*, although more recent data indicate that these concentrations are stabilizing with some variability, with the exception of monitor well MW-7. Similar trends are apparent in TDS and sulfate concentrations. There are no strong trends in the observed historical concentrations of fluoride. Based on current and historical concentration data, the groundwater plume at the Site is fully delineated.

Soil Boring and Monitor Well Installation

The New Mexico Office of the State Engineer (NMOSE) governs water usage in the State of New Mexico. Applications for Permits to Appropriate Groundwater were submitted by Texaco in October 1999 and were approved with specific conditions in June 2008. A total of 65 acre-feet (ac-ft) per annum from the two on-Site recovery wells (RW-1 and RW-2) was granted by the NMOSE for environmental remediation purposes. Usage of groundwater was granted by the NMOSE under well permits CP-884 (RW-2; 32.5 ac-ft per annum) and CP-885 (RW-1; 32.5 ac-ft per annum).

Due to apparent damage at RW-2 that would prevent the installation of a pump, RW-2R was installed under well permit CP-884-POD2 to replace RW-2 in 2013. An application to change the designation of RW-2 from a recovery well to a monitoring well was submitted on December 16, 2016. This was done to allow the well to remain in the monitoring well network instead of being plugged and abandoned. The change was conditionally approved, pending further assessment of the well integrity, by the NMOSE in a phone conversation on January 9, 2017. On February 10, 2017, GHD further assessed RW-2 and found the annular seal to be compliant with New Mexico Administrative Code (NMAC) 19.27.4.30 Regulations and the well casing and well pad to be in good condition. These findings were documented in a letter sent

to the NMOSE on February 16, 2017. Based on GHD's reported understanding of the January 9, 2017, conversation, RW-2 is now designated as a monitoring well.

To date, neither RW-1 nor RW-2R have been equipped for groundwater recovery. Notifications to NMOSE will be submitted if these wells become equipped in the future. Until each well is permanently equipped, an Extension of Time (EOT) request will be sent to the NMOSE. An EOT was received by NMOSE on April 23, 2018. The request was approved in written correspondence and extended through April 30, 2020.

GEOLOGY/HYDROGEOLOGY ASSESSMENT

Site Setting

The Site is located on Lea County Road J7, approximately five and a half miles northwest of Jal, New Mexico, in Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. The latitude and longitude coordinates of the Site are 32° 12' 7.13" N and 103° 13' 4.36" W.

Land in the vicinity of the Site is utilized primarily for livestock ranching and oil and gas production, and production and has areas of undeveloped rangeland vegetated with indigenous grass. An injection well facility, operated by Resaca Resources, LLC (Resaca), is located adjacent to the Site. No active Chevron U.S.A. Inc. (Chevron) operations are present in the area.

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 October 2013 GHD field work and logs from previous groundwater assessments. The locations of the soil borings and monitoring wells are shown on Figure 2. The subsurface stratigraphy typically included the following:

- A thick sand (0 to 163 feet) layer of unconsolidated fine sand containing trace caliche nodules. Sand grains gradually increasing to fine to medium grained at 140 feet,
- A fine sand layer typically ranging from 3 feet to 30 feet,
- A sandy clay layer typically ranging from 2 feet to 11 feet directly above the upper Dockum "redbeds",
- Red and gray weathered shale and mudstone "redbeds" of the Triassic Dockum Group that form the underlying confining layer.

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 140 to 190 ft bgs, based on the groundwater monitoring event conducted in June/November 2019. 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 with an average horizontal hydraulic gradient of approximately 0.0169 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 an electronic interface 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™. Geochemical water quality parameters (pH, temperature, and conductivity) were recorded at the sampling depth. 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 chloride and sulfate by Environmental Protection Agency (EPA) Method 300.0 and total dissolved solids (TDS) by SM 2540C.

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification MW-1 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 171.17 Measuring Point TOC Depth to water 134.56

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 ~~Chevron Fuller~~ Caper Jal Project Number ~~B0047270.0007~~

Well Identification MW-2 Inspection Date 10/13/19 Inspector LR

Measured Well Depth 108.39 Measuring Point TOC Depth to water 134.27

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-2A Inspection Date 06/13/19 Inspector LB

Measured Well Depth 142.47 Measuring Point TOC Depth to water 134.43

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-3 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 171.93 Measuring Point TOC Depth to water 132.24

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~~ Cooper Jal Project Number B0047270.0007

Well Identification MW-4 Inspection Date 01/13/19 Inspector LB

Measured Well Depth 141.81 Measuring Point TOC Depth to water 135.21

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-4A Inspection Date 4/13/19 Inspector LB

Measured Well Depth 145.55 Measuring Point TOC Depth to water 134.98

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~~ Casper Jail Project Number ~~B0047270.0007~~

Well Identification MW - 5 Inspection Date 11/13/19 Inspector LB

Measured Well Depth 173.72 Measuring Point TOC Depth to water 136.65

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 Deep Jal Chevron Fuller Project Number B0047270.0007

Well Identification [illegible]-5A Inspection Date 11/13/19 Inspector LB

Measured Well Depth 114.05 Measuring Point TC Depth to water 96.71

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~~ Cooper Jal Project Number B0047270.0007

Well Identification MW-7 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 162.60 Measuring Point TOC Depth to water 135.46

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: something in well when ~~checking~~ tagging conductivity probe.

Well Inspection Checklist and Reporting Form

Site Name/ Location ~~Chevron Fuller~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-8 Inspection Date ~~TOC~~ de 1/13/19 Inspector LB

Measured Well Depth 146.85 Measuring Point TOC Depth to water 133.87

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: obstruction @ 136', Old Hydrasleeve was pulled out prior to sampling.

Well Inspection Checklist and Reporting Form

Site Name/ Location ~~Chevron Fuller~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-9 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 161.46 Measuring Point TOC Depth to water 131.95

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 Cooper Jal Chevron Fuller Project Number B0047270.0007

Well Identification MW-9A Inspection Date 06/13/19 Inspector LB

Measured Well Depth 141.72 Measuring Point TOC Depth to water 131.69

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 (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification MW-1D Inspection Date 06/13/19 Inspector LR

Measured Well Depth 160.72 Measuring Point TOC Depth to water 136.28

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: something in well, can't get hydrawleeve.

Well Inspection Checklist and Reporting Form

Site Name/ Location ~~Chevron Fuller~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-11 Inspection Date 06/13/19 Inspector LR

Measured Well Depth 165.71 Measuring Point TOC Depth to water 136.13

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~~ Casper Jail Project Number ~~B0047270.0007~~

Well Identification MW-12 Inspection Date 6/13/19 Inspector LB

Measured Well Depth 171.02 Measuring Point TOC Depth to water 139.72

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 ~~Chevron Fuller~~ Cooper Jal Project Number B0047270.0007

Well Identification MW-14 Inspection Date 12/13/19 Inspector LB

Measured Well Depth 173.74 Measuring Point TOC Depth to water 134.38

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 (Leaper Jail) Project Number B0047270.0007

Well Identification RW-1 Inspection Date 11/13/19 Inspector LR

Measured Well Depth 164.03 Measuring Point TOC Depth to water 133.64

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~~ Cooper Jail Project Number ~~B0047270.0007~~

Well Identification MW-2 Inspection Date 4/12/19 Inspector LB

Measured Well Depth 150.50 Measuring Point TOC Depth to water 135.23

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 (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification RW-2R Inspection Date 4/17/19 Inspector LB

Measured Well Depth 176.82 Measuring Point TOC Depth to water 136.79

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: Cooper Jal
Well Identification: MW-1
Static Water Level: 134.56
Stop Time:

Date: 11/14/19
Personnel: JL / LB
Total Depth: 171.14
Start Time:

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.126	20.13
136	1.115	19.80
138	1.113	19.85
140	1.113	19.84
142	1.113	19.84
144	1.115	19.25
146	1.116	19.25
148	1.122	19.25
150	1.162	19.26
152	1.812	19.27
154	3.536	19.27
156	4.100	19.26
158	4.174	19.29
160	4.210	19.80
162	4.221	19.81
164	4.266	19.81
166	4.604	19.87
168	4.827	19.85

Well Conductivity Profile Field data Sheet

Site Name: Leeper Jal
Well Identification: MW-2
Static Water Level: 134.27
Stop Time: 1058

Date: 11/13/19
Personnel: JL / LB
Total Depth: 168.39
Start Time: 1041

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.312	20.51
136	0.310	20.30
138	0.318	20.16
140	0.348	20.13
142	0.389	20.13
144	0.415	20.13
146	0.452	20.13
148	0.467	20.14
150	0.474	20.14
152	0.480	20.15
154	0.488	20.16
156	0.490	20.17
158	0.499	20.17
160	0.507	20.18
162	0.575	20.19
164	1.116	20.20
* 166	1.714	20.21
~~168~~ LB		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-44
Static Water Level: 134.43
Stop Time: 1036

Date: 11/13/19
Personnel: JL / LB
Total Depth: 142.47
Start Time: 1030

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.773	20.41
136	0.762	20.38
138	0.762	20.18
140	0.768	20.12

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-3
Static Water Level: 132.24
Stop Time: 1107

Date: 04/13/19
Personnel: JL/LB
Total Depth: ~~132~~. 171.93
Start Time: 1100

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
132	0.1635	20.25
134	0.1632	20.07
136	0.1624	19.91
138	0.1628	19.83
140	0.1627	19.82
142	0.1626	19.81
144	0.1626	19.81
146	0.1627	19.81
148	0.1627	19.81
150	0.1627	19.81
152	0.1627	19.82
154	0.1629	19.82
156	0.1627	19.82
158	0.1629	19.83
160	0.1627	19.83
162	0.1627	19.84
* 164	0.1627	19.84
166	0.1626	19.85
168	0.1625	19.85
170	0.1624	19.87
172	0.1648	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4
Static Water Level: 135.21
Stop Time: 3:21 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 171.81
Start Time: 3:15 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	10.353	20.101
138	10.343	20.42
140	10.310	20.10
142	10.326	20.09
144	10.424	20.08
146	10.999	20.07
148	7.910	20.06
150	9.034	20.06
152	10.03	20.06
154	10.108	20.06
156	11.00	20.06
158	13.31	20.07
160	15.37	20.07
162	19.49	20.07
164	~~24.20~~ 24.20	20.07
166	35.20	20.08
168	38.83	20.08
170	39.50	20.08
172	39.82	20.11

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4A
Static Water Level: 134.98
Stop Time: 3:10 pm

Date: 06/13/14
Personnel: JL / LB
Total Depth: 145.55
Start Time: 3:00 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.508	20.72
136	1.502	20.63
136	1.502	20.24
140	1.519	20.11
* 142	1.742	20.08

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal

Well Identification: MW-5

Static Water Level: 136.65

Stop Time: 0827

Date: 11/13/19

Personnel: JL / LB

Total Depth: 173.72

Start Time: 0756

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	5.315	20.14 F
138	5.304	20.24
140	5.302	20.20
142	5.302	20.18
144	5.303	20.17
146	5.301	20.17
148	5.301	20.17
150	5.302	20.17
152	5.303	20.15
154	5.300	20.15
156	5.301	20.19
158	5.301	20.18
160	5.304	20.19
162	5.303	20.19
164	5.311	20.20
166	5.378	20.20
168	5.375	20.20
170	6.375	20.20
* 172	10.32	20.24

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-5R
Static Water Level: 136.74
Stop Time: 0842

Date: 08/13/19
Personnel: JL / LR
Total Depth: 144.05
Start Time: 0832

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.982	20.26
136	0.977	20.26
140	0.971	20.20
142	0.970	20.18
~~144.05~~		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-7
Static Water Level: 135.48
Stop Time: 0115 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 162.60
Start Time: 0104 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	5.234	20.19
138	5.227	20.166
140	5.236	20.48
142	5.384	20.24
144	5.731	20.17
146	6.167	20.15
148	6.876	20.15
150	7.789	20.14
152	8.715	20.14
154	9.779	20.14
156	11.09	20.14
* 158	11.42	20.14
Something in well preventing probe from going		
total depth		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-8
Static Water Level: 133.67
Stop Time: 1128

Date: OCT 13 19
Personnel: JL / LB
Total Depth: 146.85
Start Time: 1126

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.452	20.62
136	0.448	20.23
138	BL / A	
140		
142		
144		
146		
	Could not go past	
	138' w/ conductivity	
	probe due to	
	blockage	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-9
Static Water Level: 131.95
Stop Time: 1240

Date: 06/13/19
Personnel: JL / LB
Total Depth: 161.46
Start Time: 1235

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
132	1.430	20.160
134	1.433	20.124
136	1.475	20.121
138	1.560	20.119
140	1.752	20.118
142	2.110	20.117
144	2.416	20.117
146	2.599	20.116
148	2.674	20.116
150	2.754	20.116
152	2.838	20.116
154	2.857	20.116
156	2.854	20.116
158	2.849	20.116
160	2.460	20.116

Well Conductivity Profile Field data Sheet

Site Name: Caper Jal
Date: 06/13/19
Well Identification: MW-4A
Personnel: JL / LB
Static Water Level: 131.69
Total Depth: 141.72
Stop Time: 1232
Start Time: 1228

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
130	0.695	20.35
132	1.269	20.24
134	1.750	20.20
* 136	2.254	20.20

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-10
Static Water Level: 136.28
Stop Time: 2:38 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 160.72
Start Time: 2:34 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.180	20.07
136	1.201	20.55
140	1.255	20.27
142	1.279	20.20
* bubble in well; can't get hydrasleeve		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-11
Static Water Level: 130.13
Stop Time: 1156

Date: 06/13/19
Personnel: JL / LB
Total Depth: 165.71
Start Time: 1150

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
130	0.600	20.52
132	0.597	20.31
134	0.597	20.20
136	0.596	20.14
138	0.596	20.18
140	0.596	20.18
142	0.596	20.17
144	0.596	20.17
146	0.596	20.16
146	0.598	20.17
150	0.600	20.17
152	0.603	20.16
154	0.607	20.17
156	0.611	20.16
158	0.617	20.17
160	0.622	20.17
162	0.626	20.17
164	0.630	20.17
166	0.632	20.18

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-12
Static Water Level: 139.92
Stop Time: 1047

Date: 06/13/19
Personnel: JL/LB
Total Depth: 171.02
Start Time: 1040

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
140	1.078	20.07
142	1.069	20.36
144	1.044	20.27
146	1.129	20.23
148	1.178	20.21
150	1.296	20.20
152	1.274	20.19
154	1.355	20.19
156	1.389	20.18
158	1.426	20.18
160	1.495	20.18
162	1.514	20.18
164	1.514	20.18
166	1.519	20.18
168	1.521	20.18
170	1.350	20.23

Well Conductivity Profile Field data Sheet

Site Name: Leeper Jal
Well Identification: WWD-14
Static Water Level: 134.38
Stop Time: 1:33 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 173.74
Start Time: 1:22 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.1640	20.26
136	0.1626	20.19
138	0.1623	20.19
140	0.1623	20.07
142	0.1623	20.07
144	0.1623	20.07
146	0.1624	20.07
148	0.1624	20.07
150	0.1624	20.07
152	0.1623	20.07
154	0.1623	20.07
156	0.1623	20.07
158	0.1622	20.07
160	0.1623	20.07
162	0.1626	20.08
164	0.1645	20.08
166	0.1646	20.09
168	0.1649	20.10
170	0.1644	20.10
172	0.1647	20.11

Well Conductivity Profile Field data Sheet

Site Name: Culpeper Jet
Well Identification: RW-1
Static Water Level: 133.04
Stop Time: 3:45 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 164.03
Start Time: 3:35 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.336	20.36
136	1.336	20.11
138	1.326	20.06
140	1.330	20.05
142	1.367	20.05
144	1.687	20.04
146	1.991	20.04
148	2.997	20.04
150	7.998	20.04
152	15.70	20.05
154	23.106	20.05
156	27.52	20.06
158	27.87	20.06
160	27.94	20.07
162	27.95	20.07
164	27.95	20.07

Well Conductivity Profile Field data Sheet

Site Name: Culp or Jal
Well Identification: ~~AA6~~ KW 2
Static Water Level: 135.23
Stop Time: 1:51 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 156.50
Start Time: 1:45 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.624	20.37
138	1.6067	20.20
140	1.997	20.16
142	2.336	20.17
144	2.423	20.16
146	2.439	20.16
148	3.957	20.16
150	10.50	20.16
152	14.20	20.16
154	16.18	20.16
156	14.53	20.19
158	14.52	20.20
160	14.52	20.20

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: RW-2R
Static Water Level: 136.79
Stop Time: 2:21 pm

Date: 04/13/19
Personnel: JL / LB
Total Depth: 176.82
Start Time: 2:15 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.479	20.42
138	1.483	20.33
140	1.747	20.22
142	5.598	20.21
144	13.41	20.17
146	17.19	20.18
148	18.95	20.18
150	20.13	20.18
152	20.34	20.18
154	20.40	20.18
156	20.44	20.18
158	20.47	20.18
160	20.49	20.18
162	20.50	20.18
164	20.52	20.19
166	20.61	20.19
168	20.60	20.19
170	20.92	20.19
172	20.99	20.20
174	21.01	20.20
176	20.54	20.21

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-6R
Static Water Level: 136.15
Stop Time: 1005

Date: 06/19/19
Personnel: CB/JL
Total Depth: 174.02
Start Time: 0936

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	0.707	20.04
138	0.705	20.07
140	0.704	20.05
142	0.703	20.04
144	0.703	20.03
146	0.704	20.03
148	0.703	20.03
150	0.704	20.03
152	0.704	20.03
154	0.704	20.03
156	0.706	20.04
158	0.707	20.04
160	0.708	20.05
162	0.708	20.05
164	0.707	20.05
166	0.706	20.05
168	0.704	20.05
170	0.703	20.06
172	0.723	20.07
174	0.709	20.08
* 176	0.947	20.09
~~178~~	~~0.947 LR~~	

ARCADIS

Micropurge Sampling Log

Project: CVX HEU Transfer

Project No. _____

Page 1 of 1

Site Location: Eddy Co NM

Date 6/20/19

Site/Well No. MW-1

Replicate No. _____

Code No. _____

Weather: Hot, sunny

Sampling Time: Begin 9:35 am End 9:38 am

Evacuation Data

Sounded Well Depth (ft bmp) 171.17

Depth to Water (ft bmp) 134.56

Gallons Pumped/Bailed Prior to Sampling Full Hydrasleeve

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method Hydrasleeve

Field Parameters

Color Clear and not

Odor _____

Appearance Sediment @ bottom, 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	Turbidity (NTU)		
9:30 am	—	—	2.30	173.0	7.32	20.49	3,941	—		

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	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams 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: Cooper Jal

Date 6/20/19

Site/Well No. MW-2

Replicate No.

Code No.

Weather: Hot / sunny

Sampling Time: Begin 9:47 End 9:47

Evacuation Data

Sounded Well Depth (ft bmp) 168.39

Depth to Water (ft bmp) 134.27

Gallons Pumped/Bailed Prior to Sampling FULL MICROSLEEVE

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi)

Purge Time Begin End

Pumping Rate (gpm)

Evacuation Method MICROSLEEVE

Field Parameters

Color Clear / 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 ©	COND ( )	Turbidity (NTU)		
9:49am	—	—	2.86	146.7	7.38	21.21	1.121	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HEU Trunster | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 04/20/19

Site/Well No. MW - 2A | Replicate No. | Code No.

Weather: HOT, SUNNY | Sampling Time: Begin 9:44 End 9:44

Evacuation Data

Sounded Well Depth (ft bmp): 142.47

Depth to Water (ft bmp): 134.43

Gallons Pumped/Bailed Prior to Sampling: FULL HydraSleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ____ End ____

Pumping Rate (gpm):

Evacuation Method: HydraSleeve

Field Parameters

Color: Clear / 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 ©	COND ( )	Turbidity (NTU)		
9:44am	—	—	2.42	147.1	7.71	20.88	6.743	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HEN TRANSFER | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 6/20/19

Site/Well No. MW-3 | Replicate No. | Code No.

Weather: HOT, SUNNY | Sampling Time: Begin 9:32 am | End 9:32 am

Evacuation Data

Sounded Well Depth (ft bmp): 171.93

Depth to Water (ft bmp): 132.24

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

Field Parameters

Color: —

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 ©	COND ( )	Turbidity (NTU)		
9:32am	—	—	2.43	168.0	7.69	20.60	0.633	—		

Constituents Sampled	Container Description	Number	Preservative

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

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Micropurge Sampling Log

Project: CVX HEU Transfer

Site Location: Lower Jal

Site/Well No. MW-4

Weather: Hot, cloudy

Project No. —

Replicate No. —

Sampling Time: Begin 10:22 am End 10:22

Page 1 of 1

Date 06/20/19

Code No. —

Evacuation Data

Sounded Well Depth (ft bmp) 171.81

Depth to Water (ft bmp) 135.21

Gallons Pumped/Bailed Prior to Sampling FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi)

Purge Time Begin — End —

Pumping Rate (gpm)

Evacuation Method HYDRASLEEVE

Field Parameters

Color tan

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)		
10:22am	—	—	1.13	1108.4	7.18	21.57	9.462	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HEN Transfer | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 06/20/19

Site/Well No. MW-4A | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:24 End 10:24

Evacuation Data

Sounded Well Depth (ft bmp): 145.55

Depth to Water (ft bmp): 134.98

Gallons Pumped/Bailed Prior to Sampling: Full Hydrawell

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrawell

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 ©	COND ( )	Turbidity (NTU)		
10:24	—	—	1.45	134.5	7.99	21.64	1.827	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams 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: Lea County, NM | Date 6/20/19

Site/Well No. MW-5 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:05 am | End 10:05 am

Evacuation Data

Sounded Well Depth (ft bmp): 173.92

Depth to Water (ft bmp): 136.65

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL / LM

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND	Turbidity (NTU)		
10:05 am	—	—	1.03	161.3	7.00	21.46	5.174	—		

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	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams 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: Cooper, NM | Date 6/20/19

Site/Well No. MW-JA | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:08 | End 10:08

Evacuation Data

Sounded Well Depth (ft bmp): 1414.05

Depth to Water (ft bmp): 176.71

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: Hydrasleeve

Field Parameters

Color: rust, clear

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 ©	COND ( )	Turbidity (NTU)		
10:08 am	—	—	2.37	146.7	7.51	21.54	0.811	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HFS Treatment | Project No. | Page 1 of 1

Site Location: Cooper 1a1 | Date 6/20/19

Site/Well No. MW-7 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:20 End 11:20

Evacuation Data

Sounded Well Depth (ft bmp): 162.00

Depth to Water (ft bmp): 135.48

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

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 ©	COND ( )	Turbidity (NTU)		
11:20 am	—	—	0.86	189.5	6.88	21.70	11.41	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens 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	miligrams 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: Upper Jal Date 06/20/19

Site/Well No. MW-8 Replicate No. ______ Code No. ______

Weather: Hot, Sunny Sampling Time: Begin ______ End ______

Evacuation Data

Sounded Well Depth (ft bmp) 144.85

Depth to Water (ft bmp) 133.07

Gallons Pumped/Bailed Prior to Sampling N/A

Sample Pump Intake Depth (ft bmp) ______

Sample Pump controller Settings (cpm/psi) ______

Purge Time Begin ______ End ______

Pumping Rate (gpm) ______

Evacuation Method ______

Field Parameters

Color N/A

Odor ______

Appearance ______

*IRON, ferrous ______

*SULFIDES ______

Data Frame ______

Remarks ______

Sampling Personnel JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
no sample collected, unable to lower YSI due to blockage										

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HTU Transfer | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 6/20/19

Site/Well No. MW-9 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:30am End 11:30

Evacuation Data

Sounded Well Depth (ft bmp): 161.46

Depth to Water (ft bmp): 131.95

Gallons Pumped/Bailed Prior to Sampling: Full Hydrostress

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrostress

Field Parameters

Color: tan

Odor: —

Appearance: cloudy

*IRON, ferrous: N/A

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL / LR

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND	Turbidity NTU		
11:30am	—	—	1.73	169.4	7.26	22.48	2.297	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
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 HCV Transfer | Project No. | Page 1 of 1

Site Location: Hobbs, NM | Date 6/20/19

Site/Well No. MW-9A | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:34 End 11:34

Evacuation Data

Sounded Well Depth (ft bmp): 141.72

Depth to Water (ft bmp): 131.69

Gallons Pumped/Bailed Prior to Sampling: Full Hydrosleeve

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi): N/A

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrosleeve

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 ©	COND	Turbidity (NTU)		
11:34am	—	—	1.083	168.4	7.33	22.74	1.247	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens 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	miligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS

Micropurge Sampling Log

Project: CVX HEV Transfer | Project No. | Page 1 of 1

Site Location: Eddy Co. | Date 06/20/19

Site/Well No. MW-10 | Replicate No. | Code No.

Weather: Hot, cloudy | Sampling Time: Begin | End

Evacuation Data

Sounded Well Depth (ft bmp): 160.72

Depth to Water (ft bmp): 130.25

Gallons Pumped/Bailed Prior to Sampling: N/A

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method:

Field Parameters

Color: N/A

Odor:

Appearance:

*IRON, ferrous:

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
no sample collected, unable to lower YSI down to bladder										

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	milivolts
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 Transition | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 06/10/19

Site/Well No. MW-11 | Replicate No. — | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:41 | End 11:41

Evacuation Data

Sounded Well Depth (ft bmp): 165.71

Depth to Water (ft bmp): 130.13

Gallons Pumped/Bailed Prior to Sampling: Full Hydrostleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrostleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES: W

Data Frame:

Remarks: FB-1 Collected at 12:50 pm.

Sampling Personnel: JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (C)	COND ( )	Turbidity (NTU)		
11:41am	—	—	2.13	172.2	7.68	21.51	0.625	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams 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: Cooper Jal | Date 06/20/19

Site/Well No. MW-12 | Replicate No. — | Code No. _____

Weather: HOT, SUNNY | Sampling Time: Begin 8:52 am | End 8:52 am

Evacuation Data

Sounded Well Depth (ft bmp): 171.02

Depth to Water (ft bmp): 119.72

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRAULEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi): _____

Purge Time: Begin _____ End _____

Pumping Rate (gpm): _____

Evacuation Method: HYDRAULEVE

Field Parameters

Color: —

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 ©	COND ( )	Turbidity (NTU)		
8:52 am	—	—	2.35	192.1	8.23	20.58	1.226	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX MEU Transfer | Project No. | Page 1 of 1

Site Location: Eddy Co, NM | Date 10/20/19

Site/Well No. MW-14 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:05 | End 11:05 am

Evacuation Data

Sounded Well Depth (ft bmp): 178.74

Depth to Water (ft bmp): 134.75

Gallons Pumped/Bailed Prior to Sampling: Full hydrosleeve

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi): N/A

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: Hydrosleeve

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 ©	COND ( )	Turbidity (NTU)		
11:05 am	—	—	1.46	146.2	8.21	20.24	0.714	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: LVX HTU Transfer | Project No. ______ | Page 1 of 1

Site Location: [illegible] | Date 4/20/19

Site/Well No. RW-1 | Replicate No. Dup-2 | Code No. ______

Weather: Hot, sunny | Sampling Time: Begin 10:14am | End 10:14am

Evacuation Data

Sounded Well Depth (ft bmp): 164.03

Depth to Water (ft bmp): 133.64

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time Begin ______ End ______

Pumping Rate (gpm):

Evacuation Method: Hydrasleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES: ↓

Data Frame: ↓

Remarks: Dup-2 taken at 10:16 am

Sampling Personnel: JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
10:14am	—	—	0.83	193.6	6.57	21.31	24.20	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens 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	miligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS

Micropurge Sampling Log

Project: CVX HEC Transfer | Project No. | Page 1 of 1

Site Location: Lower Jal | Date 6/20/19

Site/Well No. HW-2 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:07 | End 11:51

Evacuation Data

Sounded Well Depth (ft bmp): 156.50

Depth to Water (ft bmp): 135.23

Gallons Pumped/Bailed Prior to Sampling: FULL Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: Hydrasleeve

Field Parameters

Color: clear

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 ©	COND ( )	Turbidity (NTU)		
10:57am	—	—	0.99	1865	8.16	21.99	9.319	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
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 ~~HYDROCARBON~~ Transfer Project No. _____ Page 1 of 1

Site Location: Cooper Jal Date 6/20/19

Site/Well No. MW - 6R Replicate No. Dup - 1 Code No. _____

Weather: Hot, Windy Sampling Time: Begin 9:53 am End 9:53

Evacuation Data

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time: Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method: Hydrasleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES _____

Data Frame _____

Remarks: Dup-1 Collected @ 9:55 am

Sampling Personnel: JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
9:53 am	—	—	2.15	141.2	7.51	21.16	0.695	—		

Constituents Sampled	Container Description	Number	Preservative

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

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Micropurge Sampling Log

Project: LVX HEC Transfer | Project No. | Page 1 of 1

Site Location: Carlsbad | Date 6/12/19

Site/Well No. RW - 6R | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:49 am End 10:49 am

Evacuation Data

Sounded Well Depth (ft bmp)

Depth to Water (ft bmp)

Gallons Pumped/Bailed Prior to Sampling: Peristaltic Hose

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi)

Purge Time: Begin End

Pumping Rate (gpm)

Evacuation Method: Peristaltic Hose

Field Parameters

Color: Clear

Odor: —

Appearance: Clear

*IRON, ferrous: N/A

*SULFIDES

Data Frame

Remarks

Sampling Personnel: JL/LR

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
10:49 am	—	—	0.84	185.4	6.68	23.91	20.24	—		

Constituents Sampled	Container Description	Number	Preservative

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

Gauging Form
HES Transfer Site Name:Cooper Jal
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
MW-1	11/20/19	134.45	174.2	
MW-2	11/20/19	134.21	168.57	
MW-2A	11/20/19	134.24	142.23	
MW-3	11/19/19	132.50	175.9	
MW-4	11/19/19	135.04	177.64	
MW-4A	11/19/19	134.95	147.60	
MW-5	11/19/19	136.91	173.50	
MW-5A	11/19/19	136.46	139.18	
MW-6	—	—	—	No longer exists (s.dec to Jer... L.)
MW-6R	11/19/19	136.04	197.37	
MW-7	11/20/19	135.5	162.58	
MW-8	11/20/19	133.24	146.92	
MW-9	11/20/19	131.96	162.0	
MW-9A	11/20/19	131.63	145.66	
MW-10	11/20/19	135.36	160.71	
MW-11	11/20/19	130.04	172.3	
MW-12	11/20/19	139.65	174.57	
MW-14	11/20/19	133.42	178.42	
RW-1	11/20/19	133.63	163.79	
RW-2	11/19/19	135.08	172.60	
RW-2R	11/19/19	136.71	188.97	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-3
Static Water Level: 132.5
Stop Time: 1347

Date: 11/19/19
Personnel: CF, CH
Total Depth: 195.90
Start Time: 1333

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
133	0.709	20.67
135	0.693	20.53
137	0.681	20.4
139	0.679	20.40
141	0.678	20.38
143	0.678	20.38
145	0.679	20.38
147	0.679	20.38
149	0.679	20.39
151	0.678	20.37
153	0.678	20.39
155	0.678	20.40
157	0.679	20.40
159	0.678	20.41
161	0.677	20.41
163	0.677	20.42
165	0.678	20.43
167	0.679	20.43
169	0.679	20.44
171	0.680	20.45
173	0.679	20.46

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-3 Inspection Date 11/19/19 Inspector [illegible]

Measured Well Depth 175.9 Measuring Point 17 Depth to water 132.5

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 ← added name w/ paint pen
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: added name to well w/ paint pen

Well Conductivity Profile Field data Sheet

Site Name: Logos Tall
Well Identification: MW-6R
Static Water Level: 136.04
Stop Time: 1427

Date: 11/19/19
Personnel: CF, CM
Total Depth: 187.37
Start Time: 140

Depth (record in two feet intervals)	Conductivity (Denote ~~us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
137	0.760	20.69
139	0.758	20.63
141	0.757	20.62
143	0.758	20.61
145	"	"
147	"	"
149	"	"
151	0.759	"
153	0.758	"
155	0.759	20.62
157	0.761	20.62
159	0.760	20.62
161	0.762	20.63
163	0.761	"
165	0.760	"
167	0.759	"
169	0.754	20.64
171	0.754	20.64
173	0.765	20.65
175	0.764	20.66
177	0.861	20.67
179	0.861	20.67
181	0.864	20.67
183	0.864	20.67
185	0.865	20.67

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-6R Inspection Date 11/19/19 Inspector CE / CM

Measured Well Depth 187.37 Measuring Point TOC Depth to water 136.04

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: Cooper Tank
Well Identification: MW-5A
Static Water Level: 136.46
Stop Time: 1430

Date: 11/19/19
Personnel: CF, CM
Total Depth: 139.98
Start Time: 1430

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or ~~MS/cm~~ for each recording)	Temperature ~~(Fahrenheit)~~ Celsius)
137	2.54	20.23
139	2.937	20.83

Well Inspection Checklist and Reporting Form

Site Name/ Location [illegible] Project Number _____

Well Identification MW-5A Inspection Date 11/19/19 Inspector CF CM

Measured Well Depth 139.98 Measuring Point TOC Depth to water 136.46

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: Did not deploy hydrasleeve due to lack of water volume.

Displacement of water due to presence of a small amount of silt

Well Conductivity Profile Field data Sheet

Site Name: Laguna Tal
Well Identification: MW-5
Static Water Level: 136.91
Stop Time: 1501

Date: 11/19/19
Personnel: CF, CM
Total Depth: 177.30
Start Time: 1440

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature ~~(Fahrenheit or~~ Celsius)
138	5.401	20.75
140	5.401	20.77
142	5.402	20.76
144	5.403	20.75
146	5.404	20.75
148	5.404	20.75
150	5.404	20.75
152	5.403	20.75
154	5.402	20.76
156	5.402	20.76
158	5.402	20.76
160	5.399	20.77
162	5.399	20.77
164	5.401	20.77
166	5.399	20.77
168	5.400	20.78
170	5.401	20.78
172	5.438	20.79
174	5.538	20.79
176	5.698	20.79

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-5 Inspection Date 11/19/19 Inspector CL, CM

Measured Well Depth 177.50 Measuring Point TOC Depth to water 136.91

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 Conductivity Profile Field data Sheet

Site Name: C[illegible]er Tal

Well Identification: MW-4A

Static Water Level: 1[illegible]4.95

Stop Time: 1522

Date: 11/1[illegible]

Personnel: CF C[illegible]

Total Depth: 147.60

Start Time: 1516

Depth (record in two feet intervals)	**Conductivity** (Denote Us/cm or MS/cm for each recording)	**Temperature** (Fahrenheit or Celsius)
1[illegible]	1.6	20.63
[illegible]	1.[illegible]	[illegible].63
140	1.626	20.63
[illegible]	1.[illegible]	20.62
144	1.[illegible]27	[illegible].63
146	1.95[illegible]	20.[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Eunice Ga Project Number

Well Identification MW-4A Inspection Date 11/19/19 Inspector T. M

Measured Well Depth 147.60 Measuring Point 145 Depth to water 13.95

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: Slight discoloration due to small amount of silt present in sample.

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4
Static Water Level: 135.06
Stop Time: 54

Date: 11/19/19
Personnel: CF CM
Total Depth: 177.64
Start Time: 10

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or (MS/cm) for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
136	6.616	20.52
138	6.618	20.58
140	6.624	[illegible]
142	[illegible]	20.62
144	[illegible]	20.61
146	[illegible]	20.62
148	[illegible]	[illegible]
150	[illegible]3	20.63
152	10.04	20.63
154	0.[illegible]	[illegible]
156	1.57	20.64
158	[illegible].30	20.64
160	[illegible]	20.65
162	[illegible]	20.65
164	21.5[illegible]	20.65
166	30.[illegible]	20.66
168	41.7[illegible]	20.66
170	42.3[illegible]	20.66
172	[illegible]	[illegible]
174	36.2[illegible]	20.67
176	3[illegible].15	20[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper 3,1 Project Number _____

Well Identification MW-4 Inspection Date 4.9.19 Inspector CC, CM

Measured Well Depth 177.64 Measuring Point TOC Depth to water 135.06

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

added on w/ paint pen

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: C[illegible]er Jal
Well Identification: [illegible]W-2R
Static Water Level: 136.71
Stop Time: 627

Date: 11 19[illegible]
Personnel: [illegible]
Total Depth: 188.97
Start Time: 161

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
137	1.578	20.72
139	1.589	20.73
141	1.735	20.7[illegible]
143	1.[illegible]21	20.74
145	15.81	20.74
147	1[illegible].6	20.75
149	1[illegible].03	"
151	1[illegible].9[illegible]	"
153	1[illegible].99	"
155	2.00	"
157	2.03	20.74
159	2.[illegible]	"
161	2.06	"
163	2.07	"
165	22.09	20.77
167	[illegible]	"
169	2.17	"
171	2.20	"
173	2.[illegible]2	"
175	22.63	20.78
177	"	"
179	"	"
181	"	"
183	22.45	20.[illegible]
185	22.44	20.[illegible]
187	22.43	20.78
189	22.43	20.[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification RW-28 Inspection Date 11/19/19 Inspector EF, LB

Measured Well Depth 188.97 Measuring Point TOC Depth to water 134.71

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: [illegible]
Well Identification: RW-2
Static Water Level: 135.08
Stop Time: 1453

Date: 11/17/19
Personnel: CF, [illegible]
Total Depth: 172.60
Start Time: 1426

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm or~~ MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
138	1.82	20.7
140	2.001	20.19
0	2.[illegible]	20.[illegible]
142	2.391	20.71
144	2.54	20.71
146	2.553	20.[illegible]
148	2.[illegible]39	20.73
150	2.[illegible]70	20.73
152	3.6[illegible]	20.74
154	5.99	20.74
156	15.27	20.74
158	15.52	20.74
160	15.66	20.74
162	15.78	20.74
164	16.11	20.74

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

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

Measured Well Depth 172.60 Measuring Point TOC Depth to water 135.08

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? (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: Bailer chips on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible]al
Well Identification: MW-1
Static Water Level: 13[illegible].45
Stop Time: 0821

Date: 11 20 '0
Personnel: CF CM
Total Depth: 174.2
Start Time: 0806

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature ~~(Fahrenheit or~~ Celsius)
135	1.277	2.45
137	.264	7.46
[illegible]	.263	7.42
141	[illegible]	[illegible]
143	1.266	7.39
145	[illegible]	[illegible]
147	1.275	"
149	[illegible]	"
[illegible]	[illegible]	7.47
153	[illegible].332	7.46
155	[illegible].355	7.4
157	[illegible]	[illegible]
159	[illegible].246	7.33
[illegible]	[illegible]	[illegible]
[illegible]3	4.335	[illegible]
165	4.349	7.35
[illegible]7	[illegible]30	7.34
[illegible]	[illegible]	[illegible]
171	4.8	20.39
175	4.[illegible]73	[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-1 Inspection Date 11/5/19 Inspector CF/AM

Measured Well Depth 42 Measuring Point TOC Depth to water 34.45

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: Slight discoloration due to presence of a small amount of silt

Well Conductivity Profile Field data Sheet

Site Name: [illegible]er [illegible]
Well Identification: MW-12
Static Water Level: [illegible].65
Stop Time: [illegible]45

Date: 11.20.19
Personnel: CF CM
Total Depth: 176.57
Start Time: [illegible]0833

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or ~~MS/cm~~ for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
141	1.201	20.49
143	1.201	20.57
145	1.200	20.66
147	1.213	20.73
149	1.248	20.73
151	1.299	20.75
153	1.383	"
155	1.442	"
157	1.511	"
159	1.534	"
161	1.620	"
163	1.651	"
165	1.663	"
167	1.664	"
169	1.662	"
171	1.671	20.75
173	1.409	20.72

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-12 Inspection Date 11/20/19 Inspector CF, CM

Measured Well Depth 144.57 Measuring Point TT Depth to water 139.65

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: [redacted]
Well Identification: MW-21
Static Water Level: 134.24
Stop Time: 0921

Date: 11/20/19
Personnel: CF CM
Total Depth: 142.23
Start Time: [redacted]17

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature ~~(Fahrenheit~~ or Celsius)
135	[redacted].817	20.[redacted]3
[redacted]7	[redacted].809	[redacted].57
[redacted]9	[redacted].813	[redacted].63
141	[redacted].825	20.64

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-2A Inspection Date 11/20/19 Inspector CM

Measured Well Depth 42.23 Measuring Point TOC Depth to water 09.21

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: Empire Pad
Well Identification: MW-2
Static Water Level: 134.21
Stop Time: 0947

Date: 11/20/19
Personnel: CF, CM
Total Depth: 168.57
Start Time: 0928

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
135	0.415	20.53
137	0.414	20.63
139	0.420	20.66
141	0.431	20.69
143	0.435	20.70
145	0.437	20.71
147	0.491	20.72
149	0.501	20.73
151		
153		
155		
157		
159		
161		
163		
165		
167		

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-2 Inspection Date 11/20/19 Inspector RFCM

Measured Well Depth 168.57 Measuring Point TOC Depth to water 134.21

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: crack at top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible] Tal

Well Identification: MW-10

Static Water Level: 136.36

Stop Time: 1004

Date: 11.20.19

Personnel: CF, LM

Total Depth: 166.71

Start Time: 0956

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
138	1.310	20.62
140	1.321	20.67
142	1.356	20.68
144	1.383	20.7
146	1.419	20.71
148	1.456	20.72
150	1.486	"
152	1.548	"
154	1.605	"
156	1.656	"
158	1.692	"
160	1.675	"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-10 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 60.71 Measuring Point TOC Depth to water 36.36

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: _____

Well Conductivity Profile Field data Sheet

Site Name: Lower Jal
Well Identification: MW-14
Static Water Level: 130.48
Stop Time: 1031

Date: 11/20/19
Personnel: CF, CM
Total Depth: 178.92
Start Time: 1017

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
132	0.665	20.56
134	0.664	20.60
136	0.664	20.61
138	"	20.62
140	"	20.63
142	"	"
144	0.665	20.64
146	0.664	"
148	"	20.65
150	"	"
152	"	"
154	0.663	"
156	"	20.66
158	0.662	20.66
160	0.662	20.66
162	0.663	20.67
164	"	"
166	"	"
168	"	"
170	"	"
~~172~~		
~~174~~		
~~176~~		"
~~178~~		"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-14 Inspection Date 11/26/19 Inspector CM

Measured Well Depth 130.92 Measuring Point TOC Depth to water 130.48

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: [redacted] Jal
Well Identification: MW-7
Static Water Level: 135.5
Stop Time: 1101

Date: 11/20/19
Personnel: CS, JM
Total Depth: 162.58
Start Time: 1050

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or ~~MS/cm~~ for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
136	5.995	20.76
138	5.913	20.72
140	6.031	20.71
142	6.212	20.70
144	6.720	"
146	7.209	"
148	8.011	"
150	9.092	"
152	9.91	20.71
154	11.07	"
156	12.51	"
158	12.59	"
160	12.61	"
162	12.67	"

Well Inspection Checklist and Reporting Form

Site Name/ Location [illegible] Project Number _____

Well Identification MW-7 Inspection Date 11/20/19 Inspector CF, CM

Measured Well Depth 162.58 Measuring Point TOC Depth to water 135.5

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: [illegible] al
Well Identification: MW-8
Static Water Level: 133.84
Stop Time: 26

Date: 11/20/2019
Personnel: CR CM
Total Depth: 146.92
Start Time: 1117

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm or~~ mS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
134	0.516	20.99
136	.500	20.75
138	0.483	20.7
140	.48	20.66
142	"	20.64
144	"	"
146	.481	"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-8 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 146.92 Measuring Point ~~TOC~~ 136 Depth to water 133.84

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: minor chips present on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible] Tank

Well Identification: MW-9

Static Water Level: 131.86

Stop Time: 206

Date: 11/20/20[illegible]

Personnel: CF, M

Total Depth: 162.0

Start Time: 1145

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm or~~ MS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
132	1.[illegible]	20.82
134	[illegible]7	20.[illegible]1
136	.[illegible]8	[illegible]
[illegible]8	1.[illegible]22	20.[illegible]5
40	1.131	[illegible].75
142	[illegible].261	20.[illegible]
14[illegible]	[illegible].672	[illegible]75
146	.849	[illegible]76
148	2.[illegible]78	[illegible]6
150	[illegible].077	20.76
152	[illegible]20[illegible]	20.75
154	[illegible].208	20.75
156	[illegible]280	20.75
15[illegible]	[illegible].[illegible]76	20.75
160	[illegible].245	20.76
1[illegible]2	3.0[illegible]	[illegible]76

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-9 Inspection Date 11/20/2019 Inspector CF, CM

Measured Well Depth 162 Measuring Point 31.86 Depth to water 131.86

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: minor dirt present on top of casing.

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-9A
Static Water Level: 131.63
Stop Time: 1220

Date: 11/20/2019
Personnel: F CM
Total Depth: 145.66
Start Time: 1214

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
132	.966	20.86
134	[illegible]6	20.78
136	.221	20.77
[illegible]	1.772	20.76
140	2.253	20.77
142	2.271	20.79
146	2.278	20.72

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-9A Inspection Date 1/20/19 Inspector CF, CM

Measured Well Depth 145.66 Measuring Point 1.42 Depth to water 131.63

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: Water chips on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible] Tal
Well Identification: MW-11
Static Water Level: 10.04
Stop Time: 1[illegible]

Date: 11/20/19
Personnel: [illegible]
Total Depth: 172.3
Start Time: 1256

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
130	0.642	20.85
132	0.640	20.79
[illegible]	[illegible]	20.76
136	[illegible]	20.75
[illegible]	0.639	20.75
140	[illegible]	"
142	[illegible]	"
144	[illegible]	"
146	[illegible]	"
148	[illegible]	"
150	0.642	"
152	0.646	"
154	[illegible]	"
156	[illegible]	"
158	[illegible]	"
160	[illegible]	"
162	[illegible]	"
164	[illegible]	"
166	[illegible]	"
168	[illegible]	"
170	"	"
172	"	20.76

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-11 Inspection Date 11/2019 Inspector CF, CM

Measured Well Depth 172.3 Measuring Point TOC Depth to water 130.04

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: Marked well with paint pen

Well Conductivity Profile Field data Sheet

Site Name: [illegible]
Well Identification: BH-1
Static Water Level: 15.63
Stop Time: 1415

Date: 11/20/19
Personnel: [illegible]
Total Depth: [illegible]
Start Time: 1403

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
134	.450	20.68
136	[illegible]	[illegible]
138	[illegible]	[illegible]
140	[illegible]	20.62
142	.483	20.62
144	.615	20.62
146	2.08	20.62
148	[illegible]	20.62
150	[illegible]	20.62
152	5.183	[illegible]
[illegible]	11.0	20.63
156	26.53	[illegible]
158	27.00	[illegible]
[illegible] 160	23.95	20.64
162	19.11	[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification RW-1 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 163.79 Measuring Point 68 Depth to water 133.63

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: added well Markings onto well stickup

APPENDIX C

Cumulative Summary of Groundwater Analytical Results

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-1	9/16/97	--	--	280.00	**8,500.00**	--	--	**1,100.00**	520.00	630.00	50.00	4,300.00	**15,000.00**
	2/25/98	--	--	280.00	**5,600.00**	--	--	570.00	285.00	520.00	116.00	2,900.00	**9,300.00**
	2/14/01	<1.00	306.00	306.00	**11,000.00**	**4.40**	7.70	**1,000.00**	374.00	780.00	236.00	5,236.00	**20,000.00**
	5/17/02	<1.00	208.00	208.00	237.00	**5.83**	3.28	86.90	45.70	20.10	11.90	184.00	784.00
	10/23/02	--	--	--	168.00	--	--	96.80	--	--	--	--	696.00
	5/21/03	<1.00	290.00	290.00	**6,600.00**	<8.00	**10.90**	**875.00**	238.00	475.00	96.50	3,410.00	**13,200.00**
	11/25/03	<1.00	250.00	250.00	**402.00**	**7.03**	2.72	125.00	19.20	22.00	18.50	294.00	**1,158.00**
	5/12/04	<1.00	264.00	264.00	**504.00**	**7.31**	2.70	136.00	17.20	23.10	22.40	355.00	**1,328.00**
	11/16/04	<1.00	232.00	232.00	**384.00**	**4.94**	3.30	103.00	29.20	22.70	25.40	373.00	952.00
	11/16/05	<10.00	262.00	262.00	**1,210.00**	**3.00**	2.40	215 D1	85.40	92.60	23.00	847.00	**2,640.00**
	11/14/06	<10.00	200.00	200.00	96.00	**4.20**	2.00	76.00	13.20	6.49	15.60	172.00	624.00
	11/16/07	<10.00	255.00	255.00	**4,250.00**	**3.70**	3.90 D1	602 D1	154.00	187.00	54.00	2,100 D1	**10,900.00**
	11/4/08	<5.00	190.00	190.00	110.00	**6.30**	1.60	83.00	10.00	5.80	7.90	180.00	590.00
	11/3/09	<10.00	270.00	270.00	**4,100.00**	**4.10**	2.80	**640.00**	190.00	250.00	61.00	2,300.00	**8,000.00**
	11/10/10	<10.00	223.00	223.00	**2,670.00**	**1.92**	2.62	373.00	138.00	196.00	21.50	1,480.00	**5,020.00**
	11/10/11	<5.00	209.00	209.00	**3,220.00**	1.02	2.37	275.00	169.00	176.00	22.50	1,340.00	**5,250.00**
Dup	11/10/11	<5.00	213.00	213.00	**2,930.00**	1.05	2.35	240.00	183.00	197.00	22.60	1,480.00	**4,640.00**
	10/11/12	<5.00	190.00	190.00	**2,190.00**	**6.74**	4.52	301.00	132.00	145.00	17.90	1,140.00	**1,880.00**
	10/8/13	<6.00	211.00	211.00	**1,890.00**	1.46	2.39	247.00	131.00	114.00	15.30	914.00	**2,380.00**
	10/7/14	<4.00	205.00	205.00	**1,700.00**	0.46	2.37	277.00	118.00	126.00	14.90	860.00	**3,690.00**
	10/21/15	--	--	--	182.00	<4.00	--	78.10	--	--	--	--	559.00
	10/18/16	--	--	--	**1,320.00**	0.83	--	221.00	--	--	--	--	**2,700.00**
	10/24/17	--	--	--	148.00	**2.57**	--	79.40	--	--	--	--	594.00
	10/18/18	--	--	--	**1,290.00**	0.79	--	215.00	--	--	--	--	**2,360.00**
	6/20/19	--	--	--	**1,110.00**	--	--	--	--	--	--	--	**2,510.00**
	11/24/19	--	--	--	**1,110.00**	--	--	222.00	--	--	--	--	**2,190.00**
MW-2	2/25/98	--	--	210.00	**5,900.00**	--	--	**760.00**	840.00	380.00	30.00	2,650.00	**9,400.00**
	4/9/98	--	--	290.00	**8,200.00**	--	--	**990.00**	1,100.00	490.00	29.00	3,430.00	**15,000.00**
	2/14/01	<1.00	184.00	184.00	**7,400.00**	**2.30**	4.10	**870.00**	1,025.00	488.00	48.50	3,189.00	**15,000.00**
	5/17/02	<1.00	160.00	160.00	**3,200.00**	**1.72**	3.18	483.00	587.00	239.00	35.60	1,160.00	**6,040.00**
	10/23/02	--	--	--	**2,920.00**	--	--	451.00	--	--	--	--	**6,770.00**
	5/22/03	<1.00	158.00	158.00	**2,550.00**	**2.04**	3.87	386.00	448.00	176.00	20.00	1,020.00	**5,880.00**
	11/25/03	<1.00	160.00	160.00	**3,330.00**	<4.00	5.63	446.00	555.00	227.00	32.00	1,120.00	**6,760.00**
	5/12/04	<1.00	146.00	146.00	**1,750.00**	<2.00	2.78	246.00	308.00	112.00	29.70	549.00	**3,965.00**
	11/16/04	<1.00	120.00	120.00	**430.00**	<1.00	2.13	56.90	104.00	29.40	22.40	158.00	832.00
	11/16/05	<10.00	171.00	171.00	**4,720.00**	0.72	2.60	**645 D1**	594.00	209.00	20.80	3,290.00	**10,000.00**
	11/14/06	<10.00	160.00	160.00	**3,500.00**	0.78 N	2.10	470.00	535.00	212.00	21.00	15,400.00	**8,260.00**
	11/14/07	<10.00	178.00	178.00	**3,280.00**	0.76	1.93	462 D1	449.00	152.00	16.20	1310 D1	**9,110.00**
	11/4/08	<5.00	150.00	150.00	**2,900.00**	<1.0	1.10	430.00	380.00	160.00	26.00	1,200.00	**5,600.00**
	11/16/09	<10.00	150.00	150.00	**2,000.00**	1.10	1.60	340.00	290.00	120.00	20.00	750.00	**4,300.00**
	11/12/10	<10.00	186.00	186.00	**1,890.00**	0.73	1.86	327.00	326.00	120.00	9.80	795.00	**3,680.00**
	11/10/11	<5.00	175.00	175.00	**1,480.00**	0.81	1.31	150.00	227.00	83.20	9.75	668.00	**2,860.00**
	10/11/12	<5.00	149.00	149.00	**524.00**	0.55	1.92	231.00	119.00	31.70	8.78	286.00	**1,090.00**
	10/8/13	<6.00	269.00	269.00	**1,180.00**	1.20	<0.10	169.00	178.00	64.70	8.16	505.00	**2,520.00**
	10/7/14	<4.00	196.00	196.00	**695.00**	0.52	<0.023	147.00	143.00	47.50	7.30	343.00	**1,310.00**
	10/21/15	--	--	--	27.10	<2.00	--	58.60	--	--	--	--	388.00
	10/18/16	--	--	--	26.70	<0.50	--	34.40	--	--	--	--	352.00
	10/25/17	--	--	--	35.80	1.00	--	36.30	--	--	--	--	331.00
	10/18/18	--	--	--	65.90	0.66	--	48.50	--	--	--	--	384.00
	6/20/19	--	--	--	**283.00**	--	--	--	--	--	--	--	960.00
	11/23/19	--	--	--	27.70	--	--	42.00	--	--	--	--	274.00
MW-2A	2/26/98	--	--	190.00	**280.00**	--	--	330.00	144.00	36.00	5.70	215.00	**1,200.00**
	2/14/01	<1.00	162.00	162.00	44.00	1.30	2.30	76.00	64.40	16.70	7.02	45.50	390.00
	5/15/02	<1.00	176.00	176.00	36.60	<1.00	2.34	79.10	57.60	13.90	4.35	43.80	435.00
	10/23/02	--	--	--	44.30	--	--	97.00	--	--	--	--	425.00
	5/22/03	<1.00	168.00	168.00	40.50	<1.00	2.18	75.50	67.20	14.30	3.76	47.90	418.00
	11/25/03	<1.00	166.00	166.00	43.10	1.00	2.23	77.40	51.70	14.40	3.98	43.80	452.00
	5/12/04	<1.00	176.00	176.00	44.80	<1.00	2.24	76.50	62.90	15.00	3.66	43.60	440.00
	11/16/04	<1.00	164.00	164.00	52.50	1.22	2.78	75.40	68.80	15.30	3.98	49.10	428.00
	11/16/05	<10.00	151.00	151.00	56.80	0.60	2.30	75.1 D1	157.00	18.00	4.20	49.80	630 N
	11/14/06	<10.00	180.00	180.00	49.00	0.55	1.60	76.00	69.80	15.60	3.47	49.90	488.00
	11/14/07	<10.00	170.00	170.00	74.60	0.58	1.51	66.8 D1	666.00	15.30	<5.00	45.40	504.00
	11/4/08	<5.00	220.00	220.00	68.00	0.49	1.40	74.00	67.00	15.00	3.20	42.00	470.00
	11/3/09	<10.00	230.00	230.00	62.00	0.59	1.60	81.00	66.00	15.00	3.40	50.00	480.00
	11/11/10	<10.00	158.00	158.00	86.10	0.45	1.73	74.00	53.90	14.90	2.86	42.80	474.00
	11/10/11	<5.00	175.00	175.00	129.00	0.28	1.25	101.00	92.50	23.30	4.17	64.70	614.00
	10/11/12	<5.00	173.00	173.00	76.50	0.46	1.60	79.40	69.20	15.70	3.62	45.30	500.00
	10/8/13	<6.00	248.00	248.00	78.60	0.41	0.62	75.40	92.60	18.70	4.06	51.20	496.00
	10/7/14	<4.00	188.00	188.00	72.50	0.20	1.55	79.40	77.10	17.20	3.00	44.30	496.00
	10/21/15	--	--	--	76.70	<4.00	--	77.50	--	--	--	--	441.00
	10/18/16	--	--	--	84.60	<0.50	--	83.40	--	--	--	--	455.00
	10/25/17	--	--	--	83.10	1.23	--	77.30	--	--	--	--	512.00
	10/18/18	--	--	--	103.00	0.67	--	88.30	--	--	--	--	491.00
	6/20/19	--	--	--	86.50	--	--	--	--	--	--	--	554.00
	11/23/19	--	--	--	88.00	--	--	76.50	--	--	--	--	414.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-3	2/27/98	--	--	190.00	**452.00**	--	--	406.00	200.00	50.00	11.00	237.00	**1,500.00**
	2/14/01	<1.00	158.00	158.00	34.00	**1.60**	2.40	100.00	54.50	19.00	7.61	48.60	440.00
	5/17/02	<1.00	158.00	158.00	30.60	1.56	2.35	102.00	55.60	18.40	5.04	50.00	433.00
	10/23/02	--	--	--	35.40	--	--	104.00	--	--	--	--	419.00
	5/22/03	<1.00	156.00	156.00	30.60	1.17	2.25	96.30	53.20	17.80	5.39	54.60	435.00
	11/25/03	<1.00	160.00	160.00	31.40	1.35	2.30	103.00	46.50	18.00	5.19	51.70	440.00
	5/12/04	<1.00	164.00	164.00	32.30	1.20	2.38	101.00	52.20	16.80	4.77	47.50	448.00
	11/16/04	<1.00	166.00	166.00	35.10	1.53	2.77	95.40	56.30	23.60	12.70	58.90	424.00
	11/17/05	<10.0	171.00	171.00	96.30	0.97	2.20	108 D1	89.20	22.10	8.87	93.40	840.00
	11/15/06	<10.00	170.00	170.00	30.00	0.92 N	1.70	96.00	51.30	17.30	4.30	57.20	505.00
	11/16/07	<10.00	170.00	170.00	39.70	0.93	1.58	88.2 D1	50.80	16.30	<5.00	50.60	570.00
	11/6/08	<5.00	150.00	150.00	36.00	1.10	1.40	97.00	50.00	17.00	4.00	48.00	430.00
	11/3/09	<10.00	160.00	160.00	35.00	1.10	1.60	110.00	49.00	17.00	4.20	56.00	410.00
	11/10/10	<10.00	164.00	164.00	35.40	0.84	1.77	99.90	48.80	15.20	3.42	45.10	380.00
	11/10/11	<5.00	165.00	165.00	36.40	0.83	1.35	87.90	57.90	18.00	3.79	53.00	404.00
	10/11/12	<5.00	162.00	162.00	36.60	1.01	1.74	100.00	51.20	16.90	4.11	51.00	438.00
	10/8/13	<6.00	194.00	194.00	38.40	1.02	1.17	98.70	56.50	18.30	4.08	54.90	450.00
	10/7/14	<4.00	187.00	187.00	19.50	0.37	1.39	62.80	44.30	9.82	22.40	38.80	332.00
	10/21/15	--	--	--	25.60	<2.00	--	74.80	--	--	--	--	307.00
	10/18/16	--	--	--	37.10	0.66	--	109.00	--	--	--	--	464.00
	10/24/17	--	--	--	35.90	1.50	--	98.70	--	--	--	--	442.00
	10/18/18	--	--	--	209.00	**5.35**	--	567.00	--	--	--	--	415.00
	6/20/19	--	--	--	40.00	--	--	--	--	--	--	--	448.00
	11/23/19	--	--	--	60.00	--	--	96.60	--	--	--	--	352.00
MW-4	2/27/98	--	--	230.00	**12,000.00**	--	--	**1,300.00**	1,700.00	880.00	48.00	5,300.00	**22,000.00**
	4/9/98	--	--	240.00	**13,000.00**	--	--	**1,500.00**	1,740.00	840.00	42.00	5,400.00	**23,000.00**
	2/14/01	<1.00	232.00	232.00	**15,000.00**	**1.80**	6.80	**1,500.00**	--	--	--	--	**29,000.00**
	5/17/02	<1.00	232.00	232.00	**11,300.00**	**2.01**	6.09	**1,380.00**	1,610.00	814.00	60.90	4,310.00	**22,600.00**
	10/23/02	--	--	--	**11,300.00**	--	--	**1,320.00**	--	--	--	--	**23,200.00**
	5/22/03	<1.00	220.00	220.00	**11,300.00**	<10.00	**12.30**	**1,370.00**	1,450.00	659.00	47.30	4,140.00	**62,500.00**
	11/26/03	<1.00	218.00	218.00	**12,100.00**	<8.00	**12.30**	**1,400.00**	1,830.00	889.00	62.00	4,620.00	**54,450.00**
	5/11/04	<1.00	214.00	214.00	**14,200.00**	<8.00	8.97	**1,560.00**	1,800.00	829.00	60.70	4,850.00	**65,450.00**
	11/17/04	<1.00	222.00	222.00	**13,600.00**	<20.00	**31.50**	**1,410.00**	2,020.00	972.00	73.60	5,900.00	**25,200.00**
	11/17/05	<10.00	181.00	181.00	**9,440.00**	0.82	0.20	45.8 D1	849.00	387.00	28.10	3,880.00	**24,300.00**
	11/15/06	<10.00	260.00	260.00	**14,000.00**	<5.00 C	5.20	**1,400.00**	1,760.00	897.00	58.80	6,150.00	**28,700.00**
	11/14/07	<10.00	255.00	255.00	**14,800.00**	0.54	7.15 D1	**1,410 D1**	1,170.00	382.00	48.00	4,760 D1	**36,300.00**
	11/12/08	<5.00	200.00	200.00	**12,000.00**	1.20	0.33	**1,300.00**	1,500.00	840.00	82.00	4,800.00	**22,000.00**
	11/4/09	<5.00	250.00	250.00	**15,000.00**	1.10	5.30	**1,600.00**	1,500.00	1,000.00	65.00	5,800.00	**30,000.00**
	11/11/10	<5.00	294.00	294.00	**15,500.00**	<1.00	**10.20**	**1,270.00**	1,380.00	904.00	40.40	5,450.00	**25,500.00**
	11/10/11	<5.00	277.00	277.00	**16,900.00**	0.11	6.16	**1,060.00**	1,680.00	1,110.00	40.00	6,490.00	**28,900.00**
	10/11/12	<5.00	256.00	256.00	**5,850.00**	**2.10**	4.58	**629.00**	434.00	334.00	21.20	2,620.00	**12,000.00**
	10/8/13	<6.00	294.00	294.00	**16,200.00**	0.72	6.79	**1,460.00**	1,690.00	1,180.00	40.80	7,370.00	**36,300.00**
	10/7/14	<4.00	291.00	291.00	**15,000.00**	<100.00	7.15	**1,740.00**	1,350.00	1,060.00	44.10	4,250.00	**32,400.00**
	10/20/15	--	--	--	**3,200.00**	<40.00	--	402.00	--	--	--	--	**7,070.00**
	10/18/16	--	--	--	**17,900.00**	<1.00	--	**1,890.00**	--	--	--	--	**35,300.00**
	10/25/17	--	--	--	**6,830.00**	<5.00	--	**754.00**	--	--	--	--	**12,300.00**
	10/18/18	--	--	--	**14,800.00**	<0.10	--	**1,510.00**	--	--	--	--	**24,700.00**
	6/20/19	--	--	--	**2,760.00**	--	--	--	--	--	--	--	**7,830.00**
	11/24/19	--	--	--	**3,050.00**	--	--	420.00	--	--	--	--	**5,960.00**
MW-4A	2/27/98	--	--	180.00	**1,600.00**	--	--	410.00	470.00	130.00	11.00	620.00	**3,300.00**
	2/14/01	<1.00	154.00	154.00	**1,600.00**	1.40	2.80	210.00	--	--	--	--	**4,000.00**
	5/15/02	<1.00	156.00	156.00	**577.00**	<1.00	2.23	121.00	200.00	49.50	10.30	125.00	**1,610.00**
	10/23/02	--	--	--	**478.00**	--	--	114.00	--	--	--	--	**1,430.00**
	5/22/03	<1.00	154.00	154.00	**844.00**	<1.00	2.43	160.00	279.00	58.90	10.10	248.00	**2,200.00**
	11/26/03	<1.00	158.00	158.00	**1,060.00**	<4.00	5.82	182.00	337.00	79.30	15.20	329.00	**2,585.00**
	5/11/04	<1.00	156.00	156.00	**984.00**	<2.00	3.30	179.00	297.00	66.50	11.50	279.00	**2,300.00**
	11/17/04	<1.00	164.00	164.00	**1,110.00**	<2.00	4.62	186.00	369.00	75.40	14.90	413.00	**2,235.00**
	11/16/05	<10.0	181.00	181.00	**827 D1**	<0.50	2.20	160 D1	335.00	64.40	9.23	382.00	**2,340 N**
	11/15/06	<10.00	620.00	620.00	**960.00**	<0.50	2.60	170.00	227.00	53.50	8.10	406.00	**2,870.00**
	11/14/07	<10.00	311.00	311.00	**845 D1**	0.35	3.60 D1	167 D1	205.00	44.90	7.33	334.00	**2,650.00**
	11/12/08	<5.00	640.00	640.00	**650.00**	0.32	2.20	170.00	160.00	37.00	9.90	290.00	**1,700.00**
	11/4/09	<5.00	670.00	670.00	**670.00**	0.56	2.60	150.00	110.00	27.00	7.40	300.00	**1,600.00**
	11/11/10	<5.00	217.00	217.00	**663.00**	0.51	2.58	125.00	65.90	15.60	4.42	317.00	**1,760.00**
	11/10/11	<5.00	171.00	171.00	**621.00**	0.78	2.02	134.00	78.80	18.70	4.71	389.00	**1,400.00**
	10/11/12	<5.00	169.00	169.00	**516.00**	1.12	2.60	100.00	48.70	11.30	4.45	359.00	**1,200.00**
	10/8/13	<6.00	199.00	199.00	**512.00**	**2.63**	2.47	100.00	47.70	9.93	3.64	410.00	**1,170.00**
	10/7/14	<4.00	186.00	186.00	**387.00**	**1.69**	2.54	102.00	37.10	7.78	3.17	276.00	962.00
	10/20/15	--	--	--	**328.00**	<4.00	--	83.30	--	--	--	--	819.00
	10/18/16	--	--	--	**440.00**	1.49	--	97.60	--	--	--	--	**1,150.00**
	10/25/17	--	--	--	**341.00**	**2.83**	--	93.40	--	--	--	--	960.00
	10/18/18	--	--	--	**366.00**	1.29	--	99.60	--	--	--	--	901.00
	6/20/19	--	--	--	**336.00**	--	--	--	--	--	--	--	**1,040.00**
	11/24/19	--	--	--	**321.00**	--	--	94.50	--	--	--	--	824.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-5	2/26/98	--	--	180.00	**6,600.00**	--	--	**910.00**	1,400.00	470.00	31.00	2,400.00	**12,000.00**
	2/14/01	<1.00	166.00	166.00	**7,700.00**	**1.80**	4.10	**910.00**	--	--	--	--	**18,000.00**
	5/17/02	<1.00	156.00	156.00	**4,040.00**	1.53	4.56	586.00	757.00	319.00	60.90	1,260.00	**8,340.00**
	10/23/02	--	--	--	**3,900.00**	--	--	94.80	--	--	--	--	422.00
	5/22/03	<1.00	158.00	158.00	**3,170.00**	<4.00	6.52	550.00	644.00	215.00	49.90	1,240.00	**7,860.00**
	11/25/03	<1.00	168.00	168.00	**5,120.00**	<4.00	6.77	**739.00**	978.00	365.00	54.90	1,680.00	**11,940.00**
	5/11/04	<1.00	160.00	160.00	**6,760.00**	<3.00	4.65	**1,030.00**	1,180.00	417.00	40.30	2,120.00	**20,380.00**
	11/17/04	<1.00	172.00	172.00	**6,750.00**	<10.00	**16.60**	**786.00**	1,210.00	486.00	40.60	2,300.00	**11,980.00**
	11/17/05	<10.00	161.00	161.00	**2,140 D1**	0.79	0.16	334 D1	339.00	126.00	10.80	791.00	**7,120 N**
	11/14/06	<10.00	160.00	160.00	**2,000.00**	0.60	1.50	300.00	437.00	173.00	14.20	918.00	**4,420.00**
	11/14/07	<10.00	161.00	161.00	**5,790 D1**	0.37	4.01 D1	**668 D1**	812.00	240.00	23.30	1,850 D1	**16,300.00**
	11/6/08	<5.00	160.00	160.00	**4,900.00**	0.78	0.32	540.00	660.00	310.00	35.00	1,600.00	**9,700.00**
	11/3/09	<10.00	160.00	160.00	**5,100.00**	0.51	2.30	**710.00**	860.00	320.00	<13.00	1,800.00	**11,000.00**
	11/11/10	<5.00	176.00	176.00	**4,200.00**	0.16	2.37	554.00	687.00	250.00	17.30	1,400.00	**8,890.00**
	11/10/11	<5.00	172.00	172.00	**4,340.00**	0.24	0.55	411.00	944.00	326.00	19.70	1,780.00	**7,840.00**
	10/11/12	<5.00	164.00	164.00	**3,630.00**	0.38	2.26	474.00	671.00	239.00	17.00	1,360.00	**8,300.00**
	10/8/13	<6.00	176.00	176.00	**3,730.00**	0.37	1.56	425.00	659.00	253.00	15.40	1,440.00	**8,060.00**
	10/7/14	<4.00	172.00	172.00	**2,830.00**	<0.10	2.19	398.00	521.00	195.00	15.10	979.00	**5,280.00**
	10/21/15	--	--	--	**2,480.00**	<40.00	--	362.00	--	--	--	--	**5,510.00**
	10/18/16	--	--	--	**2,260.00**	<0.50	--	326.00	--	--	--	--	**5,380.00**
	10/25/17	--	--	--	**2,090.00**	<5.00	--	318.00	--	--	--	--	**3,780.00**
Dup	10/25/17	--	--	--	**2,010.00**	<5.00	--	300.00	--	--	--	--	**3,240.00**
	10/18/18	--	--	--	**1,890.00**	<0.10	--	323.00	--	--	--	--	**3,420.00**
	6/20/19	--	--	--	**1,700.00**	--	--	--	--	--	--	--	**4,280.00**
	11/23/19	--	--	--	**1,530.00**	--	--	250.00	--	--	--	--	**3,900.00**
MW-5A	2/26/98	--	--	170.00	190.00	--	--	180.00	107.00	23.00	3.50	117.00	740.00
	2/15/01	<1.00	164.00	164.00	140.00	1.20	2.10	130.00	90.20	27.90	8.70	74.60	670.00
	5/15/02	<1.00	182.00	182.00	53.50	<1.00	2.23	84.40	63.20	16.10	4.69	43.60	475.00
	10/23/02	--	--	--	50.00	--	--	**616.00**	--	--	--	--	**8,670.00**
	5/22/03	<1.00	158.00	158.00	32.50	<1.00	2.10	69.90	55.50	13.80	3.41	41.50	416.00
	11/25/03	<1.00	332.00	332.00	34.10	1.05	2.20	75.50	60.90	14.60	4.08	45.00	422.00
	5/11/04	<1.00	164.00	164.00	38.80	<1.00	2.25	75.80	60.90	15.00	3.40	43.20	484.00
	11/17/04	<1.00	152.00	152.00	39.60	1.37	2.66	74.30	58.10	13.60	3.83	48.50	430.00
	11/16/05	<10.00	191.00	191.00	40.20	0.82	2.10	75.2 D1	176.00	17.80	4.22	45.30	570 N
	11/14/06	<10.00	240.00	240.00	47.00	0.64	1.50	79.00	90.40	16.10	3.58	51.40	588.00
	11/14/07	<10.00	227.00	227.00	54.40	0.66	1.45	68.7 D1	73.70	14.00	<5.00	44.20	528.00
	11/6/08	<5.00	350.00	350.00	53.00	0.70	1.30	72.00	76.00	15.00	3.40	43.00	450.00
	11/3/09	<10.00	710.00	710.00	47.00	0.72	1.50	79.00	65.00	14.00	3.30	50.00	440.00
	11/11/10	<5.00	182.00	182.00	49.60	0.57	1.61	73.60	55.70	12.90	2.79	42.00	606.00
	11/10/11	<5.00	170.00	170.00	131.00	0.49	1.15	116.00	83.80	29.90	5.16	85.70	594.00
	10/11/12	<5.00	163.00	163.00	68.00	0.63	1.57	69.80	60.60	15.30	3.96	49.20	534.00
	10/8/13	<6.00	182.00	182.00	80.20	0.57	1.60	67.50	69.30	16.20	3.29	53.40	462.00
	10/7/14	<4.00	168.00	168.00	73.60	0.29	1.56	64.90	66.20	15.70	2.76	45.20	432.00
	10/21/15	--	--	--	84.90	<4.00	--	65.60	--	--	--	--	499.00
	10/18/16	--	--	--	101.00	<0.50	--	65.40	--	--	--	--	466.00
	10/25/17	--	--	--	99.60	1.14	--	59.30	--	--	--	--	537.00
	10/18/18	--	--	--	132.00	0.79	--	67.50	--	--	--	--	477.00
	6/20/19	--	--	--	118.00	--	--	--	--	--	--	--	650.00
	11/23/19	--	--	--	116.00	--	--	61.10	--	--	--	--	502.00
MW-6	2/26/98	--	--	200.00	**260.00**	--	--	400.00	180.00	44.00	6.20	205.00	**1,200.00**
	2/14/01	<1.00	158.00	158.00	59.00	**1.70**	2.20	99.00	67.50	22.10	7.67	52.30	470.00
	5/17/02	<1.00	162.00	162.00	37.80	**1.62**	2.14	99.30	63.10	19.60	5.12	48.60	427.00
	10/23/02	--	--	--	46.10	--	--	109.00	--	--	--	--	331.00
	5/22/03	<1.00	162.00	162.00	40.30	1.24	2.13	94.40	61.70	17.40	4.23	51.90	464.00
	11/25/03	<1.00	154.00	154.00	53.60	1.40	2.18	98.00	53.60	18.70	4.97	51.70	482.00
	5/11/04	<1.00	156.00	156.00	54.40	1.23	2.19	97.00	59.00	18.10	4.22	47.80	506.00
	11/16/04	<1.00	162.00	162.00	57.90	**1.64**	2.68	99.80	66.60	19.60	5.16	57.00	464.00
	11/17/05	<10.00	201.00	201.00	101.00	0.97	0.35	97.8 D1	103.00	20.20	4.10	59.10	730.00
	11/15/06	<10.00	750.00	750.00	68.00	0.99	1.50	93.00	64.60	20.40	4.23	57.10	507.00
	11/15/07	<10.00	284.00	284.00	162.00	**51.00**	1.35	96.3 D1	84.10	25.20	<5.00	62.10	630.00
	11/6/08	<5.00	220.00	220.00	84.00	1.20	1.20	95.00	67.00	21.00	4.30	53.00	490.00
	11/3/09	<10.00	190.00	190.00	81.00	1.20	1.40	100.00	66.00	20.00	4.50	59.00	550.00
	11/8/10	NS - Well Damaged											
	11/10/11	NS - Well Damaged											
	10/11/12	NS - Well Damaged											
	9/30/13	Well Plugged and Abandoned											
MW-6R	10/8/13	<6.00	225.00	225.00	110.00	**1.91**	<0.10	102.00	69.90	24.40	5.17	85.60	600.00
	10/7/14	<4.00	182.00	182.00	39.70	0.55	0.68	93.00	59.20	18.20	3.10	48.20	402.00
	10/21/15	--	--	--	40.70	<2.00	--	98.60	--	--	--	--	390.00
	10/18/16	--	--	--	42.30	0.63	--	105 J	--	--	--	--	442.00
	10/25/17	--	--	--	49.30	1.46	--	93.80	--	--	--	--	465.00
	10/18/18	--	--	--	69.10	1.05	--	107.00	--	--	--	--	442.00
	6/20/19	--	--	--	59.10	--	--	--	--	--	--	--	482.00
Dup	6/20/19	--	--	--	64.40	--	--	--	--	--	--	--	592.00
	11/23/19	--	--	--	69.40	--	--	95.20	--	--	--	--	384.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-7	5/14/98	--	--	230.00	**430.00**	--	--	340.00	214.00	66.00	13.00	165.00	**1,200.00**
	2/14/01	<1.00	150.00	150.00	**510.00**	**1.70**	2.40	150.00	--	--	--	--	**1,500.00**
	5/16/02	<1.00	150.00	150.00	75.70	1.59	2.27	97.40	68.60	23.20	6.63	54.30	501.00
	10/22/02	--	--	--	88.60	--	--	109.00	--	--	--	--	490.00
	5/22/03	<1.00	140.00	140.00	173.00	1.17	2.14	88.90	85.50	28.20	6.18	64.60	631.00
	11/26/03	<1.00	136.00	136.00	189.00	1.29	2.23	93.50	95.70	31.00	7.91	63.60	704.00
	5/13/04	<1.00	130.00	130.00	**267.00**	1.11	2.18	94.70	107.00	34.70	6.59	62.90	914.00
	11/16/04	<1.00	130.00	130.00	**367.00**	1.49	2.72	97.30	142.00	49.30	8.61	87.90	870.00
	11/17/05	<10.0	121.00	121.00	**456 D1**	0.53	0.28	106 D1	412.00	64.70	12.10	100.00	**1,440.00**
	11/15/06	<10.00	240.00	240.00	**550.00**	0.63	1.50	110.00	202.00	70.30	7.40	102.00	**2,100.00**
	11/15/07	<10.00	189.00	189.00	**458 D1**	1.20	1.39	176 D1	144.00	59.50	9.95	148.00	**1,880.00**
	11/12/08	<5.00	110.00	110.00	**650.00**	0.84	1.20	140.00	210.00	76.00	12.00	120.00	**1,600.00**
	11/4/09	<5.00	110.00	110.00	**1,100.00**	0.63	1.50	160.00	310.00	120.00	11.00	130.00	**2,800.00**
	11/10/10	<5.00	111.00	111.00	**1,310.00**	0.37	1.64	173.00	415.00	149.00	10.00	150.00	**3,130.00**
	11/10/11	<5.00	106.00	109.00	**1,710.00**	0.30	1.45	147.00	662.00	203.00	12.30	198.00	**3,660.00**
	10/11/12	<5.00	108.00	108.00	**2,020.00**	0.44	1.71	261.00	619.00	215.00	12.30	208.00	**5,580.00**
	10/8/13	<6.00	142.00	142.00	**2,840.00**	0.45	2.11	331.00	916.00	258.00	13.30	265.00	**7,530.00**
	10/7/14	<4.00	116.00	116.00	**2,190.00**	<0.10	2.03	317.00	682.00	238.00	12.20	227.00	**7,920.00**
	10/20/15	--	--	--	**1,420.00**	<20.00	--	231.00	--	--	--	--	**3,130.00**
	10/18/16	--	--	--	**2,920.00**	<0.50	--	385.00	--	--	--	--	**7,160.00**
	10/24/17	--	--	--	**1,670.00**	<2.00	--	249.00	--	--	--	--	**2,660.00**
	10/18/18	--	--	--	**4,000.00**	<0.10	--	482.00	--	--	--	--	**6,450.00**
	6/20/19	--	--	--	**4,210.00**	--	--	--	--	--	--	--	**15,500.00**
	11/24/19	--	--	--	**2,080.00**	--	--	272.00	--	--	--	--	**6,300.00**
MW-8	5/13/98	--	--	200.00	**270.00**	--	--	390.00	190.00	60.00	12.00	170.00	**1,200.00**
	2/14/01	<1.00	156.00	156.00	49.00	**1.80**	2.50	100.00	59.90	21.50	7.84	52.90	400.00
	5/16/02	<1.00	158.00	158.00	32.90	1.57	2.33	101.00	56.60	19.20	5.20	49.50	432.00
	10/22/02	--	--	--	40.80	--	--	104.00	--	--	--	--	392.00
	5/22/03	8.00	160.00	168.00	33.20	1.40	2.32	98.30	53.90	18.30	9.31	46.40	410.00
	11/26/03	<1.00	142.00	142.00	31.70	1.59	2.38	95.60	55.30	18.20	5.31	50.20	443.00
	5/12/04	<1.00	154.00	154.00	36.30	1.39	2.38	101.00	53.00	17.30	4.56	48.10	435.00
	11/16/04	<1.00	170.00	170.00	39.80	**1.94**	2.94	103.00	57.80	18.60	5.63	56.40	435.00
	5/17/05	4.00	152.00	156.00	41.00	**1.64**	2.94	105.00	61.00	18.60	5.78	47.30	434.00
	11/17/05	<10.00	171.00	171.00	113.00	1.10	<0.05	115 D1	83.40	21.70	5.74	102.00	750.00
	5/9/06	<10.00	160.00	160.00	210.00	0.89	1.40	200.00	72.70	33.30	7.12	125.00	896.00
	11/14/06	<10.00	150.00	150.00	230.00	1.10	1.20	200.00	74.20	38.30	9.61	162.00	912.00
	5/30/07	<10.00	141.00	141.00	62.00	1.20	1.74	120.00	54.10	19.10	<5.00	59.30	500.00
	11/15/07	<10.00	159.00	159.00	43.10	1.33	1.56	94.2 D1	52.10	17.20	<5.000	49.80	540.00
	5/15/08	<1.53	151.00	151.00	40.70	1.40	1.78	99.6 D1	51.70	16.80	4.10	54.8 D1	427.00
	11/12/08	<5.00	140.00	140.00	39.00	1.40	1.50	97.00	52.00	17.00	<2.6	46.00	350.00
	5/20/09	<5.00	140.00	140.00	39.00	1.30	1.60	110.00	50.00	17.00	4.30	49.00	430.00
	11/4/09	<5.00	150.00	150.00	41.00	1.40	1.70	110.00	46.00	16.00	3.30	47.00	450.00
	5/7/10	<5.00	<5.00	172.00	34.90	1.09	1.70	97.80	49.50	15.70	3.52	45.50	426.00
Dup	5/7/10	<5.00	<5.00	157.00	34.90	1.09	1.71	98.00	51.00	14.50	3.21	43.60	466.00
	11/12/10	<5.00	172.00	172.00	38.70	1.10	1.77	98.20	48.90	15.70	3.40	45.40	410.00
Dup	11/12/10	<5.00	160.00	160.00	38.70	1.10	1.76	98.30	50.50	15.30	3.44	44.80	398.00
	5/11/11	<5.00	170.00	170.00	185.00	1.20	1.60	93.00	73.00	28.40	5.68	165.00	692.00
	11/10/11	<5.00	161.00	161.00	36.90	1.06	1.41	87.40	57.10	17.00	3.46	48.60	406.00
	5/17/12	<5.00	173.00	173.00	37.90	1.09	1.59	92.90	53.30	16.40	3.83	56.70	440.00
	10/11/12	<5.00	158.00	158.00	39.90	1.29	1.83	103.00	49.00	16.60	4.30	49.00	444.00
	5/17/13	<5.00	167.00	167.00	38.30	1.37	1.70	106.00	55.30	17.50	3.67	45.90	416.00
	10/8/13	<6.00	182.00	182.00	39.50	1.17	1.78	96.20	57.40	19.70	4.35	57.60	446.00
	5/1/14	<10.00	165.00	165.00	40.60	1.12 J	1.81	106.00	55.10	19.90	3.82	52.90	436.00
	10/7/14	<4.00	176.00	176.00	8.14	0.16	1.07	30.50	40.00	4.98	7.81	35.10	259.00
	5/22/15	--	--	--	10.00	<2.00	--	30.10	--	--	--	--	252.00
	10/20/15	--	--	--	8.03	<2.00	--	32.50	--	--	--	--	146.00
	5/25/16	--	--	--	30.00	0.85	--	88.70	--	--	--	--	434.00
	10/18/16	--	--	--	4.28	<0.50	--	32.80	--	--	--	--	261.00
	05/11/17	--	--	--	9.10	<0.02	--	32.20	--	--	--	--	214.00
Dup	05/11/17	--	--	--	8.62	<0.02	--	32.20	--	--	--	--	182.00
	10/24/17	--	--	--	3.69	0.23	--	18.30	--	--	--	--	286.00
	05/22/18	--	--	--	5.22	0.32	--	21.90	--	--	--	--	282.00
	10/18/18	--	--	--	5.41	0.61	--	19.10	--	--	--	--	258.00
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	12.90	--	--	27.60	--	--	--	--	239.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-9	5/14/98	--	--	190.00	**350.00**	--	--	470.00	207.00	61.00	12.00	200.00	**1,300.00**
	2/15/01	<1.00	156.00	156.00	35.00	**2.60**	2.40	110.00	60.40	19.80	7.47	47.00	430.00
	5/16/02	<1.00	160.00	160.00	31.70	**2.22**	2.28	99.40	60.80	17.60	5.32	50.10	440.00
	10/23/02	--	--	--	39.00	--	--	102.00	--	--	--	--	436.00
	5/22/03	<1.00	160.00	160.00	31.00	**1.75**	2.19	93.30	52.20	15.80	4.75	50.20	455.00
	11/26/03	<1.00	150.00	150.00	31.80	**1.99**	2.34	99.80	57.70	16.60	4.69	46.30	452.00
	5/12/04	<1.00	164.00	164.00	33.60	**1.79**	2.29	99.20	54.80	16.00	4.27	43.50	467.00
	11/16/04	8.00	154.00	162.00	**367.00**	1.49	2.72	97.30	63.20	17.80	5.59	55.50	433.00
	5/17/05	4.00	154.00	154.00	44.20	**2.43**	3.05	117.00	58.80	16.70	5.94	44.10	434.00
	11/17/05	<10.00	161.00	161.00	83.50	1.30	0.14	111 D1	149.00	26.20	7.43	80.40	790 N
	5/9/06	<10.00	170.00	170.00	37.00	**1.80**	1.80	99.00	52.70	15.00	3.21	45.50	428.00
	11/15/06	<10.00	150.00	150.00	210.00	1.10	1.20	190.00	70.50	35.80	8.64	152.00	905.00
	5/30/07	<10.00	153.00	153.00	35.00	**2.10**	1.69	110.00	52.20	15.80	<5.00	44.70	464.00
	11/14/07	<10.00	151.00	151.00	186.00	1.49	1.48	156 D1	74.10	39.40	8.73	141.00	808.00
	5/15/08	<1.53	174.00	174.00	42.50	**2.38**	1.72	105 D1	55.60	17.00	3.99	54.1 D1	467.00
	11/4/08	<5.00	160.00	160.00	39.00	**2.10**	1.40	98.00	54.00	16.00	3.70	47.00	440.00
	5/20/09	<5.00	320.00	320.00	69.00	**2.10**	1.50	120.00	58.00	19.00	4.60	58.00	520.00
	11/4/09	<5.00	160.00	160.00	42.00	**2.20**	1.60	110.00	50.00	15.00	3.00	43.00	460.00
	5/7/10	<5.00	<5.00	162.00	50.20	**2.02**	1.66	97.50	53.60	15.70	3.32	43.50	442.00
	11/9/10	<5.00	186.00	186.00	60.70	**1.97**	1.74	98.00	59.20	18.10	3.64	50.00	446.00
	5/11/11	<5.00	160.00	160.00	80.30	**1.71**	1.72	75.70	73.90	25.80	4.61	67.90	518.00
	11/10/11	<5.00	151.00	151.00	138.00	**1.66**	1.38	107.00	82.70	26.90	4.34	65.40	582.00
	5/16/12	<5.00	162.00	162.00	137.00	**1.75**	1.61	93.50	83.80	23.20	4.39	60.30	584.00
	10/11/12	<5.00	147.00	147.00	148.00	**1.90**	1.71	98.70	80.50	25.80	4.94	59.80	644.00
	5/17/13	<5.00	144.00	144.00	246.00	**1.86**	1.61	99.30	107.00	30.20	4.43	60.20	**1,010.00**
	10/8/13	<6.00	164.00	164.00	150.00	**1.88**	1.81	99.80	90.00	25.20	4.62	60.80	620.00
	5/2/14	<10.00	143.00	143.00	**382.00**	1.56	1.77	103.00	132.00	35.70	5.74	73.70	906.00
	10/7/14	<4.00	151.00	151.00	**292.00**	0.89	1.33	98.10	136.00	41.00	4.65	67.40	**1,110.00**
	5/22/15	--	--	--	**307.00**	<8.00	--	87.70	--	--	--	--	**1,170.00**
	10/20/15	--	--	--	202.00	<4.00	--	93.70	--	--	--	--	593.00
	5/25/16	--	--	--	**404.00**	**1.61**	--	108.00	--	--	--	--	**1,430.00**
Dup	5/26/16	--	--	--	**418.00**	1.60	--	111.00	--	--	--	--	**1,430.00**
	10/18/16	--	--	--	**445.00**	1.34	--	115.00	--	--	--	--	**1,490.00**
	05/11/17	--	--	--	**481.00**	<0.22	--	118.00	--	--	--	--	**1,090.00**
	10/24/17	--	--	--	**387.00**	**2.42**	--	102.00	--	--	--	--	**1,020.00**
	05/22/18	--	--	--	**460.00**	1.28	--	119.00	--	--	--	--	**1,010.00**
	10/18/18	--	--	--	**381.00**	1.41	--	117.00	--	--	--	--	903.00
	6/20/19	--	--	--	**621.00**	--	--	--	--	--	--	--	**2,930.00**
	11/24/19	--	--	--	**337.00**	--	--	80.60	--	--	--	--	**1,170.00**
MW-9A	5/14/98	--	--	280.00	**600.00**	--	--	**770.00**	338.00	96.00	12.00	334.00	**2,200.00**
	2/15/01	<1.00	142.00	142.00	85.00	1.40	2.20	71.00	71.60	19.20	6.94	46.00	400.00
	5/15/02	<1.00	136.00	136.00	148.00	<1.00	2.18	65.30	62.90	16.10	4.62	46.80	445.00
	10/23/02	--	--	--	168.00	--	--	75.50	--	--	--	--	651.00
	5/22/03	<1.00	126.00	126.00	207.00	<1.00	2.09	62.10	102.00	25.20	4.80	55.70	672.00
	11/26/03	<1.00	118.00	118.00	216.00	1.14	2.26	62.70	107.00	25.10	5.31	53.20	648.00
	5/12/04	<1.00	122.00	122.00	242.00	<1.00	2.10	64.70	105.00	26.20	5.11	26.20	950.00
	11/16/04	<1.00	114.00	114.00	**296.00**	1.24	2.74	67.50	130.00	33.10	6.24	70.30	826.00
	5/17/05	<1.00	112.00	112.00	**354.00**	1.04	2.85	77.10	131.00	31.70	6.39	60.50	828.00
	11/17/05	<10.00	121.00	121.00	**310 D1**	0.82	0.31	74.7 D1	337.00	41.40	8.08	74.50	**1,520 N**
	5/9/06	<10.00	670.00	670.00	**270.00**	0.67	1.60	78.00	111.00	27.10	3.88	58.70	992.00
	11/15/06	<10.00	1,600.00	1,600.00	**290.00**	0.62	1.60	72.00	126.00	33.40	4.74	68.40	**1,280.00**
	5/30/07	<10.00	586.00	586.00	**400.00**	0.70	1.69	83.00	153.00	36.90	<5.00	71.80	**1,450.00**
	11/14/07	<10.00	605.00	605.00	**285 D1**	0.62	1.52	64.7 D1	153.00	35.40	5.03	70.70	**1,430.00**
	5/15/08	<1.53	738.00	738.00	**380 D1**	0.45	1.62	86.8 D1	146.00	35.50	5.45	77.2 D1	**1,390.00**
	11/4/08	<5.00	370.00	370.00	**330.00**	<1.00	1.20	84.00	130.00	32.00	5.10	66.00	1,000.00
	5/20/09	<5.00	600.00	600.00	**480.00**	0.49	1.50	86.00	170.00	43.00	6.40	76.00	**1,600.00**
	11/4/09	<5.00	110.00	110.00	**430.00**	0.49	1.60	82.00	160.00	41.00	5.30	71.00	**1,500.00**
	5/7/10	<5.00	<5.00	121.00	**510.00**	0.21	1.62	80.50	188.00	44.90	4.90	73.60	**1,680.00**
	11/9/10	<5.00	115.00	115.00	**529.00**	0.33	1.72	86.00	159.00	44.30	5.00	76.10	**1,660.00**
	5/11/11	<5.00	146.00	146.00	**587.00**	1.18	1.90	415.00	166.00	80.60	11.30	211.00	**1,850.00**
	11/10/11	<5.00	115.00	115.00	**841.00**	0.19	1.56	125.00	280.00	84.80	7.51	117.00	**2,160.00**
	5/16/12	<5.00	135.00	135.00	**958.00**	0.37	1.74	143.00	249.00	62.60	6.50	97.70	**3,450.00**
Dup	5/16/12	<5.00	128.00	128.00	**882.00**	0.31	1.70	134.00	270.00	65.70	6.72	92.30	**3,050.00**
	10/11/12	<5.00	125.00	125.00	**628.00**	0.37	1.70	121.00	235.00	60.40	6.72	94.00	**1,810.00**
	5/17/13	<5.00	137.00	137.00	**754.00**	0.34	1.67	145.00	224.00	53.90	5.49	86.80	**1,930.00**
	10/8/13	<6.00	153.00	153.00	**534.00**	0.37	1.69	118.00	185.00	43.10	5.23	81.30	**1,210.00**
	10/7/14	Not Sampled											
	10/20/2015	--	--	--	232.00	<4.00	--	95.40	--	--	--	--	599.00
	10/18/16	--	--	--	**337.00**	<0.50	--	113.00	--	--	--	--	**1,250.00**
	10/24/17	--	--	--	206.00	<0.50	--	96.60	--	--	--	--	681.00
	10/18/18	--	--	--	**276.00**	0.60	--	119.00	--	--	--	--	816.00
	06/20/19	--	--	--	**268.00**	--	--	--	--	--	--	--	**1,220.00**
	11/24/19	--	--	--	231.00	--	--	83.20	--	--	--	--	838.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-10	5/14/98	--	--	240.00	**360.00**	--	--	450.00	211.00	62.00	11.00	190.00	**1,400.00**
	2/15/01	<1.00	140.00	140.00	190.00	**2.00**	2.30	97.00	108.00	32.30	8.20	61.00	660.00
	5/17/02	<1.00	152.00	152.00	204.00	**1.93**	2.19	99.10	109.00	31.70	7.60	62.40	713.00
	10/22/02	--	--	--	213.00	--	--	108.00	--	--	--	--	758.00
	5/22/03	<1.00	152.00	152.00	213.00	1.45	2.17	96.60	109.00	29.90	8.65	74.20	764.00
	11/26/03	<1.00	152.00	152.00	220.00	1.54	2.26	103.00	120.00	35.70	6.96	64.00	752.00
	5/13/04	<1.00	158.00	158.00	232.00	1.39	2.23	102.00	114.00	31.60	5.95	57.20	802.00
	11/17/04	<1.00	170.00	170.00	245.00	**1.73**	2.78	104.00	121.00	35.70	7.07	70.30	764.00
	5/17/05	<1.00	150.00	150.00	233.00	**1.77**	2.80	106.00	113.00	32.30	6.83	60.20	776.00
	11/17/05	<10.00	151.00	151.00	205 D1	1.20	0.26	111 D1	482.00	47.40	13.10	82.40	970 N
	5/9/06	<10.00	190.00	190.00	180.00	1.40	1.60	98.00	93.30	27.10	4.31	60.40	724.00
	11/16/06	<10.00	320.00	320.00	190.00	1.20	1.60	92.00	101.00	30.00	4.75	64.10	900.00
	5/30/07	<10.00	340.00	340.00	200.00	1.40	1.68	110.00	101.00	28.60	<5.00	62.40	820.00
	11/15/07	<10.00	189.00	189.00	**251 D1**	1.44	1.44	152 D1	104.00	33.40	6.01	84.70	**1,010.00**
	5/15/08	<1.53	374.00	374.00	**342 D1**	1.47	1.28	257 D1	106.00	52.90	11.70	165 D1	**1,140.00**
	11/6/08	<5.00	150.00	150.00	210.00	1.50	1.30	89.00	110.00	32.00	5.40	64.00	730.00
	5/20/09	<5.00	240.00	240.00	**270.00**	1.30	1.50	120.00	110.00	35.00	6.20	72.00	960.00
	11/4/09	<5.00	150.00	150.00	240.00	1.50	1.30	130.00	100.00	35.00	5.40	78.00	1,000.00
	5/7/10	<5.00	<5.00	157.00	236.00	1.18	1.62	106.00	111.00	30.70	4.59	60.30	940.00
	11/10/10	<5.00	166.00	166.00	**280.00**	1.16	1.61	112.00	98.40	36.90	5.63	81.00	812.00
	5/11/11	<5.00	157.00	157.00	**274.00**	1.11	1.99	87.20	117.00	32.20	5.63	85.00	930.00
	11/15/11	<5.00	150.00	150.00	**266.00**	1.03	6.93	94.90	128.00	32.30	4.58	62.80	**1,450.00**
	5/16/12	<5.00	163.00	163.00	**284.00**	1.12	1.58	99.90	132.00	36.80	5.22	72.90	**1,120.00**
	10/11/12	<5.00	151.00	151.00	**255.00**	1.32	1.75	98.70	113.00	34.30	5.68	67.60	**1,010.00**
	5/17/13	<5.00	154.00	154.00	**299.00**	1.34	1.61	108.00	117.00	33.70	4.57	64.60	**1,180.00**
	10/8/13	<6.00	165.00	165.00	**324.00**	1.14	1.62	103.00	154.00	41.60	5.36	78.10	**1,240.00**
	5/1/14	<10.00	156.00	156.00	**298.00**	1.05 J	1.58	111.00	135.00	41.60	5.30	75.50	**1,050.00**
Dup	5/1/14	<10.00	158.00	158.00	**301.00**	<0.10 J	1.66	112.00	134.00	42.50	5.29	79.50	**1,080.00**
	10/7/14	<4.00	163.00	163.00	249.00	0.71	1.64	108.00	127.00	36.80	4.91	67.20	**1,050.00**
	5/22/15	--	--	--	**298.00**	<8.00	--	102.00	--	--	--	--	975.00
	10/20/15	--	--	--	250.00	<4.00	--	108.00	--	--	--	--	823.00
	5/25/16	--	--	--	**307.00**	1.44	--	107.00	--	--	--	--	**1,080.00**
	10/18/16	--	--	--	**330.00**	0.86	--	103.00	--	--	--	--	**1,350.00**
	05/11/17	--	--	--	**353.00**	<0.22	--	112.00	--	--	--	--	**1,080.00**
	10/24/17	--	--	--	240.00	1.60	--	97.00	--	--	--	--	742.00
	05/22/18	--	--	--	**346.00**	0.97	--	113.00	--	--	--	--	**1,070.00**
	10/18/18	--	--	--	**351.00**	1.10	--	118.00	--	--	--	--	892.00
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	230.00	--	--	78.00	--	--	--	--	826.00
MW-11	1/22/99	30.00	<1.00	30.00	46.00	**2.30**	4.20	94.00	33.00	7.00	9.10	58.00	370.00
	2/15/01	<1.00	156.00	156.00	37.00	**2.40**	2.40	120.00	64.00	19.10	7.83	50.10	360.00
	5/16/02	<1.00	160.00	160.00	31.90	**2.13**	2.33	98.80	63.50	17.20	4.83	47.00	444.00
	10/23/02	--	--	--	37.20	--	--	102.00	--	--	--	--	447.00
	5/22/03	12.00	154.00	166.00	32.30	**1.74**	2.28	96.70	62.30	0.00	4.63	47.60	437.00
	11/26/03	<1.00	160.00	160.00	32.40	**1.83**	2.23	96.40	59.20	16.60	4.67	48.60	448.00
	5/12/04	<1.00	164.00	164.00	34.60	**1.71**	2.38	97.70	54.80	15.70	4.28	46.20	457.00
	11/16/04	<1.00	160.00	160.00	39.00	**2.17**	2.81	100.00	65.20	16.80	5.14	54.30	454.00
	5/17/05	4.00	158.00	162.00	43.10	**1.87**	2.82	94.60	68.40	16.90	6.45	44.00	429.00
	11/17/05	<10.0	161.00	161.00	58.10	1.50	2.10	91.3 D1	75.00	17.70	4.55	64.70	700 N
	5/9/06	<10.00	180.00	180.00	37.00	**1.80**	1.70	100.00	54.10	16.20	3.26	46.90	456.00
	11/14/06	<10.00	170.00	170.00	34.00	**1.80**	1.80	110.00	58.00	18.20	4.13	53.40	532.00
	5/30/07	<10.00	142.00	142.00	36.00	**1.90**	1.79	120.00	54.00	16.70	<5.00	50.80	456.00
	11/14/07	<10.00	189.00	189.00	42.30	**1.98**	1.54	95.6 D1	57.20	17.40	<5.000	52.40	452.00
	5/15/08	<1.53	177.00	177.00	72.4 D1	**1.86**	1.71	141.00	58.00	19.40	4.93	66.5 D1	544.00
	11/4/08	<5.00	170.00	170.00	49.00	1.50	1.30	90.00	60.00	16.00	3.60	47.00	440.00
	5/20/09	<5.00	360.00	360.00	40.00	**2.20**	1.70	130.00	51.00	17.00	4.50	53.00	450.00
	11/4/09	<5.00	150.00	150.00	43.00	1.60	1.60	100.00	52.00	15.00	2.90	42.00	470.00
	5/7/10	<5.00	<5.00	167.00	36.50	**1.97**	1.78	117.00	49.70	14.90	3.42	44.70	494.00
	11/9/10	<5.00	269.00	269.00	52.50	1.45	1.79	95.40	61.00	16.70	3.56	50.00	438.00
	5/11/11	<5.00	161.00	161.00	133.00	1.43	2.08	140.00	78.10	37.00	6.32	103.00	664.00
Dup	5/11/11	<5.00	161.00	161.00	130.00	1.44	2.01	137.00	77.40	37.00	6.29	104.00	706.00
	11/10/11	<5.00	162.00	162.00	38.80	**1.86**	1.49	97.10	66.20	17.90	3.62	52.30	420.00
	5/17/12	<5.00	176.00	176.00	45.80	1.29	1.62	88.50	63.60	16.30	3.66	53.40	456.00
	10/11/12	<5.00	166.00	166.00	44.60	1.49	1.74	95.10	55.80	15.80	3.80	49.30	440.00
	5/17/13	<5.00	171.00	171.00	43.60	**1.87**	1.67	106.00	57.70	14.80	3.18	42.90	428.00
	10/8/13	<6.00	178.00	178.00	45.20	1.55	1.74	95.50	60.90	16.10	3.33	52.00	450.00
	5/1/14	<10.00	173.00	173.00	63.30	<0.10	2.06	93.30	64.40	17.60	3.38	51.50	434.00
	10/7/14	<4.00	176.00	176.00	34.70	1.10	1.71	101.00	59.20	16.70	3.06	46.50	399.00
	5/22/15	--	--	--	40.40	<4.00	--	87.20	--	--	--	--	428.00
	10/20/15	--	--	--	37.60	<2.00	--	89.30	--	--	--	--	356.00
	5/25/16	--	--	--	34.30	**1.87**	--	103.00	--	--	--	--	475.00
	10/18/16	--	--	--	39.30	0.87	--	96.40	--	--	--	--	418.00
	05/11/17	--	--	--	35.10	<0.11	--	110.00	--	--	--	--	416.00
	10/24/17	--	--	--	35.10	**1.87**	--	95.30	--	--	--	--	438.00
	05/22/18	--	--	--	34.60	1.58	--	110.00	--	--	--	--	421.00
Dup	05/22/18	--	--	--	34.50	**1.64**	--	110.00	--	--	--	--	415.00
	10/18/18	--	--	--	36.90	**1.69**	--	114.00	--	--	--	--	413.00
	06/20/19	--	--	--	34.40	--	--	--	--	--	--	--	407.00
	11/24/19	--	--	--	45.80	--	--	113.00	--	--	--	--	364.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-12*	5/15/02	<1.00	160.00	160.00	58.30	1.09	2.44	91.30	53.50	15.90	5.52	50.30	462.00
	10/23/02	--	--	--	65.00	--	--	102.00	--	--	--	--	477.00
	5/22/03	<1.00	148.00	148.00	91.10	1.04	2.30	87.70	74.20	21.00	4.89	57.60	516.00
	11/25/03	<1.00	142.00	142.00	93.10	1.18	2.36	90.90	74.70	20.90	5.41	52.50	548.00
	5/12/04	<1.00	458.00	458.00	72.90	1.04	2.35	86.70	58.10	19.00	5.92	51.80	489.00
	11/15/04	<1.00	184.00	184.00	79.80	1.39	2.83	88.80	59.70	21.50	16.50	77.40	512.00
	11/17/05	<10.00	151.00	151.00	109.00	0.93	0.12	94.6 D1	193.00	26.60	13.40	87.50	700.00
	11/16/06	<10.00	270.00	270.00	120.00	0.71	1.70	84.00	82.30	27.00	4.82	62.20	620.00
	11/16/07	<10.00	170.00	170.00	**258.00**	1.21	1.55	191 D1	77.20	42.70	11.00	154.00	**1,270.00**
	11/6/08	<5.00	130.00	130.00	110.00	0.89	1.40	79.00	61.00	20.00	4.50	52.00	460.00
	11/3/09	<25.00	2,000.00	2,000.00	120.00	0.87	1.60	98.00	68.00	24.00	6.00	79.00	600.00
	11/9/10	<5.00	144.00	144.00	211.00	0.57	1.76	89.80	75.60	27.80	4.60	60.60	712.00
	11/10/11	<5.00	134.00	134.00	179.00	0.46	1.37	92.80	93.80	27.80	4.53	64.00	594.00
	10/11/12	<5.00	145.00	145.00	179.00	0.71	0.79	86.50	80.40	25.40	5.44	62.90	724.00
	10/8/13	<6.00	160.00	160.00	246.00	0.62	1.64	84.50	110.00	30.40	4.92	67.80	944.00
	10/7/14	<4.00	145.00	145.00	200.00	0.29	1.70	86.80	93.10	29.30	5.06	65.00	765.00
	10/21/15	--	--	--	165.00	<4.00	--	72.60	--	--	--	--	487.00
	10/18/16	--	--	--	**270.00**	<0.50	--	95.00	--	--	--	--	888.00
	10/24/17	--	--	--	150.00	<0.50	--	64.90	--	--	--	--	579.00
Dup	10/24/17	--	--	--	149.00	<0.50	--	64.80	--	--	--	--	565.00
	10/18/18	--	--	--	**290.00**	0.74	--	106.00	--	--	--	--	790.00
	06/20/19	--	--	--	**254.00**	--	--	--	--	--	--	--	580.00
	11/23/19	--	--	--	**337.00**	--	--	140.00	--	--	--	--	**1,010.00**
MW-13*	5/13/02	<1.00	100.00	100.00	**517.00**	<1.00	1.61	437.00	116.00	76.00	19.40	269.00	**1,596.00**
	10/23/02	--	--	--	**549.00**	--	--	370.00	--	--	--	--	**1,740.00**
	5/22/03	<1.00	186.00	186.00	**944.00**	<2.00	2.33	361.00	289.00	101.00	15.30	458.00	**3,060.00**
	11/25/03	<1.00	226.00	226.00	**1,460.00**	<2.00	2.22	372.00	369.00	117.00	20.00	478.00	**3,445.00**
	5/12/04	<1.00	234.00	234.00	**1,550.00**	<4.00	4.58	369.00	384.00	114.00	18.60	485.00	**4,240.00**
	11/15/04	<1.00	226.00	226.00	**1,870.00**	<2.00	4.92	384.00	510.00	164.00	16.50	627.00	**3,600.00**
	11/17/05	<10.00	201.00	201.00	**722.00**	1.00	2.50	206 D1	786.00	91.60	19.70	276.00	**2,350.00**
	11/16/06	<10.00	1,500.00	1,500.00	**2,000.00**	<0.50 N	2.70	500 N	529.00	176.00	14.20	493.00	**5,060.00**
	11/16/07	<10.00	236.00	236.00	**2,000.00**	0.33	3.05 D1	312 D1	361.00	105.00	11.40	553 D1	**6,320.00**
	11/6/08	<5.00	180.00	180.00	**970.00**	0.98	1.80	280.00	240.00	96.00	17.00	370.00	**2,400.00**
	11/3/09	<25.00	15,000.00	15,000.00	**2,200.00**	<0.50	2.60	440.00	490.00	180.00	22.00	490.00	**5,600.00**
	11/9/10	<5.00	267.00	267.00	**1,680.00**	0.22	2.82	405.00	400.00	120.00	10.40	540.00	**4,270.00**
	11/10/11	<5.00	206.00	206.00	**2,110.00**	0.18	<0.50	273.00	690.00	223.00	13.20	472.00	**4,870.00**
	10/11/12	<5.00	204.00	204.00	**2,360.00**	0.31	2.70	422.00	706.00	228.00	14.40	423.00	**6,290.00**
	10/8/13	<6.00	1,780.00	1,780.00	**2,710.00**	0.30	2.59	448.00	768.00	225.00	14.00	457.00	**7,320.00**
	10/7/14	<4.00	267.00	267.00	**1,430.00**	<0.10	1.91	379.00	355.00	109.00	11.30	612.00	**3,940.00**
	10/21/15	--	--	--	**1,400.00**	<40.0	--	353.00	--	--	--	--	**3,260.00**
	10/18/16	--	--	--	**1,940.00**	<0.50	--	440.00	--	--	--	--	**5,310.00**
	Well Plugged and Abandoned on 7/11/2017												
MW-14	10/8/13	<6.00	267.00	267.00	162.00	**3.69**	<0.10	127.00	74.40	32.30	8.42	145.00	854.00
Dup	10/8/13	<6.00	271.00	271.00	166.00	**3.74**	<0.10	130.00	60.70	26.30	7.97	145.00	848.00
	5/1/14	<10.00	199.00	199.00	64.00	1.19 J	<0.10	84.90	60.80	21.70	3.82	59.80	468.00
	10/7/14	<4.00	227.00	2,227.00	95.20	0.79	<0.023	22.90	71.30	24.90	3.99	61.80	460.00
Dup	10/7/14	<4.00	194.00	194.00	55.70	1.36	<0.023	88.80	59.30	19.10	3.21	49.50	490.00
	5/22/15	--	--	--	77.80	<4.00	--	45.40	--	--	--	--	468.00
Dup	5/22/15	--	--	--	77.40	<4.00	--	49.00	--	--	--	--	470.00
	10/20/15	--	--	--	29.1 J	<2.00	--	53.5 J	--	--	--	--	294.00
Dup	10/21/15	--	--	--	58.9 J	<2.00	--	101 J	--	--	--	--	407.00
	5/25/16	--	--	--	79.00	1.37	--	19.90	--	--	--	--	552.00
	10/18/16	--	--	--	51.80	1.07	--	104.00	--	--	--	--	422.00
Dup	10/18/16	--	--	--	61.20	1.25	--	108 J	--	--	--	--	459.00
	05/11/17	--	--	--	70.50	<0.11	--	17.70	--	--	--	--	412.00
	10/24/17	--	--	--	57.40	**1.77**	--	42.20	--	--	--	--	423.00
	05/22/18	--	--	--	54.90	1.20	--	47.80	--	--	--	--	390.00
	10/18/18	--	--	--	57.20	1.35	--	47.20	--	--	--	--	401.00
	06/20/19	--	--	--	42.10	--	--	--	--	--	--	--	481.00
	11/24/19	--	--	--	37.10	--	--	94.50	--	--	--	--	328.00
Dup	11/24/19	--	--	--	40.40	--	--	95.90	--	--	--	--	324.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
RW-1	5/27/99	0.00	224.00	224.00	**8,700.00**	**2.70**	7.00	**840.00**	679.00	521.00	34.00	3,290.00	**14,000.00**
	5/22/03	<1.00	190.00	190.00	**2,410.00**	**2.46**	4.23	345.00	162.00	145.00	25.40	1,180.00	**5,260.00**
	11/26/03	<1.00	184.00	184.00	**1,990.00**	<4.00	**20.00**	324.00	199.00	147.00	38.60	1,080.00	**5,050.00**
	5/11/04	<1.00	148.00	148.00	**491.00**	1.32	2.65	109.00	66.30	23.40	11.20	252.00	**1,224.00**
	11/17/04	<1.00	160.00	160.00	**633.00**	**1.65**	3.23	121.00	89.70	43.50	18.00	382.00	**1,314.00**
	11/17/05	<10.00	221.00	221.00	**895.00**	1.00	1.40	166 D1	122.00	70.90	8.40	493.00	**2,380.00**
	11/16/06	<10.00	380.00	380.00	**11,000.00**	<0.50	<20.00 HC	**1,100.00**	539.00	694.00	43.30	5,580.00	**22,000.00**
	11/15/07	<10.00	359.00	359.00	**2,380.00**	1.26	3.74 D1	252 D1	141.00	137.00	16.00	1,100 D1	**5,280.00**
Dup	11/15/07	<10.00	208.00	208.00	**2,620.00**	1.24	3.85 D1	316 D1	136.00	133.00	15.50	1,040 D1	**5,360.00**
	11/12/08	<5.00	210.00	210.00	**370.00**	0.82	1.90	97.00	66.00	34.00	5.00	190.00	920.00
	11/4/09	<5.00	170.00	170.00	**1,700.00**	1.10	2.60	250.00	110.00	120.00	22.00	750.00	**3,800.00**
	11/11/10	<5.00	192.00	192.00	**1,340.00**	0.72	2.72	204.00	95.50	104.00	12.60	792.00	**2,830.00**
	11/10/11	<5.00	396.00	396.00	**14,000.00**	**3.32**	9.16	**1,540.00**	942.00	1,260.00	44.60	8,720.00	**32,200.00**
	10/11/12	<5.00	263.00	263.00	**6,530.00**	**2.19**	4.75	**625.00**	314.00	445.00	28.00	3,490.00	**10,100.00**
Dup	10/11/12	<5.00	286.00	286.00	**2,440.00**	0.31	1.23	194.00	128.00	156.00	18.60	1,260.00	**17000****
	10/8/13	<6.00	285.00	285.00	**6,050.00**	0.95	4.29	546.00	760.00	919.00	39.00	6,370.00	**11,200.00**
Dup	10/8/13	<6.00	216.00	216.00	**10,500.00**	1.27	5.98	**926.00**	490.00	581.00	31.40	4,170.00	**1870****
	10/7/14	<4.00	207.00	207.00	**2,240.00**	1.36	3.62	338.00	69.60	106.00	24.00	1,130.00	**2,760.00**
Dup	10/7/14	<4.00	192.00	192.00	**2,570.00**	**2.51**	3.70	363.00	82.30	125.00	26.80	1,350.00	**1970****
	10/21/15	--	--	--	**9,110.00**	<80.00	--	**953 J**	--	--	--	--	**15,300.00**
Dup	10/20/15	--	--	--	**10,200.00**	<200.00	--	**1,120 J**	--	--	--	--	**21,600.00**
	12/15/15	--	--	--	**1,130.00**	--	--	--	--	--	--	--	**2,290.00**
	12/16/15	--	--	--	**1,190.00**	--	--	--	--	--	--	--	**2,580.00**
	12/17/15	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,260.00**
	12/18/15	--	--	--	**988.00**	--	--	--	--	--	--	--	**2,350.00**
	1/4/16	--	--	--	**1,200.00**	--	--	--	--	--	--	--	**2,280.00**
	1/5/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,190.00**
	1/6/16	--	--	--	**1,120.00**	--	--	--	--	--	--	--	**2,240.00**
	1/7/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,200.00**
	1/8/16	--	--	--	**1,310.00**	--	--	--	--	--	--	--	**2,370.00**
	1/11/16	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,210.00**
	1/12/16	--	--	--	**1,520.00**	--	--	--	--	--	--	--	**2,850.00**
	10/18/16	--	--	--	**277.00**	<0.50	--	87.50	--	--	--	--	715.00
Dup	10/18/16	--	--	--	**316.00**	<0.50	--	88.9 J	--	--	--	--	922.00
	10/25/17	--	--	--	**254.00**	1.02	--	75.50	--	--	--	--	**2,040.00**
	10/16/18***	--	--	--	**304.00**	0.61	--	93.40	--	--	--	--	757.00
	10/18/18	--	--	--	**7,870.00**	<0.10	--	**807.00**	--	--	--	--	**15,400.00**
Dup	10/18/18	--	--	--	**7,830.00**	<0.10	--	**873.00**	--	--	--	--	**12,700.00**
	6/20/19	--	--	--	**9,290.00**	--	--	--	--	--	--	--	**22,100.00**
Dup	6/20/19	--	--	--	**9,200.00**	--	--	--	--	--	--	--	**22,800.00**
	11/24/19	--	--	--	**5,780.00**	--	--	**722.00**	--	--	--	--	**12,200.00**
RW-2	5/22/03	324.00	<4.00	780.00	**1,580.00**	<2.00	2.43	23.90	1,060.00	<0.500	20.20	258.00	**4,310.00**
	11/26/03	64.00	<4.00	704.00	**1,480.00**	<5.00	5.81	38.30	988.00	<0.500	23.80	240.00	**3,535.00**
	11/17/04	104.00	<4.00	692.00	**2,280.00**	<10.00	<10.00	116.00	1,180.00	<0.500	18.50	415.00	**3,915.00**
	11/17/05	281.00	<10.00	422.00	**1,770.00**	0.89	0.60	175 D1	861.00	16.60	13.10	361.00	**7,350.00**
	11/16/06	49.00	150.00	199.00	**2,500.00**	0.57	1.90	370.00	978.00	48.80	18.00	437.00	**5,270.00**
	11/15/07	170.00	37.80	208.00	**1,680.00**	0.49	1.52	166 D1	586.00	<5.000	11.20	245.00	**5,590.00**
	11/12/08	150.00	<5.00	390.00	**2,500.00**	<0.50	0.24	250.00	1,200.00	<0.38	6.00	400.00	**4,800.00**
	11/4/09	34.00	<5.00	220.00	**2,200.00**	<0.50	1.70	240.00	940.00	0.18	16.00	420.00	**6,300.00**
	11/11/10	113.00	<5.00	172.00	**2,100.00**	<0.50	2.03	233.00	967.00	4.06	8.86	426.00	**4,550.00**
	11/10/11	36.90	<5.00	384.00	**4,330.00**	<10.00	2.13	305.00	2,040.00	1.12	18.70	711.00	**8,300.00**
	10/11/12	27.10	<5.00	202.00	**1,920.00**	<0.50	1.93	223.00	842.00	0.46	9.30	385.00	**6,680.00**
Dup	10/11/12	31.90	<5.00	206.00	**2,310.00**	<0.50	1.98	228.00	1,090.00	2.42	10.50	430.00	**5,250.00**
	10/8/13	66.30	<6.00	117.00	**2,450.00**	0.14	2.36	309.00	1,570.00	2.15	15.30	639.00	**4,420.00**
	10/7/14	35.20	<4.00	35.20	**2,250.00**	<0.10	2.52	378.00	995.00	21.60	10.30	408.00	**3,090.00**
	10/20/15	--	--	--	**699.00**	<20.00	--	118.00	--	--	--	--	**2,190.00**
	12/15/15	--	--	--	**1,130.00**	--	--	--	--	--	--	--	**2,290.00**
	12/16/15	--	--	--	**1,190.00**	--	--	--	--	--	--	--	**2,580.00**
	12/17/15	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,260.00**
	12/18/15	--	--	--	**988.00**	--	--	--	--	--	--	--	**2,350.00**
	1/4/16	--	--	--	**1,200.00**	--	--	--	--	--	--	--	**2,280.00**
	1/5/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,190.00**
	1/6/16	--	--	--	**1,120.00**	--	--	--	--	--	--	--	**2,240.00**
	1/7/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,200.00**
	1/8/16	--	--	--	**1,310.00**	--	--	--	--	--	--	--	**2,370.00**
	1/11/16	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,210.00**
	1/12/16	--	--	--	**1,520.00**	--	--	--	--	--	--	--	**2,850.00**
	10/18/16	--	--	--	**1,450.00**	<0.50	--	270.00	--	--	--	--	**3,910.00**
	10/25/17	--	--	--	**1,760.00**	<5.00	--	288.00	--	--	--	--	**4,440.00**
	10/18/18	--	--	--	**3,640.00**	<0.10	--	534.00	--	--	--	--	**6,890.00**
	6/20/19	--	--	--	**3,180.00**	--	--	--	--	--	--	--	**10,200 H**
	11/24/19	--	--	--	**3,510.00**	--	--	464.00	--	--	--	--	**9,880.00**
RW-2R	10/8/13	<6.00	146.00	146.00	**6,550.00**	0.45	1.79	**762.00**	1,850.00	616.00	25.50	1,350.00	**14,600.00**
	10/7/14	<4.00	169.00	169.00	**5,400.00**	1.56	2.17	**707.00**	1,280.00	470.00	20.90	1,170.00	**13,200.00**
	10/20/15	--	--	--	**5,990.00**	<80.00	--	**806.00**	--	--	--	--	**16,200.00**
	10/18/16	--	--	--	**6,390.00**	<0.50	--	**797.00**	--	--	--	--	**15,200.00**
	10/25/17	--	--	--	**7,030.00**	<5.00	--	**872.00**	--	--	--	--	**12,300.00**
	10/16/18***	--	--	--	**1,960.00**	<0.10	--	467.00	--	--	--	--	**3,380.00**
	10/18/18	--	--	--	**7,920.00**	<0.10	--	**891.00**	--	--	--	--	**13,700.00**

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
Dup	10/18/18	--	--	--	**8,060.00**	<0.10	--	**815.00**	--	--	--	--	**13,300.00**
	6/20/19	--	--	--	**7,860.00**	--	--	--	--	--	--	--	**29,400.00**
	11/24/19	--	--	--	**7,720.00**	--	--	**943.00**	--	--	--	--	**21,000.00**

Notes:
1. Bold value indicates a laboratory detection and New Mexico Water Quality Control Commission (NMWQCC) exceedance.
2. Results shown in mg/L.
3. NS - Not Sampled
4. D1 - The analysis was performed at a dilution due to the high analyte concentration.
5. H - The analysis was performed past holding time.
6. C - Elevated detection limit due to matrix effect.
7. J - Estimated Concentration
8. < - Analyte detected below quantitation limit
9. [1] Human Health Standards for Groundwater.
10. [2] Other Standards for Domestic Water Supply.
11. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
12. ** - Reported TDS concentration includes a low bias. Not used in trend comparison.
13. *** - Indicates groundwater monitor well that was sampled prior to semiannual groundwater event via low-flow purge for internal use.

APPENDIX D

Analytical Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 600-187419-1
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 1:40:31 PM

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

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron Kegan Boyer

Laboratory Job ID: 600-187419-1

Table of Contents

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron Kegan Boyer

Job ID: 600-187419-1

Job ID: 600-187419-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-187419-1

Comments
No additional comments.

Receipt
The samples were received on 6/21/2019 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.5° C and 1.7° C.

All applicable analytical narratives can be found in the TRRP Checklist section of this report.

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	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"

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: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-187419-1	MW - 12	Water	06/20/19 08:52	06/21/19 10:19	
600-187419-2	MW - 3	Water	06/20/19 09:32	06/21/19 10:19	
600-187419-3	MW - 1	Water	06/20/19 09:38	06/21/19 10:19	
600-187419-4	MW - 2A	Water	06/20/19 09:44	06/21/19 10:19	
600-187419-5	MW - 2	Water	06/20/19 09:47	06/21/19 10:19	
600-187419-6	MW - 6R	Water	06/20/19 09:53	06/21/19 10:19	
600-187419-7	DUP - 1	Water	06/20/19 00:00	06/21/19 10:19	
600-187419-8	MW - 5	Water	06/20/19 10:05	06/21/19 10:19	
600-187419-9	MW - 5A	Water	06/20/19 10:08	06/21/19 10:19	
600-187419-10	RW - 1	Water	06/20/19 10:14	06/21/19 10:19	
600-187419-11	DUP -2	Water	06/20/19 00:00	06/21/19 10:19	
600-187419-12	MW - 4	Water	06/20/19 10:22	06/21/19 10:19	
600-187419-13	MW - 4A	Water	06/20/19 10:24	06/21/19 10:19	
600-187419-14	RW - 6R	Water	06/20/19 10:49	06/21/19 10:19	
600-187419-15	RW - 2	Water	06/20/19 10:51	06/21/19 10:19	
600-187419-16	MW - 14	Water	06/20/19 11:05	06/21/19 10:19	
600-187419-17	MW - 7	Water	06/20/19 11:20	06/21/19 10:19	
600-187419-18	MW - 9	Water	06/20/19 11:30	06/21/19 10:19	
600-187419-19	MW - 9A	Water	06/20/19 11:34	06/21/19 10:19	
600-187419-20	MW - 11	Water	06/20/19 11:41	06/21/19 10:19	
600-187419-21	EB - 1	Water	06/20/19 12:50	06/21/19 10:19	

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 12
Lab Sample ID: 600-187419-1
Date Collected: 06/20/19 08:52
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	254		0.400	0.0534	mg/L			06/28/19 22:18	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	580		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 3
Lab Sample ID: 600-187419-2
Date Collected: 06/20/19 09:32
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.0		0.400	0.0534	mg/L			06/28/19 22:38	5

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	448		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 1
Lab Sample ID: 600-187419-3
Date Collected: 06/20/19 09:38
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1110		0.400	0.0534	mg/L			06/28/19 22:58	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2510		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 2A
Lab Sample ID: 600-187419-4
Date Collected: 06/20/19 09:44
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86.5		0.400	0.0534	mg/L			06/28/19 23:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	554		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 2
Lab Sample ID: 600-187419-5
Date Collected: 06/20/19 09:47
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	283		0.400	0.0534	mg/L			06/29/19 00:58	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	960		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 6R
Lab Sample ID: 600-187419-6
Date Collected: 06/20/19 09:53
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.1		0.400	0.0534	mg/L			06/29/19 01:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	482		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: DUP - 1
Lab Sample ID: 600-187419-7
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	64.4		0.400	0.0534	mg/L			06/29/19 02:18	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	592		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 5
Lab Sample ID: 600-187419-8
Date Collected: 06/20/19 10:05
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		0.400	0.0534	mg/L			06/29/19 02:38	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4280		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 5A
Lab Sample ID: 600-187419-9
Date Collected: 06/20/19 10:08
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	118		0.400	0.0534	mg/L			06/29/19 02:58	5

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	650		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 1
Lab Sample ID: 600-187419-10
Date Collected: 06/20/19 10:14
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9290		0.400	0.0534	mg/L			06/29/19 03:18	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	22100		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: DUP -2
Lab Sample ID: 600-187419-11
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9200		0.400	0.0534	mg/L			06/29/19 03:38	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	22800		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 4
Lab Sample ID: 600-187419-12
Date Collected: 06/20/19 10:22
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2760		0.400	0.0534	mg/L			06/29/19 03:58	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7830		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 4A
Lab Sample ID: 600-187419-13
Date Collected: 06/20/19 10:24
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	336		0.400	0.0534	mg/L			06/29/19 04:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1040		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 6R
Lab Sample ID: 600-187419-14
Date Collected: 06/20/19 10:49
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7860		0.400	0.0534	mg/L			06/29/19 05:18	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	29400		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 2
Lab Sample ID: 600-187419-15
Date Collected: 06/20/19 10:51
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3180		0.400	0.0534	mg/L			06/29/19 06:18	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10200	H	10.0	10.0	mg/L			07/01/19 11:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 14
Lab Sample ID: 600-187419-16
Date Collected: 06/20/19 11:05
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.1		0.400	0.0534	mg/L			06/29/19 06:38	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	481		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 7
Lab Sample ID: 600-187419-17
Date Collected: 06/20/19 11:20
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4210		0.400	0.0534	mg/L			06/29/19 06:58	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15500		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 9
Lab Sample ID: 600-187419-18
Date Collected: 06/20/19 11:30
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	621		0.400	0.0534	mg/L			06/29/19 07:18	50

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2930		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 9A
Lab Sample ID: 600-187419-19
Date Collected: 06/20/19 11:34
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	268		0.400	0.0534	mg/L			06/29/19 07:38	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1220		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 11
Lab Sample ID: 600-187419-20
Date Collected: 06/20/19 11:41
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.4		0.400	0.0534	mg/L			06/29/19 07:58	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	407		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: EB - 1
Lab Sample ID: 600-187419-21
Date Collected: 06/20/19 12:50
Matrix: Water
Date Received: 06/21/19 10:19

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			07/01/19 16:21	1

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**70.0**		10.0	10.0	mg/L			06/27/19 12:49	1

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

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
H	Sample was prepped or analyzed beyond the specified holding time
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.
¤	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: 600-187419-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-268268/35
Matrix: Water
Analysis Batch: 268268

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			06/28/19 23:18	1

Lab Sample ID: MB 600-268268/4
Matrix: Water
Analysis Batch: 268268

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			06/28/19 12:57	1

Lab Sample ID: LCS 600-268268/36
Matrix: Water
Analysis Batch: 268268

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	19.05		mg/L		95	90 - 110

Lab Sample ID: LCS 600-268268/5
Matrix: Water
Analysis Batch: 268268

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	19.60		mg/L		98	90 - 110

Lab Sample ID: 600-187419-5 MS
Matrix: Water
Analysis Batch: 268268

Client Sample ID: MW - 2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	283		200	439.7	N1	mg/L		79	80 - 120

Lab Sample ID: 600-187419-5 MSD
Matrix: Water
Analysis Batch: 268268

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	283		200	444.5		mg/L		81	80 - 120	1	20

Lab Sample ID: 600-187419-14 MS
Matrix: Water
Analysis Batch: 268268

Client Sample ID: RW - 6R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7860		5000	11760	N1	mg/L		78	80 - 120

Lab Sample ID: 600-187419-14 MSD
Matrix: Water
Analysis Batch: 268268

Client Sample ID: RW - 6R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7860		5000	11760	N1	mg/L		78	80 - 120	0	20

QC Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Method: 300.0 - Anions, Ion Chromatography

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 600-268404/5
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

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-268092/1
Matrix: Water
Analysis Batch: 268092
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			06/26/19 15:14	1

Lab Sample ID: LCS 600-268092/2
Matrix: Water
Analysis Batch: 268092
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	1789		mg/L		99	90 - 110

Lab Sample ID: 600-187419-5 DU
Matrix: Water
Analysis Batch: 268092
Client Sample ID: MW - 2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	960		934.0		mg/L		3	10

Lab Sample ID: MB 600-268191/1
Matrix: Water
Analysis Batch: 268191
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			06/27/19 12:49	1

Lab Sample ID: LCS 600-268191/2
Matrix: Water
Analysis Batch: 268191
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	1834		mg/L		102	90 - 110

QC Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 600-187419-13 DU
Client Sample ID: MW - 4A
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 268191

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1040			1072		mg/L				3	10

Lab Sample ID: 600-187419-18 DU
Client Sample ID: MW - 9
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 268191

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2930			2976		mg/L				2	10

Lab Sample ID: MB 600-268421/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 268421

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			07/01/19 11:28	1

Lab Sample ID: LCS 600-268421/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 268421

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1800	1721		mg/L		96	90 - 110		

Default Detection Limits

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
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
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

HPLC/IC

Analysis Batch: 268268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-1	MW - 12	Total/NA	Water	300.0	
600-187419-2	MW - 3	Total/NA	Water	300.0	
600-187419-3	MW - 1	Total/NA	Water	300.0	
600-187419-4	MW - 2A	Total/NA	Water	300.0	
600-187419-5	MW - 2	Total/NA	Water	300.0	
600-187419-6	MW - 6R	Total/NA	Water	300.0	
600-187419-7	DUP - 1	Total/NA	Water	300.0	
600-187419-8	MW - 5	Total/NA	Water	300.0	
600-187419-9	MW - 5A	Total/NA	Water	300.0	
600-187419-10	RW - 1	Total/NA	Water	300.0	
600-187419-11	DUP -2	Total/NA	Water	300.0	
600-187419-12	MW - 4	Total/NA	Water	300.0	
600-187419-13	MW - 4A	Total/NA	Water	300.0	
600-187419-14	RW - 6R	Total/NA	Water	300.0	
600-187419-15	RW - 2	Total/NA	Water	300.0	
600-187419-16	MW - 14	Total/NA	Water	300.0	
600-187419-17	MW - 7	Total/NA	Water	300.0	
600-187419-18	MW - 9	Total/NA	Water	300.0	
600-187419-19	MW - 9A	Total/NA	Water	300.0	
600-187419-20	MW - 11	Total/NA	Water	300.0	
MB 600-268268/35	Method Blank	Total/NA	Water	300.0	
MB 600-268268/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268268/36	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-268268/5	Lab Control Sample	Total/NA	Water	300.0	
600-187419-5 MS	MW - 2	Total/NA	Water	300.0	
600-187419-5 MSD	MW - 2	Total/NA	Water	300.0	
600-187419-14 MS	RW - 6R	Total/NA	Water	300.0	
600-187419-14 MSD	RW - 6R	Total/NA	Water	300.0	

Analysis Batch: 268404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-21	EB - 1	Total/NA	Water	300.0	
MB 600-268404/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268404/5	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 268092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-1	MW - 12	Total/NA	Water	SM 2540C	
600-187419-2	MW - 3	Total/NA	Water	SM 2540C	
600-187419-3	MW - 1	Total/NA	Water	SM 2540C	
600-187419-4	MW - 2A	Total/NA	Water	SM 2540C	
600-187419-5	MW - 2	Total/NA	Water	SM 2540C	
600-187419-6	MW - 6R	Total/NA	Water	SM 2540C	
MB 600-268092/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268092/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-187419-5 DU	MW - 2	Total/NA	Water	SM 2540C	

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

General Chemistry

Analysis Batch: 268191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-7	DUP - 1	Total/NA	Water	SM 2540C	
600-187419-8	MW - 5	Total/NA	Water	SM 2540C	
600-187419-9	MW - 5A	Total/NA	Water	SM 2540C	
600-187419-10	RW - 1	Total/NA	Water	SM 2540C	
600-187419-11	DUP -2	Total/NA	Water	SM 2540C	
600-187419-12	MW - 4	Total/NA	Water	SM 2540C	
600-187419-13	MW - 4A	Total/NA	Water	SM 2540C	
600-187419-14	RW - 6R	Total/NA	Water	SM 2540C	
600-187419-16	MW - 14	Total/NA	Water	SM 2540C	
600-187419-17	MW - 7	Total/NA	Water	SM 2540C	
600-187419-18	MW - 9	Total/NA	Water	SM 2540C	
600-187419-19	MW - 9A	Total/NA	Water	SM 2540C	
600-187419-20	MW - 11	Total/NA	Water	SM 2540C	
600-187419-21	EB - 1	Total/NA	Water	SM 2540C	
MB 600-268191/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268191/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-187419-13 DU	MW - 4A	Total/NA	Water	SM 2540C	
600-187419-18 DU	MW - 9	Total/NA	Water	SM 2540C	

Analysis Batch: 268421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-15	RW - 2	Total/NA	Water	SM 2540C	
MB 600-268421/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268421/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 12
Lab Sample ID: 600-187419-1
Date Collected: 06/20/19 08:52
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 3
Lab Sample ID: 600-187419-2
Date Collected: 06/20/19 09:32
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 1
Lab Sample ID: 600-187419-3
Date Collected: 06/20/19 09:38
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 2A
Lab Sample ID: 600-187419-4
Date Collected: 06/20/19 09:44
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 23:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 2
Lab Sample ID: 600-187419-5
Date Collected: 06/20/19 09:47
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 00:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 6R
Lab Sample ID: 600-187419-6
Date Collected: 06/20/19 09:53
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 01:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: DUP - 1
Lab Sample ID: 600-187419-7
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 5
Lab Sample ID: 600-187419-8
Date Collected: 06/20/19 10:05
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 5A
Lab Sample ID: 600-187419-9
Date Collected: 06/20/19 10:08
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 1
Lab Sample ID: 600-187419-10
Date Collected: 06/20/19 10:14
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: DUP -2
Lab Sample ID: 600-187419-11
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 4
Lab Sample ID: 600-187419-12
Date Collected: 06/20/19 10:22
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 4A
Lab Sample ID: 600-187419-13
Date Collected: 06/20/19 10:24
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 04:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 6R
Lab Sample ID: 600-187419-14
Date Collected: 06/20/19 10:49
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 05:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 2
Lab Sample ID: 600-187419-15
Date Collected: 06/20/19 10:51
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268421	07/01/19 11:28	DTN	TAL HOU

Client Sample ID: MW - 14
Lab Sample ID: 600-187419-16
Date Collected: 06/20/19 11:05
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 7
Lab Sample ID: 600-187419-17
Date Collected: 06/20/19 11:20
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 9
Lab Sample ID: 600-187419-18
Date Collected: 06/20/19 11:30
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 9A
Lab Sample ID: 600-187419-19
Date Collected: 06/20/19 11:34
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 11
Lab Sample ID: 600-187419-20
Date Collected: 06/20/19 11:41
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: EB - 1
Lab Sample ID: 600-187419-21
Date Collected: 06/20/19 12:50
Matrix: Water
Date Received: 06/21/19 10:19

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	07/01/19 16:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	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: 600-187419-1
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

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

Chain of Custody Record

Midland #264

Client Information	Sampler: JCL / LRB	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-68943-18804.1
Client Contact: Mr. Brett Krehbiel	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 1 of 3
Company: ARCADIS U.S., Inc.		Analysis Requested		Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: Purchase Order not required			
Email: brett.krehbiel@arcadis.com	WO #:			
Project Name: Midland - Chevron Keijan Boyer	Project #: 60003622			Other:
Site: Cooper Jal	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-12	06/20/19	0852	G	Water			1		
MW-3	06/20/19	0932	G	Water			1		
MW-1	06/20/19	0938	G	Water			1		
MW-2A	06/20/19	0944	G	Water			1		
MW-2	06/20/19	0947	G	Water			1		
MW-4R	06/20/19	0953	G	Water			1		
DUP-1	06/20/19	—	G	Water			1		
MW-5	06/20/19	1005	G	Water			1		
MW-5A	06/20/19	1008	G	Water			1		
RW-1	06/20/19	1014	G	Water			1		
DUP-2	06/20/19	—	G	Water			1		

600-187419 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	06/20/19 1311	ARCADIS			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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

Chain of Custody Record

Midland #264

Client Information	Sampler: JOL / LR	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-68943-18804.1
Client Contact: Mr. Brett Krehbiel	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 2 of 3
Company: ARCADIS U.S., Inc.		Analysis Requested		Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			Preservation Codes:
City: Midland	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: Purchase Order not required			Other:
Email: brett.krehbiel@arcadis.com	WO #:			
Project Name: Midland - Chevron Regan Boyer	Project #: 60003622			
Site: Cooper Jal	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-4	10/20/19	1022	G	Water			1		
MW-4A	10/20/19	1024	G	Water			1		
RW-LR	10/20/19	1049	G	Water			1		
RW-2	10/20/19	1051	G	Water			1		
MW-14	10/20/19	1105	G	Water			1		
MW-7	10/20/19	1120	G	Water			1		
MW-9	10/20/19	1130	G	Water			1		
MW-9A	10/20/19	1134	G	Water			1		
MW-11	10/20/19	1141	G	Water			1		
EB-1	10/20/19	1250	G	Water			1		
	N/A			Water					

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/20/19 / 1311	ARCADIS			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

ORIGIN ID:MAFA (432) 215-3695
JOSH FUNDERBURG

1308 S. MIDKIFF
SUITE 133
MIDLAND, TX 79703
UNITED STATES US

SHIP DATE: 07JUN19
ACTWGT: 30.00 LB
CAD: 113247836/INET4100
DIMS: 26x14x14 IN

BILL SENDER

TO TESTAMERICA
TESTAMERICA
6310 ROTHWAY

HOUSTON TX 77040
(713) 690-4444

REF: ARCADIS COOPER JAL
INV
PO
DEPT

FedEx Express

SAT

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 7753 8658 4523
0201

77040
IAH
TX-US

X0 LKSA

After printing this label:

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TestAmerica Houston

Loc: 600
187419

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Checklist

Date/Time Received: '19 JUN 21 10:19

JOB NUMBER: _____ CLIENT: Arcadis

UNPACKED BY: YR CARRIER/DRIVER: FG

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

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
Gray	Y / N	Y / N	1.9	66	-.2	1.7
Gray	Y / N	Y / N	1.7			1.5
	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				

YR 6/21/19

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

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

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:

YR 6/21/19

HS-SA-WI-013 Rev. 3; 07/01/2014

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc. Job Number: 600-187419-1

Login Number: 187419 **List Source: Eurofins TestAmerica, Houston**
List Number: 1
Creator: Rubio, Yuri

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7,1.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 600-196675-1
Client Project/Site: Cooper Jal

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 4:18:13 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

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.

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Laboratory Job ID: 600-196675-1

Table of Contents

Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Eurofins TestAmerica, Houston job number 600-196675-1 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		12/19/2019
Name (printed)	Signature	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:	Cooper Jal	Laboratory Job Number:	600-196675-1
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				
		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:	Cooper Jal	Laboratory Job Number:	600-196675-1
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				

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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	12/19/2019
Project Name:	Cooper Jal	Laboratory Job Number:	600-196675-1
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-12 (600-196675-1), MW-3 (600-196675-2), MW-2 (600-196675-3), MW-2A (600-196675-4), MW-6R (600-196675-5), MW-5 (600-196675-6), MW-5A (600-196675-7), MW-1 (600-196675-8), MW-4 (600-196675-9), MW-4A (600-196675-10), RW-1 (600-196675-11), RW-2R (600-196675-12), RW-2 (600-196675-13), MW-14 (600-196675-14), DUP-1 (600-196675-15), MW-10 (600-196675-16), MW-7 (600-196675-17), MW-8 (600-196675-18), MW-9 (600-196675-19), MW-9A (600-196675-20) and MW-11 (600-196675-21).
R05D	Method 300.0: The method blank for analytical batch 600-283030 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 600-283045 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 600-283211 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.

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.
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Detection Check Standard

EuroFins TestAmerica, Houston

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

DCS = Detection Check Standard
MQL = Method Quantitation Limit

Detection Check Standard

EuroFins TestAmerica, Houston

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

DCS = Detection Check Standard
MQL = Method Quantitation Limit

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Job ID: 600-196675-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-196675-1

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 temperature of the cooler at receipt was 2.2º 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: Cooper Jal

Job ID: 600-196675-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	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"

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: Cooper Jal

Job ID: 600-196675-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-196675-1	MW-12	Water	11/23/19 15:10	11/27/19 10:15	
600-196675-2	MW-3	Water	11/23/19 15:22	11/27/19 10:15	
600-196675-3	MW-2	Water	11/23/19 15:32	11/27/19 10:15	
600-196675-4	MW-2A	Water	11/23/19 15:37	11/27/19 10:15	
600-196675-5	MW-6R	Water	11/23/19 15:46	11/27/19 10:15	
600-196675-6	MW-5	Water	11/23/19 15:54	11/27/19 10:15	
600-196675-7	MW-5A	Water	11/23/19 16:04	11/27/19 10:15	
600-196675-8	MW-1	Water	11/24/19 08:26	11/27/19 10:15	
600-196675-9	MW-4	Water	11/24/19 08:44	11/27/19 10:15	
600-196675-10	MW-4A	Water	11/24/19 08:49	11/27/19 10:15	
600-196675-11	RW-1	Water	11/24/19 09:08	11/27/19 10:15	
600-196675-12	RW-2R	Water	11/24/19 09:21	11/27/19 10:15	
600-196675-13	RW-2	Water	11/24/19 09:25	11/27/19 10:15	
600-196675-14	MW-14	Water	11/24/19 09:31	11/27/19 10:15	
600-196675-15	DUP-1	Water	11/24/19 00:00	11/27/19 10:15	
600-196675-16	MW-10	Water	11/24/19 09:52	11/27/19 10:15	
600-196675-17	MW-7	Water	11/24/19 10:11	11/27/19 10:15	
600-196675-18	MW-8	Water	11/24/19 10:22	11/27/19 10:15	
600-196675-19	MW-9	Water	11/24/19 10:32	11/27/19 10:15	
600-196675-20	MW-9A	Water	11/24/19 10:41	11/27/19 10:15	
600-196675-21	MW-11	Water	11/24/19 10:51	11/27/19 10:15	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-12
Lab Sample ID: 600-196675-1
Date Collected: 11/23/19 15:10
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	337	b	100	13.4	mg/L			12/14/19 06:51	250
Sulfate	140		125	23.9	mg/L			12/14/19 06:51	250

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1010	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-3
Lab Sample ID: 600-196675-2
Date Collected: 11/23/19 15:22
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	60.0	b	20.0	2.67	mg/L			12/14/19 07:02	50
Sulfate	96.6		25.0	4.79	mg/L			12/14/19 07:02	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	352	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-2
Lab Sample ID: 600-196675-3
Date Collected: 11/23/19 15:32
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	27.7	b	8.00	1.07	mg/L			12/14/19 07:13	20
Sulfate	42.0		10.0	1.91	mg/L			12/14/19 07:13	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	274	H	10.0	10.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-2A
Lab Sample ID: 600-196675-4
Date Collected: 11/23/19 15:37
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	88.0	b	20.0	2.67	mg/L			12/14/19 07:23	50
Sulfate	76.5		25.0	4.79	mg/L			12/14/19 07:23	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	414	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-6R
Lab Sample ID: 600-196675-5
Date Collected: 11/23/19 15:46
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	69.4	b	20.0	2.67	mg/L			12/14/19 07:34	50
Sulfate	95.2		25.0	4.79	mg/L			12/14/19 07:34	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	384	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-5
Lab Sample ID: 600-196675-6
Date Collected: 11/23/19 15:54
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	1530	b	80.0	10.7	mg/L			12/14/19 08:06	200
Sulfate	250		100	19.1	mg/L			12/14/19 08:06	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3900	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-5A
Lab Sample ID: 600-196675-7
Date Collected: 11/23/19 16:04
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	116	b	20.0	2.67	mg/L			12/14/19 08:17	50
Sulfate	61.1		25.0	4.79	mg/L			12/14/19 08:17	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	502	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-1
Lab Sample ID: 600-196675-8
Date Collected: 11/24/19 08:26
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	1110	b	80.0	10.7	mg/L			12/14/19 08:28	200
Sulfate	222		100	19.1	mg/L			12/14/19 08:28	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2190	H	40.0	40.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-4
Lab Sample ID: 600-196675-9
Date Collected: 11/24/19 08:44
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	3050	b	200	26.7	mg/L			12/14/19 09:00	500
Sulfate	420		250	47.9	mg/L			12/14/19 09:00	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5960	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-4A
Lab Sample ID: 600-196675-10
Date Collected: 11/24/19 08:49
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	321	b	40.0	5.34	mg/L			12/14/19 09:11	100
Sulfate	94.5		50.0	9.57	mg/L			12/14/19 09:11	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	824	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: RW-1
Lab Sample ID: 600-196675-11
Date Collected: 11/24/19 09:08
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	5780	b	400	53.4	mg/L			12/14/19 09:43	1000
Sulfate	722		500	95.7	mg/L			12/14/19 09:43	1000

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12200	H	200	200	mg/L			12/04/19 13:21	1

Client Sample ID: RW-2R
Lab Sample ID: 600-196675-12
Date Collected: 11/24/19 09:21
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	7720	b	400	53.4	mg/L			12/14/19 09:54	1000
Sulfate	943		500	95.7	mg/L			12/14/19 09:54	1000

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	21000	H	200	200	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: RW-2
Lab Sample ID: 600-196675-13
Date Collected: 11/24/19 09:25
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	3510	b	200	26.7	mg/L			12/18/19 01:23	500
Sulfate	464		250	47.9	mg/L			12/18/19 01:23	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9880	H	200	200	mg/L			12/04/19 13:21	1

Client Sample ID: MW-14
Lab Sample ID: 600-196675-14
Date Collected: 11/24/19 09:31
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	37.1	b	8.00	1.07	mg/L			12/14/19 10:24	20
Sulfate	94.5		10.0	1.91	mg/L			12/14/19 10:24	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	328	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: DUP-1
Lab Sample ID: 600-196675-15
Date Collected: 11/24/19 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	40.4	b	8.00	1.07	mg/L			12/14/19 11:25	20
Sulfate	95.9		10.0	1.91	mg/L			12/14/19 11:25	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	324	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-10
Lab Sample ID: 600-196675-16
Date Collected: 11/24/19 09:52
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	230	b	40.0	5.34	mg/L			12/14/19 11:46	100
Sulfate	78.0		50.0	9.57	mg/L			12/14/19 11:46	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	826	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-7
Lab Sample ID: 600-196675-17
Date Collected: 11/24/19 10:11
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	2080	b	200	26.7	mg/L			12/14/19 12:06	500
Sulfate	272		250	47.9	mg/L			12/14/19 12:06	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6300	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-8
Lab Sample ID: 600-196675-18
Date Collected: 11/24/19 10:22
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	12.9	b	10.0	1.34	mg/L			12/14/19 12:27	25
Sulfate	27.6		12.5	2.39	mg/L			12/14/19 12:27	25

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	239	H	10.0	10.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-9
Lab Sample ID: 600-196675-19
Date Collected: 11/24/19 10:32
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	337	b	40.0	5.34	mg/L			12/14/19 12:47	100
Sulfate	80.6		50.0	9.57	mg/L			12/14/19 12:47	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1170	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-9A
Lab Sample ID: 600-196675-20
Date Collected: 11/24/19 10:41
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	231	b	40.0	5.34	mg/L			12/14/19 13:48	100
Sulfate	83.2		50.0	9.57	mg/L			12/14/19 13:48	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	838	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-11

Date Collected: 11/24/19 10:51
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-21

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.8	b	20.0	2.67	mg/L			12/14/19 14:50	50
Sulfate	113		25.0	4.79	mg/L			12/14/19 14:50	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	364	H	20.0	20.0	mg/L			12/04/19 13:21	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

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
H	Sample was prepped or analyzed beyond the specified holding time
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.
¤	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: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-283030/34
Matrix: Water
Analysis Batch: 283030

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3130	J	0.400	0.0534	mg/L			12/14/19 07:45	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 07:45	1

Lab Sample ID: MB 600-283030/6
Matrix: Water
Analysis Batch: 283030

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3105	J	0.400	0.0534	mg/L			12/14/19 02:43	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 02:43	1

Lab Sample ID: LCS 600-283030/35
Matrix: Water
Analysis Batch: 283030

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	19.18		mg/L		96	90 - 110

Lab Sample ID: LCS 600-283030/7
Matrix: Water
Analysis Batch: 283030

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	19.37		mg/L		97	90 - 110
Sulfate	20.0	19.14		mg/L		96	90 - 110

Lab Sample ID: 600-196675-10 MS
Matrix: Water
Analysis Batch: 283030

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	321	b	1000	1285		mg/L		96	80 - 120
Sulfate	94.5		1000	1026		mg/L		93	80 - 120

Lab Sample ID: 600-196675-10 MSD
Matrix: Water
Analysis Batch: 283030

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	321	b	1000	1296		mg/L		97	80 - 120	1	20
Sulfate	94.5		1000	1046		mg/L		95	80 - 120	2	20

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

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: 600-196675-14 MS
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	37.1	b	200	243.4		mg/L		103	80 - 120		
Sulfate	94.5		200	294.4		mg/L		100	80 - 120		

Lab Sample ID: 600-196675-14 MSD
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	37.1	b	200	243.4		mg/L		103	80 - 120	0	20
Sulfate	94.5		200	293.7		mg/L		100	80 - 120	0	20

Lab Sample ID: 600-196675-20 MS
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-9A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	231	b	1000	1255		mg/L		102	80 - 120		
Sulfate	83.2		1000	1041		mg/L		96	80 - 120		

Lab Sample ID: 600-196675-20 MSD
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-9A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	231	b	1000	1261		mg/L		103	80 - 120	1	20
Sulfate	83.2		1000	1045		mg/L		96	80 - 120	0	20

Lab Sample ID: MB 600-283211/35
Matrix: Water
Analysis Batch: 283211

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1862	J	0.400	0.0534	mg/L			12/17/19 22:19	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 22:19	1

Lab Sample ID: MB 600-283211/4
Matrix: Water
Analysis Batch: 283211

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1863	J	0.400	0.0534	mg/L			12/17/19 11:46	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 11:46	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 600-283211/36
Matrix: Water
Analysis Batch: 283211

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1000	1017		mg/L		102	90 - 110
Sulfate	1000	980.3		mg/L		98	90 - 110

Lab Sample ID: LCS 600-283211/5
Matrix: Water
Analysis Batch: 283211

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	20.14		mg/L		101	90 - 110
Sulfate	20.0	19.34		mg/L		97	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-282061/1
Matrix: Water
Analysis Batch: 282061

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 13:21	1

Lab Sample ID: LCS 600-282061/2
Matrix: Water
Analysis Batch: 282061

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: 600-196675-10 DU
Matrix: Water
Analysis Batch: 282061

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	824	H	806.0		mg/L		2	10

Lab Sample ID: 600-196675-21 DU
Matrix: Water
Analysis Batch: 282061

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	364	H	340.0		mg/L		7	10

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

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: 600-196675-1 DU
Matrix: Water
Analysis Batch: 282105

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1010	H		1032		mg/L				2	10

Unadjusted Detection Limits

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

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
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

HPLC/IC

Analysis Batch: 283030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-1	MW-12	Total/NA	Water	300.0	
600-196675-2	MW-3	Total/NA	Water	300.0	
600-196675-3	MW-2	Total/NA	Water	300.0	
600-196675-4	MW-2A	Total/NA	Water	300.0	
600-196675-5	MW-6R	Total/NA	Water	300.0	
600-196675-6	MW-5	Total/NA	Water	300.0	
600-196675-7	MW-5A	Total/NA	Water	300.0	
600-196675-8	MW-1	Total/NA	Water	300.0	
600-196675-9	MW-4	Total/NA	Water	300.0	
600-196675-10	MW-4A	Total/NA	Water	300.0	
600-196675-11	RW-1	Total/NA	Water	300.0	
600-196675-12	RW-2R	Total/NA	Water	300.0	
MB 600-283030/34	Method Blank	Total/NA	Water	300.0	
MB 600-283030/6	Method Blank	Total/NA	Water	300.0	
LCS 600-283030/35	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283030/7	Lab Control Sample	Total/NA	Water	300.0	
600-196675-10 MS	MW-4A	Total/NA	Water	300.0	
600-196675-10 MSD	MW-4A	Total/NA	Water	300.0	

Analysis Batch: 283045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-14	MW-14	Total/NA	Water	300.0	
600-196675-15	DUP-1	Total/NA	Water	300.0	
600-196675-16	MW-10	Total/NA	Water	300.0	
600-196675-17	MW-7	Total/NA	Water	300.0	
600-196675-18	MW-8	Total/NA	Water	300.0	
600-196675-19	MW-9	Total/NA	Water	300.0	
600-196675-20	MW-9A	Total/NA	Water	300.0	
600-196675-21	MW-11	Total/NA	Water	300.0	
MB 600-283045/4	Method Blank	Total/NA	Water	300.0	
LCS 600-283045/5	Lab Control Sample	Total/NA	Water	300.0	
600-196675-14 MS	MW-14	Total/NA	Water	300.0	
600-196675-14 MSD	MW-14	Total/NA	Water	300.0	
600-196675-20 MS	MW-9A	Total/NA	Water	300.0	
600-196675-20 MSD	MW-9A	Total/NA	Water	300.0	

Analysis Batch: 283211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-13	RW-2	Total/NA	Water	300.0	
MB 600-283211/35	Method Blank	Total/NA	Water	300.0	
MB 600-283211/4	Method Blank	Total/NA	Water	300.0	
LCS 600-283211/36	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283211/5	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 282061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-2	MW-3	Total/NA	Water	SM 2540C	
600-196675-3	MW-2	Total/NA	Water	SM 2540C	
600-196675-4	MW-2A	Total/NA	Water	SM 2540C	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

General Chemistry (Continued)

Analysis Batch: 282061 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-5	MW-6R	Total/NA	Water	SM 2540C	
600-196675-6	MW-5	Total/NA	Water	SM 2540C	
600-196675-7	MW-5A	Total/NA	Water	SM 2540C	
600-196675-8	MW-1	Total/NA	Water	SM 2540C	
600-196675-9	MW-4	Total/NA	Water	SM 2540C	
600-196675-10	MW-4A	Total/NA	Water	SM 2540C	
600-196675-11	RW-1	Total/NA	Water	SM 2540C	
600-196675-12	RW-2R	Total/NA	Water	SM 2540C	
600-196675-13	RW-2	Total/NA	Water	SM 2540C	
600-196675-14	MW-14	Total/NA	Water	SM 2540C	
600-196675-15	DUP-1	Total/NA	Water	SM 2540C	
600-196675-16	MW-10	Total/NA	Water	SM 2540C	
600-196675-17	MW-7	Total/NA	Water	SM 2540C	
600-196675-18	MW-8	Total/NA	Water	SM 2540C	
600-196675-19	MW-9	Total/NA	Water	SM 2540C	
600-196675-20	MW-9A	Total/NA	Water	SM 2540C	
600-196675-21	MW-11	Total/NA	Water	SM 2540C	
MB 600-282061/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-282061/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-196675-10 DU	MW-4A	Total/NA	Water	SM 2540C	
600-196675-21 DU	MW-11	Total/NA	Water	SM 2540C	

Analysis Batch: 282105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-1	MW-12	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	
600-196675-1 DU	MW-12	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-12
Date Collected: 11/23/19 15:10
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-1
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		250			283030	12/14/19 06:51	W1N	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 15:22
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-2
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		50			283030	12/14/19 07:02	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-2
Date Collected: 11/23/19 15:32
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-3
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		20			283030	12/14/19 07:13	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-2A
Date Collected: 11/23/19 15:37
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-4
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		50			283030	12/14/19 07:23	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-6R
Date Collected: 11/23/19 15:46
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-5
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		50			283030	12/14/19 07:34	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-5
Date Collected: 11/23/19 15:54
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-6
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		200			283030	12/14/19 08:06	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-5A
Date Collected: 11/23/19 16:04
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-7
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		50			283030	12/14/19 08:17	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-1
Date Collected: 11/24/19 08:26
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-8
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		200			283030	12/14/19 08:28	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-4
Date Collected: 11/24/19 08:44
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-9
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			283030	12/14/19 09:00	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-4A
Date Collected: 11/24/19 08:49
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-10
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		100			283030	12/14/19 09:11	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: RW-1
Date Collected: 11/24/19 09:08
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-11
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		1000			283030	12/14/19 09:43	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: RW-2R
Date Collected: 11/24/19 09:21
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-12
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		1000			283030	12/14/19 09:54	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: RW-2
Date Collected: 11/24/19 09:25
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-13
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			283211	12/18/19 01:23	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-14
Date Collected: 11/24/19 09:31
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-14
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			283045	12/14/19 10:24	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: DUP-1
Date Collected: 11/24/19 00:00
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-15
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			283045	12/14/19 11:25	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-10
Date Collected: 11/24/19 09:52
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-16
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			283045	12/14/19 11:46	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-7
Date Collected: 11/24/19 10:11
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-17
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 12:06	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-8
Date Collected: 11/24/19 10:22
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-18
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		25			283045	12/14/19 12:27	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-9
Date Collected: 11/24/19 10:32
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-19
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		100			283045	12/14/19 12:47	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-9A
Date Collected: 11/24/19 10:41
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-20
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	12/14/19 13:48	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-11
Date Collected: 11/24/19 10:51
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-21
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		50			283045	12/14/19 14:50	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	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.
Job ID: 600-196675-1
Project/Site: Cooper Jal

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Carlos Martinez	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72356-19860.3
Client Contact: Mr. Russell Grant	Phone: 361-701-0369	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: 30006543 Mark Owen			
Email: russell.grant@arcadis-us.com	WO #:			
Project Name: ~~MARK OWEN~~ Cooper Jal	Project #: 60003622			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - TDS	300-Cl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:			N				
MW-12	11/23/19	1510	G	Water			X	X	1	
~~MW-3~~ MW-3	11/23/19	1522	G	Water			X	X	1	
MW-2	11/23/19	1532	G	Water			X	X	1	
MW-2A	11/23/19	1537	G	Water			X	X	1	
MW-6R	11/23/19	1546	G	Water			X	X	1	
MW-5	11/23/19	1554	G	Water			X	X	1	
MW-5A	11/23/19	1604	G	Water			X	X	1	
MW-1	11/24/19	0826	G	Water			X	X	1	
MW-4	11/24/19	0844	G	Water			X	X	1	
MW-4A	11/24/19	0849	G	Water			X	X	1	
RW-1	11/24/19	0903	G	Water			X	X	1	

600-196675 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: Carlos Martinez	11/26/19 1800	ARCADIS	[signature]	11/27/19 1015	TAH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

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

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Carlos Martinez	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72356-19860.3
Client Contact: Mr. Russell Grant	Phone: 361-701-0561	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: 30006543 Mark Owen			
Email: russell.grant@arcadis-us.com	WO #:			
Project Name: ~~MARK OWEN~~ Cooper Jal	Project #: 60003622			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	~~8260B~~, Alkalinity	2540C - TDS	300 - Cl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
RW-2R	11/24/19	0921	G	Water				X	X	1	
RW-2	11/24/19	0925	G	Water				X	X	1	
MW-14	11 24 19	0931	G	Water				X	X	1	
DUP-1	11 24 19	—	G	Water				X	X	1	
MW-10	11 24 19	0952	G	Water				X	X	1	
MW-7	11/24/19	1011	G	Water				X	X	2	
MW-8	11/24/19	1022	G	Water				X	X	1	
MW-9	11/24/19	1032	G	Water				X	X	1	
MW-9A	11/24/19	1041	G	Water				X	X	1	
MW-11	11/24/19	1051	G	Water				X	X	1	
				Water							

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Carlos Martinez	11/26/19 / 1800	ARCADIS	[signature]	11/27/19 1015	TAH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

Loc: 600
196675

eurofins | Environment Testing TestAmerica

Eurofins TestAmerica Houston

Sample Receipt Checklist

'19 NOV 27 10:15

Date/Time Received: _____

JOB NUMBER: _____ CLIENT: Arcadis

UNPACKED BY: JR CARRIER/DRIVER: FedEX

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

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
133	Y / N	Y / N	2.1	676	+0.1	2.2
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N			JR 11/27/19	
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☑YES ☐NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☑NO ☐YES

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

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

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

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

COMMENTS:

JR 11/29/19

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

Login Sample Receipt Checklist

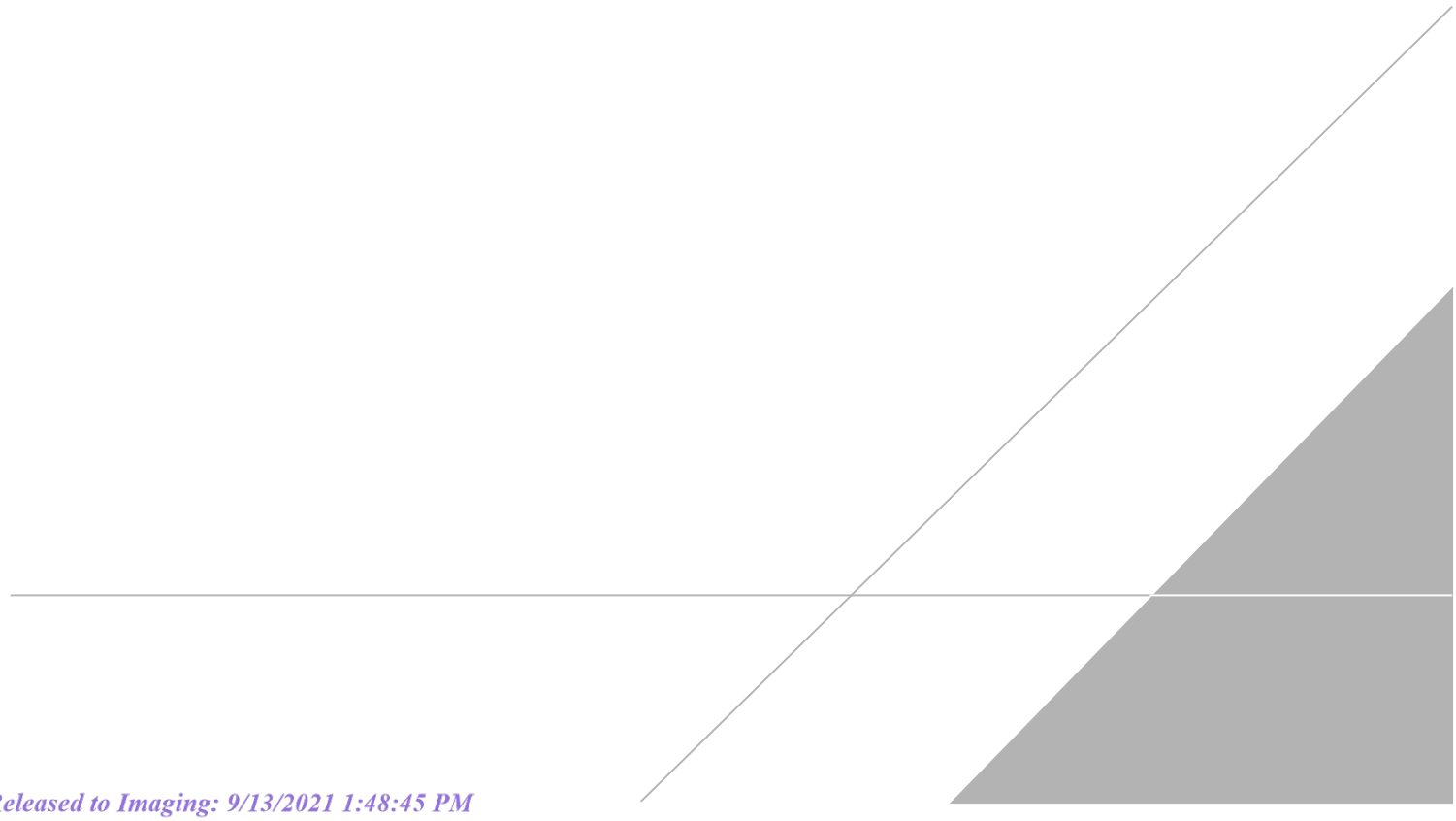
Client: ARCADIS U.S., Inc. Job Number: 600-196675-1

Login Number: 196675 **List Source: Eurofins TestAmerica, Houston**
List Number: 1
Creator: Rubio, Yuri

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

APPENDIX E

Cumulative Summary of Groundwater Potentiometric Elevation Data



Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-1	05/18/98	135.05	3184.95	173.00	2.00	153-173
3320.00	05/25/99	134.93	3185.07	---	---	---
	02/08/01	134.80	3185.20	---	---	---
	05/10/02	134.77	3185.23	---	---	---
	10/22/02	134.89	3185.11	---	---	---
	05/20/03	135.17	3184.83	---	---	---
	11/24/03	134.70	3185.30	---	---	---
	05/11/04	134.75	3185.25	---	---	---
	11/15/04	134.76	3185.24	---	---	---
	05/17/05	134.29	3185.71	---	---	---
	11/15/05	134.93	3185.07	---	---	---
	05/08/06	134.68	3185.32	---	---	---
	11/13/06	134.62	3185.38	---	---	---
	05/29/07	134.71	3185.29	---	---	---
	11/16/07	134.70	3185.30	---	---	---
	05/14/08	134.73	3185.27	---	---	---
	11/03/08	134.69	3185.31	---	---	---
	05/19/09	134.64	3185.36	---	---	---
	11/02/09	134.71	3185.29	---	---	---
	05/05/10	134.90	3185.10	---	---	---
	11/08/10	134.50	3185.50	---	---	---
	05/11/11	134.60	3185.40	---	---	---
	11/08/11	134.64	3185.36	---	---	---
	05/16/12	134.60	3185.40	---	---	---
	10/10/12	134.73	3185.27	---	---	---
	05/16/13	134.58	3185.42	---	---	---
	10/08/13	134.53	3185.47	---	---	---
	05/01/14	134.70	3185.30	---	---	---
	10/05/14	134.49	3185.51	---	---	---
	05/21/15	134.56	3185.44	---	---	---
	10/19/15	134.80	3185.20	---	---	---
	05/25/16	134.69	3185.31	---	---	---
	10/17/16	134.35	3185.65	---	---	---
	05/10/17	134.44	3185.56	---	---	---
3321.94	10/24/17	134.63	3187.31	---	---	---
	05/22/18	134.45	3187.49	---	---	---
	10/17/18	134.54	3187.40	---	---	---
	06/20/19	134.56	3187.38	171.17	---	---
	11/20/19	134.45	3187.49	174.20	---	---
MW-2	05/18/98	135.00	3184.86	173.00	2.00	163-173
3319.86	05/25/99	134.79	3185.07	---	---	---
	02/08/01	134.63	3185.23	---	---	---
	05/10/02	134.65	3185.21	---	---	---
	10/22/02	134.72	3185.14	---	---	---
	05/20/03	134.95	3184.91	---	---	---
	11/24/03	134.56	3185.30	---	---	---
	05/11/04	134.55	3185.31	---	---	---
	11/15/04	134.53	3185.33	---	---	---
	05/17/05	134.39	3185.47	---	---	---
	11/15/05	134.77	3185.09	---	---	---
	05/08/06	134.52	3185.34	---	---	---
	11/13/06	134.44	3185.42	---	---	---
	05/29/07	134.54	3185.32	---	---	---
	11/14/07	134.52	3185.34	---	---	---
	05/14/08	134.53	3185.33	---	---	---
	11/03/08	134.44	3185.42	---	---	---
	05/19/09	134.46	3185.40	---	---	---
	11/16/09	134.51	3185.35	---	---	---
	05/05/10	134.62	3185.24	---	---	---
	11/08/10	134.25	3185.61	---	---	---
	05/11/11	134.31	3185.55	---	---	---
	11/08/11	134.36	3185.50	---	---	---
	05/16/12	134.31	3185.55	---	---	---
	10/10/12	134.51	3185.35	---	---	---
	05/16/13	134.33	3185.53	---	---	---
	10/07/13	142.85	3177.01	---	---	---
	05/01/14	134.37	3185.49	---	---	---
	10/05/14	134.14	3185.72	---	---	---
	05/21/15	134.21	3185.65	---	---	---
	10/19/15	134.20	3185.66	---	---	---
	05/25/16	134.38	3185.48	---	---	---
	10/17/16	134.00	3185.86	---	---	---
	05/10/17	134.13	3185.73	---	---	---
3321.27	10/25/17	134.32	3186.95	---	---	---
	05/22/18	134.11	3187.16	---	---	---
	10/17/18	134.21	3187.06	---	---	---
	06/20/19	134.27	3187.00	168.39	---	---
	11/20/19	134.21	3187.06	168.57	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-2A	05/18/98	134.80	3185.06	145.00	2.00	130-145
3319.86	05/25/99	134.73	3185.13	---	---	---
	02/08/01	134.58	3185.28	---	---	---
	05/10/02	134.50	3185.36	---	---	---
	10/22/02	134.66	3185.20	---	---	---
	05/20/03	135.80	3184.06	---	---	---
	11/24/03	134.60	3185.26	---	---	---
	05/11/04	134.53	3185.33	---	---	---
	11/15/04	134.58	3185.28	---	---	---
	05/17/05	134.47	3185.39	---	---	---
	11/15/05	134.74	3185.12	---	---	---
	05/08/06	134.46	3185.40	---	---	---
	11/13/06	134.39	3185.47	---	---	---
	05/29/07	134.50	3185.36	---	---	---
	11/14/07	134.48	3185.38	---	---	---
	05/14/08	134.49	3185.37	---	---	---
	11/03/08	134.46	3185.40	---	---	---
	05/19/09	134.42	3185.44	---	---	---
	11/02/09	134.45	3185.41	---	---	---
	05/05/10	134.52	3185.34	---	---	---
	11/08/10	134.30	3185.56	---	---	---
	05/11/11	134.38	3185.48	---	---	---
	11/08/11	134.42	3185.44	---	---	---
	05/16/12	134.43	3185.43	---	---	---
	10/10/12	134.65	3185.21	---	---	---
	05/16/13	134.35	3185.51	---	---	---
	10/07/13	134.20	3185.66	---	---	---
	05/01/14	134.45	3185.41	---	---	---
	10/05/14	134.15	3185.71	---	---	---
	05/21/15	134.32	3185.54	---	---	---
	10/19/15	134.40	3185.46	---	---	---
	05/25/16	134.49	3185.37	---	---	---
	10/17/16	134.10	3185.76	---	---	---
	05/10/17	134.29	3185.57	---	---	---
3321.3	10/25/17	134.40	3186.90	---	---	---
	05/22/18	134.31	3186.99	---	---	---
	10/17/18	134.31	3186.99	---	---	---
	06/20/19	134.43	3186.87	142.47	---	---
	11/20/19	134.24	3187.06	142.23	---	---
MW-3	05/18/98	132.65	3185.56	171.00	2.00	161-171
3318.21	05/25/99	132.52	3185.69	---	---	---
	02/08/01	132.40	3185.81	---	---	---
	05/10/02	132.40	3185.81	---	---	---
	10/22/02	132.49	3185.72	---	---	---
	05/20/03	132.75	3185.46	---	---	---
	11/24/03	132.29	3185.92	---	---	---
	05/11/04	132.38	3185.83	---	---	---
	11/15/04	132.46	3185.75	---	---	---
	05/17/05	132.32	3185.89	---	---	---
	11/15/05	132.55	3185.66	---	---	---
	05/08/06	132.32	3185.89	---	---	---
	11/13/06	132.27	3185.94	---	---	---
	05/29/07	132.36	3185.85	---	---	---
	11/16/07	132.34	3185.87	---	---	---
	05/14/08	132.36	3185.85	---	---	---
	11/03/08	132.31	3185.90	---	---	---
	05/19/09	132.25	3185.96	---	---	---
	11/02/09	132.37	3185.84	---	---	---
	05/05/10	132.48	3185.73	---	---	---
	11/08/10	132.14	3186.07	---	---	---
	05/11/11	132.24	3185.97	---	---	---
	11/08/11	132.30	3185.91	---	---	---
	05/16/12	132.25	3185.96	---	---	---
	10/10/12	132.54	3185.67	---	---	---
	05/16/13	132.25	3185.96	---	---	---
	10/08/13	132.14	3186.07	---	---	---
	05/01/14	132.10	3186.11	---	---	---
	10/05/14	132.58	3185.63	---	---	---
	05/21/15	132.25	3185.96	---	---	---
	10/19/15	132.25	3185.96	---	---	---
	05/25/16	132.34	3185.87	---	---	---
	10/17/16	132.00	3186.21	---	---	---
	05/10/17	132.21	3186.00	---	---	---
3320.08	10/24/17	132.30	3187.78	---	---	---
	05/22/18	132.15	3187.93	---	---	---
	10/17/18	132.21	3187.87	---	---	---
	06/20/19	132.24	3187.84	171.93	---	---
	11/19/19	132.50	3187.58	175.90	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-4	05/18/98	136.01	3183.73	171.00	2.00	161-171
3319.74	05/25/99	135.57	3184.17	---	---	---
	02/08/01	135.87	3183.87	---	---	---
	05/10/02	135.67	3184.07	---	---	---
	10/22/02	135.90	3183.84	---	---	---
	05/20/03	136.00	3183.74	---	---	---
	11/24/03	135.70	3184.04	---	---	---
	05/11/04	135.34	3184.40	---	---	---
	11/15/04	135.76	3183.98	---	---	---
	05/17/05	135.69	3184.05	---	---	---
	11/15/05	135.85	3183.89	---	---	---
	05/08/06	135.60	3184.14	---	---	---
	11/13/06	135.59	3184.15	---	---	---
	05/29/07	135.75	3183.99	---	---	---
	11/14/07	135.62	3184.12	---	---	---
	05/14/08	135.76	3183.98	---	---	---
	11/03/08	135.66	3184.08	---	---	---
	05/19/09	135.67	3184.07	---	---	---
	11/02/09	135.68	3184.06	---	---	---
	05/05/10	135.83	3183.91	---	---	---
	11/08/10	135.36	3184.38	---	---	---
	05/05/11	135.40	3184.34	---	---	---
	11/08/11	135.43	3184.31	---	---	---
	05/16/12	135.38	3184.36	---	---	---
	10/10/12	135.55	3184.19	---	---	---
	05/16/13	135.38	3184.36	---	---	---
	10/07/13	135.53	3184.21	---	---	---
	05/01/14	135.41	3184.33	---	---	---
	10/05/14	135.61	3184.13	---	---	---
	05/21/15	135.25	3184.49	---	---	---
	10/19/15	135.70	3184.04	---	---	---
	05/25/16	135.44	3184.30	---	---	---
	10/17/16	135.11	3184.63	---	---	---
	05/10/17	135.20	3184.54	---	---	---
3321.58	10/25/17	135.40	3186.18	---	---	---
	05/22/18	135.13	3186.45	---	---	---
	10/16/18	135.32	3186.26	---	---	---
	06/20/19	136.21	3185.37	171.81	---	---
	11/19/19	135.06	3186.52	177.64	---	---
MW-4A	05/18/98	135.68	3183.90	143.00	2.00	128-143
3319.58	05/21/99	135.65	3183.93	---	---	---
	05/25/99	135.90	3183.68	---	---	---
	02/08/01	135.34	3184.24	---	---	---
	05/10/02	135.30	3184.28	---	---	---
	10/22/02	135.51	3184.07	---	---	---
	05/20/03	135.55	3184.03	---	---	---
	11/24/03	135.31	3184.27	---	---	---
	05/11/04	135.72	3183.86	---	---	---
	11/15/04	135.38	3184.20	---	---	---
	05/17/05	135.32	3184.26	---	---	---
	11/15/05	135.52	3184.06	---	---	---
	05/08/06	135.26	3184.32	---	---	---
	11/13/06	135.20	3184.38	---	---	---
	05/29/07	135.32	3184.26	---	---	---
	11/14/07	135.20	3184.38	---	---	---
	05/14/08	135.31	3184.27	---	---	---
	11/03/08	135.27	3184.31	---	---	---
	05/19/09	135.25	3184.33	---	---	---
	11/02/09	135.25	3184.33	---	---	---
	05/05/10	135.33	3184.25	---	---	---
	11/08/10	135.18	3184.40	---	---	---
	05/11/11	135.17	3184.41	---	---	---
	11/08/11	135.22	3184.36	---	---	---
	05/16/12	135.18	3184.40	---	---	---
	10/10/12	135.33	3184.25	---	---	---
	05/16/13	135.20	3184.38	---	---	---
	10/07/13	135.01	3184.57	---	---	---
	05/01/14	135.26	3184.32	---	---	---
	10/05/14	135.05	3184.53	---	---	---
	05/21/15	135.11	3184.47	---	---	---
	10/19/15	135.20	3184.38	---	---	---
	05/25/16	135.27	3184.31	---	---	---
	10/17/16	135.00	3184.58	---	---	---
	05/10/17	135.01	3184.57	---	---	---
3321.42	10/25/17	135.22	3186.20	---	---	---
	05/22/18	134.97	3186.45	---	---	---
	10/16/18	135.11	3186.31	---	---	---
	06/20/19	134.98	3186.44	145.55	---	---
	11/19/19	134.95	3186.47	147.60	---	---

Appendix E
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Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-5	05/18/98	137.42	3183.68	171.00	2.00	161-171
3321.10	05/25/99	137.28	3183.82	---	---	---
	02/08/01	137.18	3183.92	---	---	---
	05/10/02	137.10	3184.00	---	---	---
	10/22/02	137.04	3184.06	---	---	---
	05/20/03	137.45	3183.65	---	---	---
	11/24/03	137.01	3184.09	---	---	---
	05/11/04	137.01	3184.09	---	---	---
	11/15/04	137.08	3184.02	---	---	---
	05/17/05	137.00	3184.10	---	---	---
	11/15/05	137.18	3183.92	---	---	---
	05/08/06	136.90	3184.20	---	---	---
	11/13/06	136.81	3184.29	---	---	---
	05/29/07	136.92	3184.18	---	---	---
	11/14/07	136.85	3184.25	---	---	---
	05/14/08	136.97	3184.13	---	---	---
	11/03/08	136.89	3184.21	---	---	---
	05/19/09	136.90	3184.20	---	---	---
	11/02/09	136.90	3184.20	---	---	---
	05/05/10	137.02	3184.08	---	---	---
	11/08/10	136.93	3184.17	---	---	---
	05/11/11	136.92	3184.18	---	---	---
	11/08/11	136.84	3184.26	---	---	---
	05/16/12	136.80	3184.30	---	---	---
	10/10/12	136.98	3184.12	---	---	---
	05/16/13	136.80	3184.30	---	---	---
	10/07/13	136.79	3184.31	---	---	---
	05/01/14	136.83	3184.27	---	---	---
	10/05/14	136.63	3184.47	---	---	---
	05/21/15	130.60	3190.50	---	---	---
	10/19/15	136.70	3184.40	---	---	---
	05/25/16	136.79	3184.31	---	---	---
	10/17/16	136.51	3184.59	---	---	---
	05/10/17	136.53	3184.57	---	---	---
3322.98	10/25/17	136.80	3186.18	---	---	---
	05/22/18	136.51	3186.47	---	---	---
	10/16/18	136.58	3186.40	---	---	---
	06/20/19	136.65	3186.33	173.72	---	---
	11/19/19	136.91	3186.07	177.50	---	---
MW-5A	05/18/98	137.20	3183.87	141.00	2.00	126-141
3321.07	05/25/99	137.11	3183.96	---	---	---
	02/08/01	136.99	3184.08	---	---	---
	05/10/02	136.90	3184.17	---	---	---
	10/22/02	137.17	3183.90	---	---	---
	05/20/03	137.24	3183.83	---	---	---
	11/24/03	136.91	3184.16	---	---	---
	05/11/04	136.88	3184.19	---	---	---
	11/15/04	136.92	3184.15	---	---	---
	05/17/05	136.83	3184.24	---	---	---
	11/15/05	137.06	3184.01	---	---	---
	05/08/06	136.80	3184.27	---	---	---
	11/13/06	136.74	3184.33	---	---	---
	05/29/07	136.82	3184.25	---	---	---
	11/14/07	136.88	3184.19	---	---	---
	05/14/08	136.83	3184.24	---	---	---
	11/03/08	136.81	3184.26	---	---	---
	05/19/09	136.78	3184.29	---	---	---
	11/02/09	136.80	3184.27	---	---	---
	05/05/10	136.91	3184.16	---	---	---
	11/08/10	136.69	3184.38	---	---	---
	05/11/11	136.87	3184.20	---	---	---
	11/08/11	136.77	3184.30	---	---	---
	05/16/12	136.74	3184.33	---	---	---
	10/10/12	136.85	3184.22	---	---	---
	05/16/13	136.72	3184.35	---	---	---
	10/07/13	137.45	3183.62	---	---	---
	05/01/14	136.81	3184.26	---	---	---
	10/05/14	136.61	3184.46	---	---	---
	05/21/15	136.68	3184.39	---	---	---
	10/19/15	136.55	3184.52	---	---	---
	05/25/16	136.84	3184.23	---	---	---
	10/17/16	136.43	3184.64	---	---	---
	05/10/17	136.66	3184.41	---	---	---
3321.07	10/25/17	136.80	3184.27	---	---	---
	05/22/18	136.55	3184.52	---	---	---
	10/16/18	136.64	3184.43	---	---	---
	06/20/19	144.05	3177.02	176.71	---	---
	11/19/19	136.46	3184.61	139.98	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-6	05/18/98	136.73	3184.42	170.00	2.00	120-170
3321.15	05/25/99	136.61	3184.54	---	---	---
	02/08/01	136.50	3184.65	---	---	---
	05/10/02	136.40	3184.75	---	---	---
	10/22/02	136.57	3184.58	---	---	---
	05/20/03	136.85	3184.30	---	---	---
	11/24/03	136.38	3184.77	---	---	---
	05/11/04	136.41	3184.74	---	---	---
	11/15/04	136.08	3185.07	---	---	---
	05/17/05	136.58	3184.57	---	---	---
	11/15/05	136.82	3184.33	---	---	---
	05/08/06	136.58	3184.57	---	---	---
	11/13/06	136.49	3184.66	---	---	---
	05/29/07	136.61	3184.54	---	---	---
	11/15/07	136.59	3184.56	---	---	---
	05/14/08	136.58	3184.57	---	---	---
	11/03/08	136.52	3184.63	---	---	---
	05/19/09	136.52	3184.63	---	---	---
	11/02/09	136.51	3184.64	---	---	---
	05/05/10	136.53	3184.62	---	---	---
	11/08/10	136.40	3184.75	---	---	---
	05/11/11	Well Casing Damaged				
	11/08/11	Well Casing Damaged				
	05/16/12	Well Casing Damaged				
	10/10/12	Well Casing Damaged				
	09/30/13	Well Plugged and Abandoned				
MW-6R	10/07/13	136.17	3185.33	176.00	4.00	136-176
3321.50	05/01/14	136.25	3185.25	---	---	---
	10/05/14	136.40	3185.10	---	---	---
	05/21/15	136.13	3185.37	---	---	---
	10/19/15	136.20	3185.30	---	---	---
	05/25/16	136.27	3185.23	---	---	---
	10/17/16	135.96	3185.54	---	---	---
	05/10/17	136.07	3185.43	---	---	---
3323.04	10/25/17	136.20	3186.84	---	---	---
	05/22/18	136.03	3187.01	---	---	---
	10/17/18	136.09	3186.95	---	---	---
	06/20/19	---	---	---	---	---
	11/19/19	136.04	3187.00	187.37	---	---
MW-7	05/18/98	136.19	3182.20	166.00	2.00	151-166
3318.39	05/25/99	135.98	3182.41	---	---	---
	02/08/01	135.87	3182.52	---	---	---
	05/10/02	135.67	3182.72	---	---	---
	10/22/02	135.89	3182.50	---	---	---
	05/20/03	136.12	3182.27	---	---	---
	11/24/03	135.71	3182.68	---	---	---
	05/11/04	135.74	3182.65	---	---	---
	11/15/04	135.78	3182.61	---	---	---
	05/17/05	135.68	3182.71	---	---	---
	11/15/05	135.90	3182.49	---	---	---
	05/08/06	135.64	3182.75	---	---	---
	11/13/06	135.58	3182.81	---	---	---
	05/29/07	135.73	3182.66	---	---	---
	11/15/07	135.64	3182.75	---	---	---
	05/14/08	135.68	3182.71	---	---	---
	11/03/08	135.66	3182.73	---	---	---
	05/19/09	135.63	3182.76	---	---	---
	11/02/09	135.65	3182.74	---	---	---
	05/05/10	135.80	3182.59	---	---	---
	11/08/10	135.51	3182.88	---	---	---
	05/11/11	135.68	3182.71	---	---	---
	11/08/11	135.62	3182.77	---	---	---
	05/16/12	135.55	3182.84	---	---	---
	10/10/12	135.79	3182.60	---	---	---
	05/16/13	135.59	3182.80	---	---	---
	10/07/13	NS	NS	---	---	---
	05/01/14	135.65	3182.74	---	---	---
	10/05/14	135.58	3182.81	---	---	---
	05/21/15	135.52	3182.87	---	---	---
	10/19/15	135.54	3182.85	---	---	---
	05/25/16	135.75	3182.64	---	---	---
	10/17/16	135.35	3183.04	---	---	---
	05/10/17	135.39	3183.00	---	---	---
3320.19	10/24/17	135.38	3184.81	---	---	---
	05/22/18	135.39	3184.80	---	---	---
	10/15/18	135.59	3184.60	---	---	---
	06/20/19	135.48	3184.71	162.60	---	---
	11/20/19	135.50	3184.69	162.58	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-8	05/18/98	134.36	3182.78	170.00	2.00	155-170
3317.14	05/25/99	134.21	3182.93	---	---	---
	02/08/01	134.08	3183.06	---	---	---
	05/10/02	133.95	3183.19	---	---	---
	10/22/02	134.18	3182.96	---	---	---
	05/20/03	134.38	3182.76	---	---	---
	11/24/03	133.99	3183.15	---	---	---
	05/11/04	134.02	3183.12	---	---	---
	11/15/04	134.11	3183.03	---	---	---
	05/17/05	133.97	3183.17	---	---	---
	11/15/05	134.21	3182.93	---	---	---
	05/08/06	133.94	3183.20	---	---	---
	11/13/06	133.90	3183.24	---	---	---
	05/29/07	134.02	3183.12	---	---	---
	11/15/07	133.76	3183.38	---	---	---
	05/15/08	133.98	3183.16	---	---	---
	11/03/08	134.01	3183.13	---	---	---
	05/19/09	133.97	3183.17	---	---	---
	11/02/09	134.00	3183.14	---	---	---
	05/05/10	134.08	3183.06	---	---	---
	11/08/10	134.03	3183.11	---	---	---
	05/11/11	133.98	3183.16	---	---	---
	11/08/11	133.96	3183.18	---	---	---
	05/16/12	133.84	3183.30	---	---	---
	10/10/12	134.15	3182.99	---	---	---
	05/16/13	133.94	3183.20	---	---	---
	10/07/13	133.90	3183.24	---	---	---
	05/01/14	133.91	3183.23	---	---	---
	10/05/14	133.75	3183.39	---	---	---
	05/21/15	133.88	3183.26	---	---	---
	10/19/15	133.88	3183.26	---	---	---
	05/25/16	133.86	3183.28	---	---	---
	10/17/16	133.68	3183.46	---	---	---
	05/10/17	133.84	3183.30	---	---	---
3319.06	10/24/17	133.72	3185.34	---	---	---
	05/22/18	133.77	3185.29	---	---	---
	10/17/18	133.87	3185.19	---	---	---
	06/20/19	133.87	3185.19	146.85	---	---
	11/20/19	133.84	3185.22	146.92	---	---
MW-9	05/18/98	132.89	3179.90	164.00	2.00	149-164
3312.79	05/25/99	132.68	3180.11	---	---	---
	02/08/01	132.52	3180.27	---	---	---
	05/10/02	137.20	3175.59	---	---	---
	10/22/02	132.56	3180.23	---	---	---
	05/20/03	132.75	3180.04	---	---	---
	11/24/03	132.35	3180.44	---	---	---
	05/11/04	132.39	3180.40	---	---	---
	11/15/04	132.43	3180.36	---	---	---
	05/17/05	132.26	3180.53	---	---	---
	11/15/05	132.60	3180.19	---	---	---
	05/08/06	132.26	3180.53	---	---	---
	11/13/06	132.19	3180.60	---	---	---
	05/29/07	132.32	3180.47	---	---	---
	11/14/07	132.34	3180.45	---	---	---
	05/15/08	132.29	3180.50	---	---	---
	11/03/08	132.33	3180.46	---	---	---
	05/19/09	132.21	3180.58	---	---	---
	11/02/09	132.35	3180.44	---	---	---
	05/05/10	132.41	3180.38	---	---	---
	11/08/10	132.10	3180.69	---	---	---
	05/11/11	132.22	3180.57	---	---	---
	11/08/11	132.19	3180.60	---	---	---
	05/16/12	132.05	3180.74	---	---	---
	10/10/12	132.32	3180.47	---	---	---
	05/16/13	132.08	3180.71	---	---	---
	10/07/13	131.94	3180.85	---	---	---
	05/01/14	Not Measured - Obstruction In Well				
	10/05/14	131.95	3180.84	---	---	---
	05/21/15	132.05	3180.74	---	---	---
	10/19/15	132.01	3180.78	---	---	---
	05/25/16	131.98	3180.81	---	---	---
	10/17/16	131.91	3180.88	---	---	---
	05/10/17	131.95	3180.84	---	---	---
3314.68	10/24/17	131.92	3182.76	---	---	---
	05/22/18	131.90	3182.78	---	---	---
	10/17/18	131.98	3182.70	---	---	---
	06/20/19	131.95	3182.73	161.46	---	---
	11/20/19	131.86	3182.82	162.00	---	---

Appendix E
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Cooper-Jal Unit South Injection Station
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ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-9A	05/18/98	132.65	3179.91	142.00	2.00	127-142
3312.56	05/25/99	132.43	3180.13	---	---	---
	02/08/01	132.37	3180.19	---	---	---
	05/10/02	137.20	3175.36	---	---	---
	10/22/02	132.35	3180.21	---	---	---
	05/20/03	132.55	3180.01	---	---	---
	11/24/03	132.10	3180.46	---	---	---
	05/11/04	132.14	3180.42	---	---	---
	11/15/04	132.19	3180.37	---	---	---
	05/17/05	132.06	3180.50	---	---	---
	11/15/05	132.35	3180.21	---	---	---
	05/08/06	132.02	3180.54	---	---	---
	11/13/06	131.09	3181.47	---	---	---
	05/29/07	132.08	3180.48	---	---	---
	11/14/07	132.06	3180.50	---	---	---
	05/15/08	132.03	3180.53	---	---	---
	11/03/08	131.98	3180.58	---	---	---
	05/19/09	132.00	3180.56	---	---	---
	11/02/09	131.90	3180.66	---	---	---
	05/05/10	131.96	3180.60	---	---	---
	11/08/10	131.85	3180.71	---	---	---
	05/11/11	132.06	3180.50	---	---	---
	11/08/11	131.95	3180.61	---	---	---
	05/16/12	131.81	3180.75	---	---	---
	10/10/12	132.09	3180.47	---	---	---
	05/16/13	131.88	3180.68	---	---	---
	10/07/13	131.90	3180.66	---	---	---
	05/01/14	Not Measured - Obstruction In Well				
	10/05/14	Not Measured - Obstruction In Well				
	05/21/15	Not Measured - Obstruction In Well				
	10/19/15	131.68	3180.88	---	---	---
	05/25/16	131.73	3180.83	---	---	---
	10/17/16	131.62	3180.94	---	---	---
	05/10/17	131.68	3180.88	---	---	---
3314.48	10/24/17	131.60	3182.88	---	---	---
	05/22/18	131.81	3182.67	---	---	---
	10/17/18	131.72	3182.76	---	---	---
	06/20/19	131.69	3182.79	141.72	---	---
	11/20/19	131.63	3182.85	145.66	---	---
MW-10	05/18/98	137.18	3182.12	166.00	2.00	151-166
3319.30	05/25/99	137.04	3182.26	---	---	---
	02/08/01	136.88	3182.42	---	---	---
	05/10/02	136.80	3182.50	---	---	---
	10/22/02	136.91	3182.39	---	---	---
	05/20/03	137.13	3182.17	---	---	---
	11/24/03	136.71	3182.59	---	---	---
	05/11/04	136.77	3182.53	---	---	---
	11/15/04	136.82	3182.48	---	---	---
	05/17/05	136.34	3182.96	---	---	---
	11/15/05	136.95	3182.35	---	---	---
	05/08/06	136.65	3182.65	---	---	---
	11/13/06	136.59	3182.71	---	---	---
	05/29/07	136.68	3182.62	---	---	---
	11/15/07	136.61	3182.69	---	---	---
	05/15/08	136.65	3182.65	---	---	---
	11/03/08	136.60	3182.70	---	---	---
	05/19/09	136.60	3182.70	---	---	---
	11/02/09	136.60	3182.70	---	---	---
	05/05/10	136.44	3182.86	---	---	---
	11/08/10	136.58	3182.72	---	---	---
	05/11/11	136.62	3182.68	---	---	---
	11/08/11	136.57	3182.73	---	---	---
	05/16/12	136.44	3182.86	---	---	---
	10/10/12	136.91	3182.39	---	---	---
	05/16/13	136.51	3182.79	---	---	---
	10/07/13	136.55	3182.75	---	---	---
	05/01/14	136.37	3182.93	---	---	---
	10/05/14	136.42	3182.88	---	---	---
	05/21/15	136.40	3182.90	---	---	---
	10/19/15	136.41	3182.89	---	---	---
	05/25/16	136.40	3182.90	---	---	---
	10/17/16	136.33	3182.97	---	---	---
	05/10/17	136.34	3182.96	---	---	---
3321.12	10/24/17	136.28	3184.84	---	---	---
	05/22/18	130.07	3191.05	---	---	---
	10/15/18	136.34	3184.78	---	---	---
	06/20/19	136.28	3184.84	160.72	---	---
	11/20/19	136.36	3184.76	160.71	---	---

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Cooper-Jal Unit South Injection Station
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Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-11	03/23/99	131.12	3178.57	140.00	4.00	125-140
3309.69	05/25/99	130.91	3178.78	---	---	---
	02/08/01	130.11	3179.58	---	---	---
	05/10/02	135.60	3174.09	---	---	---
	10/22/02	130.76	3178.93	---	---	---
	05/20/03	131.03	3178.66	---	---	---
	11/24/03	130.57	3179.12	---	---	---
	05/11/04	130.61	3179.08	---	---	---
	11/15/04	130.65	3179.04	---	---	---
	05/17/05	131.56	3178.13	---	---	---
	11/15/05	130.70	3178.99	---	---	---
	05/08/06	130.41	3179.28	---	---	---
	11/13/06	130.42	3179.27	---	---	---
	05/29/07	130.52	3179.17	---	---	---
	11/14/07	130.42	3179.27	---	---	---
	05/15/08	130.46	3179.23	---	---	---
	11/03/08	130.41	3179.28	---	---	---
	05/19/09	130.40	3179.29	---	---	---
	11/02/09	130.40	3179.29	---	---	---
	05/05/10	130.43	3179.26	---	---	---
	11/08/10	130.28	3179.41	---	---	---
	05/11/11	130.40	3179.29	---	---	---
	11/08/11	130.37	3179.32	---	---	---
	05/16/12	130.23	3179.46	---	---	---
	10/10/12	130.49	3179.20	---	---	---
	05/16/13	130.27	3179.42	---	---	---
	10/07/13	130.12	3179.57	---	---	---
	05/01/14	130.21	3179.48	---	---	---
	10/05/14	130.16	3179.53	---	---	---
	05/21/15	130.17	3179.52	---	---	---
	10/19/15	130.20	3179.49	---	---	---
	05/25/16	130.17	3179.52	---	---	---
	10/17/16	130.02	3179.67	---	---	---
	05/10/17	130.09	3179.60	---	---	---
3311.56	10/24/17	130.14	3181.42	---	---	---
	05/22/18	130.07	3181.49	---	---	---
	10/17/18	130.09	3181.47	---	---	---
	06/20/19	130.13	3181.43	165.71	---	---
	11/20/19	130.04	3181.52	172.30	---	---
MW-12*	05/10/02	139.57	3188.86	171.65	4.00	157-172
3328.43	10/22/02	139.73	3188.70	---	---	---
	05/20/03	139.72	3188.71	---	---	---
	11/24/03	139.69	3188.74	---	---	---
	05/11/04	139.64	3188.79	---	---	---
	11/15/04	139.68	3188.75	---	---	---
	05/17/05	139.58	3188.85	---	---	---
	11/15/05	139.83	3188.60	---	---	---
	05/08/06	139.55	3188.88	---	---	---
	11/13/06	139.53	3188.90	---	---	---
	05/29/07	139.65	3188.78	---	---	---
	11/16/07	139.05	3189.38	---	---	---
	05/14/08	139.69	3188.74	---	---	---
	11/03/08	139.61	3188.82	---	---	---
	05/19/09	139.59	3188.84	---	---	---
	11/02/09	139.62	3188.81	---	---	---
	05/05/10	139.66	3188.77	---	---	---
	11/08/10	139.55	3188.88	---	---	---
	05/11/11	139.04	3189.39	---	---	---
	11/08/11	139.68	3188.75	---	---	---
	05/16/12	139.65	3188.78	---	---	---
	10/10/12	139.95	3188.48	---	---	---
	05/16/13	139.67	3188.76	---	---	---
	10/07/13	139.50	3188.93	---	---	---
	05/01/14	139.58	3188.85	---	---	---
	10/05/14	139.56	3188.87	---	---	---
	05/21/15	139.65	3188.78	---	---	---
	10/19/15	139.65	3188.78	---	---	---
	05/25/16	139.71	3188.72	---	---	---
	10/17/16	139.45	3188.98	---	---	---
	05/10/17	139.61	3188.82	---	---	---
3330.33	10/24/17	139.72	3190.61	---	---	---
	05/22/18	139.59	3190.74	---	---	---
	10/17/18	139.68	3190.65	---	---	---
	06/20/19	139.72	3190.61	171.02	---	---
	11/20/19	139.65	3190.68	174.57	---	---

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Cooper-Jal Unit South Injection Station
Lea County, New Mexico

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Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-13*	05/10/02	144.45	3194.04	171.65	4.00	157-172
3338.49	10/22/02	144.49	3194.00	---	---	---
	05/20/03	144.90	3193.59	---	---	---
	11/24/03	144.37	3194.12	---	---	---
	05/11/04	144.47	3194.02	---	---	---
	11/15/04	144.56	3193.93	---	---	---
	05/17/05	144.36	3194.13	---	---	---
	11/15/05	144.60	3193.89	---	---	---
	05/08/06	144.29	3194.20	---	---	---
	11/13/06	144.38	3194.11	---	---	---
	05/29/07	144.54	3193.95	---	---	---
	11/16/07	144.54	3193.95	---	---	---
	05/14/08	144.45	3194.04	---	---	---
	11/03/08	144.36	3194.13	---	---	---
	05/19/09	144.51	3193.98	---	---	---
	11/02/09	144.35	3194.14	---	---	---
	05/05/10	144.39	3194.10	---	---	---
	11/08/10	144.40	3194.09	---	---	---
	05/11/11	144.60	3193.89	---	---	---
	11/08/11	144.74	3193.75	---	---	---
	05/16/12	144.70	3193.79	---	---	---
	10/10/12	144.82	3193.67	---	---	---
	05/16/13	144.70	3193.79	---	---	---
	10/07/13	144.60	3193.89	---	---	---
	05/01/14	144.53	3193.96	---	---	---
	10/05/14	144.70	3193.79	---	---	---
	05/21/15	144.78	3193.71	---	---	---
	10/19/15	144.75	3193.74	---	---	---
	05/25/16	144.87	3193.62	---	---	---
	10/17/16	144.54	3193.95	---	---	---
	05/10/17	144.66	3193.83	---	---	---
	07/11/17	Well Plugged and Abandoned				
MW-14	10/07/13	134.60	3182.24	171.50	4.00	131-171
3316.84	05/01/14	134.51	3182.33	---	---	---
	10/05/14	134.44	3182.40	---	---	---
	05/21/15	134.31	3182.53	---	---	---
	10/19/15	134.49	3182.35	---	---	---
	05/25/16	134.42	3182.42	---	---	---
	10/17/16	134.30	3182.54	---	---	---
	05/10/17	134.35	3182.49	---	---	---
3318.36	10/24/17	134.30	3184.06	---	---	---
	05/22/18	134.32	3184.04	---	---	---
	10/15/18	134.41	3183.95	---	---	---
	06/20/19	134.78	3183.58	178.74	---	---
	11/20/19	130.48	3187.88	178.42		
RW-1	05/21/99	134.32	3184.18	175.00	5.00	130-174
3318.50	05/25/99	134.24	3184.26	---	---	---
	02/08/01	134.15	3184.35	---	---	---
	05/10/02	134.00	3184.50	---	---	---
	10/22/02	134.17	3184.33	---	---	---
	05/20/03	134.40	3184.10	---	---	---
	11/24/03	134.02	3184.48	---	---	---
	05/11/04	134.01	3184.49	---	---	---
	11/15/04	134.06	3184.44	---	---	---
	05/17/05	133.97	3184.53	---	---	---
	11/15/05	134.20	3184.30	---	---	---
	05/08/06	133.93	3184.57	---	---	---
	11/13/06	133.92	3184.58	---	---	---
	05/29/07	134.00	3184.50	---	---	---
	11/15/07	133.88	3184.62	---	---	---
	05/14/08	133.98	3184.52	---	---	---
	11/03/08	133.99	3184.51	---	---	---
	05/19/09	133.92	3184.58	---	---	---
	11/02/09	134.00	3184.50	---	---	---
	05/05/10	134.03	3184.47	---	---	---
	11/08/10	133.81	3184.69	---	---	---
	05/11/11	133.83	3184.67	---	---	---
	11/08/11	133.88	3184.62	---	---	---
	05/16/12	133.84	3184.66	---	---	---
	10/10/12	135.01	3183.49	---	---	---
	05/16/13	133.85	3184.65	---	---	---
	10/07/13	133.68	3184.82	---	---	---
	05/01/14	133.91	3184.59	---	---	---
	10/05/14	133.64	3184.86	---	---	---
	05/21/15	133.73	3184.77	---	---	---
	10/19/15	133.73	3184.77	---	---	---
	05/25/16	133.73	3184.77	---	---	---
	10/17/16	133.80	3184.70	---	---	---
	05/10/17	133.67	3184.83	---	---	---
3320.31	10/25/17	133.80	3186.51	---	---	---
	05/22/18	133.61	3186.70	---	---	---
	10/16/18	133.76	3186.55	---	---	---
	06/20/19	133.64	3186.67	164.03	---	---
	11/20/19	133.63	3186.68	163.79	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
RW-2	02/08/01	135.58	3183.04	160.00	5.00	134-173
3318.62	05/10/02	135.55	3183.07	---	---	---
	10/22/02	135.55	3183.07	---	---	---
	05/20/03	135.58	3183.04	---	---	---
	11/24/03	135.54	3183.08	---	---	---
	05/11/04	135.48	3183.14	---	---	---
	11/15/04	135.43	3183.19	---	---	---
	05/17/05	135.46	3183.16	---	---	---
	11/15/05	135.65	3182.97	---	---	---
	05/08/06	135.42	3183.20	---	---	---
	11/13/06	135.47	3183.15	---	---	---
	05/29/07	135.54	3183.08	---	---	---
	11/15/07	135.48	3183.14	---	---	---
	05/14/08	135.48	3183.14	---	---	---
	11/03/08	135.44	3183.18	---	---	---
	05/19/09	135.44	3183.18	---	---	---
	11/02/09	135.45	3183.17	---	---	---
	05/05/10	135.47	3183.15	---	---	---
	11/08/10	135.30	3183.32	---	---	---
	05/11/11	135.55	3183.07	---	---	---
	11/08/11	135.46	3183.16	---	---	---
	05/16/12	135.40	3183.22	---	---	---
	10/10/12	135.49	3183.13	---	---	---
	05/16/13	135.33	3183.29	---	---	---
	05/01/14	135.40	3183.22	---	---	---
	10/05/14	135.29	3183.33	---	---	---
	05/21/15	135.28	3183.34	---	---	---
	10/19/15	135.32	3183.30	---	---	---
	05/25/16	135.21	3183.41	---	---	---
	10/17/16	135.15	3183.47	---	---	---
	05/10/17	135.14	3183.48	---	---	---
3320.42	10/25/17	135.30	3185.12	---	---	---
	05/22/18	135.12	3185.30	---	---	---
	10/15/18	135.21	3185.21	---	---	---
	06/20/19	135.23	3185.19	156.50	---	---
	11/19/19	135.08	3185.34	172.60	---	---
RW-2R	10/07/13	135.43	3183.19	173.00	6.00	133-173
3320.68	10/07/13	136.94	3183.74	---	---	---
	05/01/14	137.05	3183.63	---	---	---
	10/05/14	136.85	3183.83	---	---	---
	05/21/15	136.85	3183.83	---	---	---
	10/19/15	136.92	3183.76	---	---	---
	05/25/16	136.89	3183.79	---	---	---
	10/17/16	136.75	3183.93	---	---	---
	05/10/17	136.77	3183.91	---	---	---
3320.68	10/25/17	137.00	3183.68	---	---	---
	05/22/18	136.76	3183.92	---	---	---
	10/15/18	136.87	3183.81	---	---	---
	06/20/19	136.79	3183.89	176.82	---	---
	11/19/19	136.71	3183.97	188.97	---	---
RW-6R	10/07/13	135.43	3183.19	173.00	6.00	133-173

Notes:
1. TOC - Top of Casing
2. ft bgs - feet below ground surface
3. in - inches
4. NS - Not sampled
5. A - Indicates groundwater monitor well installed in shallow Uppermost Groundwater Bearing Unit.
6. MSL - Mean Sea Level
7. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.

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APPENDIX A

Site Background

REGULATORY BACKGROUND

Site assessment activities were initiated in 1993 when Environmental Spill Control, Inc. (ESCI) of Hobbs, New Mexico, performed a subsurface assessment of an unlined earthen produced water overflow pit, reportedly located adjacent to the western edge of the Site. During the investigation, five boreholes were advanced to depths ranging from 15 feet below ground surface (ft bgs) to 100 ft bgs. The investigation revealed the presence of hydrocarbon-impacted soil. In 1996, Texaco Exploration and Production, Inc. (Texaco) filed a notice of intent to close the pit with the New Mexico Oil Conservation Division (NMOCD). Approximately 1,248 cubic yards (cy) of hydrocarbon-impacted soil were removed from the pit. During the closure activities, the excavation was lined with imported clay and backfilled with imported caliche. Texaco submitted a pit closure report to the NMOCD in December 1996.

In 1997, the NMOCD requested additional assessment activities to define the vertical extent of affected soil beneath the former pit. Assessment activities performed by Highlander Environmental Corporation revealed elevated chloride concentrations in the soil. In October 1997, monitoring well MW-1 was installed near the former pit. Groundwater samples collected from the monitoring well contained chloride concentrations above the New Mexico Water Quality Control Commission (NMWQCC) Human Health Standards for Groundwater (250 milligrams per liter [mg/L]). Assessment activities performed through May 1998 included the installation of 13 additional monitoring wells. In 1998, electromagnetic (EM 34) terrain conductivity surveys were completed to identify areas of elevated chloride concentrations in soil.

REGULATORY FRAMEWORK

The NMOCD of the New Mexico Energy, Minerals, and Natural Resources Department has regulatory jurisdiction over corrective actions conducted at the Site. Corrective actions follow guidance given by the NMOCD in *Guidelines for Remediation of Leaks, Spills, and Releases (August 13, 1993)*. These guidelines require remediation of four constituents of concern (COCs) in groundwater to the human health standards of the NMWQCC set forth in New Mexico Administrative Code 20.6.2.3103B as follows:

Analyte	NMWQCC Standard for Groundwater (mg/L)
Chloride	250
Total Dissolved Solids (TDS)	1,000
Fluoride	1.6
Sulfate (SO4)	600

Note: mg/L = milligrams per liter

The original analyte list included carbonate alkalinity, bicarbonate alkalinity, total alkalinity, nitrate-N, calcium, magnesium, potassium, sodium, chloride, TDS, fluoride, and sulfate. In a letter to the NMOCD, dated December 15, 2014, GHD, on behalf of CEMC, requested a reduction in the list of analytical parameters and a reduction in the wells included in the monitoring program. In a subsequent email, dated May 19, 2015, the NMOCD approved the reduction of the list of analyses to chloride, TDS, fluoride, and sulfate only. No wells were eliminated from the monitoring program.

GROUNDWATER SAMPLING AND ANALYSIS

Groundwater at the Site is monitored semiannually via a network of 18 monitor wells and 2 recovery wells as outlined in the *Work Plan for Plume Delineation and Modification to Proposed Groundwater Monitoring Schedule* submitted on November 18, 1998 and approved by the NMOCD on February 2, 1999. Five down gradient monitoring wells (MW-8, MW-9, MW-10, MW-11, and MW-14) were sampled during the first semi-annual monitoring event conducted on May 22, 2018. All 20 monitoring and recovery wells were sampled during the second semi-annual monitoring event performed on October 15 through 19, 2018. Semi-annual groundwater monitoring activities and annual reporting to the NMOCD for this Site have been performed by GHD (formerly Conestoga-Rovers & Associates, Inc. [CRA]) since 2005 and continued until 2018.

In June 1998, Texaco prepared a groundwater corrective action plan to mitigate chloride concentrations and to provide plume containment by extracting groundwater from the affected groundwater-bearing unit (GWBU). Between 1999 and 2013, assessment activities included the installation of wells MW-6R, MW-11 through MW-14, RW-1, RW-2, and RW-2R. Monitoring well MW-6 was plugged and abandoned in September 2013 due to a damaged well casing. Due to on-Site wells (MW-1, MW-2, MW-2A, MW-3, and MW-6) fully delineating the northern boundary of the chloride plume, monitoring well MW-13, located approximately 1,000 feet up-gradient and off-Site, was plugged and abandoned on July 11, 2017.

Historically, chloride concentrations show decreasing trends in upgradient monitor wells MW-1, MW-2, and MW-5, as shown on concentration versus date graphs in Exhibit 1A, available in the *2018 Annual Groundwater Monitoring Report*. Increasing trends have been observed since 1997 in downgradient monitor wells MW-7, MW-9, MW-9A, and MW-10, as indicated in Exhibit 1B (available in the *2018 Annual Groundwater Monitoring Report)*, although more recent data indicate that these concentrations are stabilizing with some variability, with the exception of monitor well MW-7. Similar trends are apparent in TDS and sulfate concentrations. There are no strong trends in the observed historical concentrations of fluoride. Based on current and historical concentration data, the groundwater plume at the Site is fully delineated.

Soil Boring and Monitor Well Installation

The New Mexico Office of the State Engineer (NMOSE) governs water usage in the State of New Mexico. Applications for Permits to Appropriate Groundwater were submitted by Texaco in October 1999 and were approved with specific conditions in June 2008. A total of 65 acre-feet (ac-ft) per annum from the two on-Site recovery wells (RW-1 and RW-2) was granted by the NMOSE for environmental remediation purposes. Usage of groundwater was granted by the NMOSE under well permits CP-884 (RW-2; 32.5 ac-ft per annum) and CP-885 (RW-1; 32.5 ac-ft per annum).

Due to apparent damage at RW-2 that would prevent the installation of a pump, RW-2R was installed under well permit CP-884-POD2 to replace RW-2 in 2013. An application to change the designation of RW-2 from a recovery well to a monitoring well was submitted on December 16, 2016. This was done to allow the well to remain in the monitoring well network instead of being plugged and abandoned. The change was conditionally approved, pending further assessment of the well integrity, by the NMOSE in a phone conversation on January 9, 2017. On February 10, 2017, GHD further assessed RW-2 and found the annular seal to be compliant with New Mexico Administrative Code (NMAC) 19.27.4.30 Regulations and the well casing and well pad to be in good condition. These findings were documented in a letter sent

to the NMOSE on February 16, 2017. Based on GHD's reported understanding of the January 9, 2017, conversation, RW-2 is now designated as a monitoring well.

To date, neither RW-1 nor RW-2R have been equipped for groundwater recovery. Notifications to NMOSE will be submitted if these wells become equipped in the future. Until each well is permanently equipped, an Extension of Time (EOT) request will be sent to the NMOSE. An EOT was received by NMOSE on April 23, 2018. The request was approved in written correspondence and extended through April 30, 2020.

GEOLOGY/HYDROGEOLOGY ASSESSMENT

Site Setting

The Site is located on Lea County Road J7, approximately five and a half miles northwest of Jal, New Mexico, in Section 24, Township 24 South, Range 36 East, Lea County, New Mexico. The latitude and longitude coordinates of the Site are 32° 12' 7.13" N and 103° 13' 4.36" W.

Land in the vicinity of the Site is utilized primarily for livestock ranching and oil and gas production, and production and has areas of undeveloped rangeland vegetated with indigenous grass. An injection well facility, operated by Resaca Resources, LLC (Resaca), is located adjacent to the Site. No active Chevron U.S.A. Inc. (Chevron) operations are present in the area.

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 October 2013 GHD field work and logs from previous groundwater assessments. The locations of the soil borings and monitoring wells are shown on Figure 2. The subsurface stratigraphy typically included the following:

- A thick sand (0 to 163 feet) layer of unconsolidated fine sand containing trace caliche nodules. Sand grains gradually increasing to fine to medium grained at 140 feet,
- A fine sand layer typically ranging from 3 feet to 30 feet,
- A sandy clay layer typically ranging from 2 feet to 11 feet directly above the upper Dockum "redbeds",
- Red and gray weathered shale and mudstone "redbeds" of the Triassic Dockum Group that form the underlying confining layer.

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 140 to 190 ft bgs, based on the groundwater monitoring event conducted in June/November 2019. 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 with an average horizontal hydraulic gradient of approximately 0.0169 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 an electronic interface 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™. Geochemical water quality parameters (pH, temperature, and conductivity) were recorded at the sampling depth. 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 chloride and sulfate by Environmental Protection Agency (EPA) Method 300.0 and total dissolved solids (TDS) by SM 2540C.

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification MW-1 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 171.17 Measuring Point TOC Depth to water 134.56

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~~ Caper Jal Project Number ~~B0047270.0007~~

Well Identification MW-2 Inspection Date 10/13/19 Inspector LR

Measured Well Depth 108.39 Measuring Point TOC Depth to water 134.27

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-2A Inspection Date 01/13/19 Inspector LB

Measured Well Depth 142.47 Measuring Point TOC Depth to water 134.43

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-3 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 171.93 Measuring Point TOC Depth to water 132.24

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~~ Cooper Jal Project Number B0047270.0007

Well Identification MW-4 Inspection Date 01/13/19 Inspector LB

Measured Well Depth 141.81 Measuring Point TOC Depth to water 135.21

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~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-4A Inspection Date 12/13/19 Inspector LB

Measured Well Depth 145.55 Measuring Point TOC Depth to water 134.98

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~~ Casper Jail Project Number ~~B0047270.0007~~

Well Identification MW - 5 Inspection Date 11/13/19 Inspector LB

Measured Well Depth 173.72 Measuring Point TOC Depth to water 136.65

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 (Leap of Jul) Project Number B0047270.0007

Well Identification MW-5A Inspection Date 4/23/19 Inspector LB

Measured Well Depth 114.05 Measuring Point TC Depth to water 96.71

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~~ Cooper Jal Project Number B0047270.0007

Well Identification MW-7 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 162.60 Measuring Point TOC Depth to water 135.46

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: something in well when ~~checking~~ tagging conductivity probe.

Well Inspection Checklist and Reporting Form

Site Name/ Location ~~Chevron Fuller~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-8 Inspection Date ~~TOC~~ 12/13/19 Inspector LB

Measured Well Depth 146.85 Measuring Point TOC Depth to water 133.87

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: obstruction @ 136', Old Hydrasleeve was pulled out prior to sampling.

Well Inspection Checklist and Reporting Form

Site Name/ Location ~~Chevron Fuller~~ Cooper Jal Project Number ~~B0047270.0007~~

Well Identification MW-9 Inspection Date 06/13/19 Inspector LB

Measured Well Depth 161.46 Measuring Point TOC Depth to water 131.95

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 Cooper Jal Chevron Fuller Project Number B0047270.0007

Well Identification MW-9A Inspection Date 06/13/19 Inspector LB

Measured Well Depth 141.72 Measuring Point TOC Depth to water 131.69

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 (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification MW-1D Inspection Date 06/13/19 Inspector LR

Measured Well Depth 160.72 Measuring Point TOC Depth to water 136.28

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: something in well, can't get hydrawleeve.

Well Inspection Checklist and Reporting Form

Site Name/ Location Chevron Fuller (Cooper Jal) Project Number B0047270.0007

Well Identification MW-11 Inspection Date Oct 13 19 Inspector LR

Measured Well Depth 145.71 Measuring Point TOC Depth to water 136.13

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~~ Casper Jail Project Number ~~B0047270.0007~~

Well Identification MW-12 Inspection Date 6/13/19 Inspector LB

Measured Well Depth 171.02 Measuring Point TOC Depth to water 139.72

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 ~~Chevron Fuller~~ Cooper Inc Project Number B0047270.0007

Well Identification MW-14 Inspection Date 12/13/19 Inspector LB

Measured Well Depth 173.74 Measuring Point TOC Depth to water 134.38

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 (Leeper Jal) Project Number ~~B0047270.0007~~

Well Identification RW-1 Inspection Date 11/13/19 Inspector LR

Measured Well Depth 164.03 Measuring Point TOC Depth to water 133.64

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~~ Cooper Jail Project Number ~~B0047270.0007~~

Well Identification MW-2 Inspection Date 4/12/19 Inspector LB

Measured Well Depth 156.50 Measuring Point TOC Depth to water 135.23

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 (Cooper Jal) Project Number ~~B0047270.0007~~

Well Identification RW-2R Inspection Date 4/17/19 Inspector LB

Measured Well Depth 176.82 Measuring Point TOC Depth to water 136.79

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: Cooper Jal
Well Identification: MW-1
Static Water Level: 134.56
Stop Time:

Date: 06/13/19
Personnel: JL / LB
Total Depth: 171.17
Start Time:

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.126	20.13
136	1.115	19.80
138	1.113	19.85
140	1.113	19.84
142	1.113	19.84
144	1.115	19.25
146	1.116	19.25
148	1.122	19.25
150	1.162	19.26
152	1.812	19.27
154	3.536	19.27
156	4.100	19.26
158	4.174	19.29
160	4.210	19.80
162	4.221	19.81
164	4.266	19.81
166	4.604	19.87
168	4.827	19.85

Well Conductivity Profile Field data Sheet

Site Name: Leeper Jal
Well Identification: MW-2
Static Water Level: 134.27
Stop Time: 1058

Date: 11/13/19
Personnel: JL/LB
Total Depth: 168.39
Start Time: 1041

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.312	20.51
136	0.310	20.30
138	0.318	20.16
140	0.348	20.13
142	0.389	20.13
144	0.415	20.13
146	0.452	20.13
148	0.467	20.14
150	0.474	20.14
152	0.480	20.15
154	0.488	20.16
156	0.490	20.17
158	0.499	20.17
160	0.507	20.18
162	0.575	20.19
164	1.116	20.20
* 166	1.714	20.21
~~168~~ LB		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-44
Static Water Level: 134.43
Stop Time: 1036

Date: 11/13/19
Personnel: JL / LB
Total Depth: 142.47
Start Time: 1030

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.773	20.41
136	0.762	20.38
138	0.762	20.18
140	0.768	20.12

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-3
Static Water Level: 132.24
Stop Time: 1107

Date: 04/13/19
Personnel: JL/LB
Total Depth: ~~132~~. 171.93
Start Time: 1100

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
132	0.1635	20.25
134	0.1632	20.07
136	0.1624	19.91
138	0.1628	19.83
140	0.1627	19.82
142	0.1626	19.81
144	0.1626	19.81
146	0.1627	19.81
148	0.1627	19.81
150	0.1627	19.81
152	0.1627	19.82
154	0.1629	19.82
156	0.1627	19.82
158	0.1629	19.83
160	0.1627	19.83
162	0.1627	19.84
* 164	0.1627	19.84
166	0.1626	19.85
168	0.1625	19.85
170	0.1624	19.87
172	0.1648	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4
Static Water Level: 135.21
Stop Time: 3:21 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 171.81
Start Time: 3:15 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	10.353	20.101
138	10.343	20.42
140	10.310	20.10
142	10.326	20.09
144	10.424	20.08
146	10.999	20.07
148	7.910	20.06
150	9.034	20.06
152	10.03	20.06
154	10.108	20.06
156	11.00	20.06
158	13.31	20.07
160	15.37	20.07
162	19.49	20.07
164	~~24.20~~ 24.20	20.07
166	35.20	20.08
168	38.83	20.08
170	39.50	20.08
172	39.82	20.11

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4A
Static Water Level: 134.98
Stop Time: 3:10 pm

Date: 06/13/14
Personnel: JL / LB
Total Depth: 145.55
Start Time: 3:00 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.508	20.72
136	1.502	20.63
136	1.502	20.24
140	1.519	20.11
* 142	1.742	20.08

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-5
Static Water Level: 136.65
Stop Time: 0827

Date: 11/13/19
Personnel: JL / LB
Total Depth: 173.72
Start Time: 0756

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	5.315	20.14 F
138	5.304	20.24
140	5.302	20.20
142	5.302	20.18
144	5.303	20.17
146	5.301	20.17
148	5.301	20.17
150	5.302	20.17
152	5.303	20.15
154	5.300	20.15
156	5.301	20.19
158	5.301	20.18
160	5.304	20.19
162	5.303	20.19
164	5.311	20.20
166	5.378	20.20
168	5.375	20.20
170	6.375	20.20
* 172	10.32	20.24

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-5R
Static Water Level: 136.74
Stop Time: 0842

Date: 08/13/19
Personnel: JL / LR
Total Depth: 144.05
Start Time: 0832

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.982	20.26
136	0.977	20.26
140	0.971	20.20
142	0.970	20.18
~~144LB~~		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-7
Static Water Level: 135.48
Stop Time: 0115 pm

Date: Oct 13/19
Personnel: JL / LB
Total Depth: 162.60
Start Time: 0104 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	5.234	20.19
138	5.227	20.166
140	5.236	20.48
142	5.384	20.24
144	5.731	20.17
146	6.167	20.15
148	6.876	20.15
150	7.789	20.14
152	8.715	20.14
154	9.779	20.14
156	11.09	20.14
* 158	11.42	20.14
Something in well preventing probe from going		
total depth		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-8
Static Water Level: 133.67
Stop Time: 1128

Date: 08/13/19
Personnel: JL/LB
Total Depth: 146.85
Start Time: 1126

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.452	20.62
136	0.448	20.23
138	BL/A	
140		
142		
144		
146		
	Could not go past	
	138' w/ conductivity	
	probe due to	
	blockage	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-9
Static Water Level: 131.95
Stop Time: 1240

Date: 06/13/19
Personnel: JL / LB
Total Depth: 161.46
Start Time: 1235

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
132	1.430	20.160
134	1.433	20.124
136	1.475	20.121
138	1.560	20.119
140	1.752	20.118
142	2.110	20.117
144	2.416	20.117
146	2.599	20.116
148	2.674	20.116
150	2.754	20.116
152	2.838	20.116
154	2.857	20.116
156	2.854	20.116
158	2.849	20.116
160	2.460	20.116

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal **Date:** 06/13/19
Well Identification: MW-4A **Personnel:** JL/LB
Static Water Level: 131.69 **Total Depth:** 141.72
Stop Time: 1232 **Start Time:** 1228

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
130	0.695	20.35
132	1.269	20.24
134	1.750	20.20
* 136	2.254	20.20

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-10
Static Water Level: 136.28
Stop Time: 2:38 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 160.72
Start Time: 2:34 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.180	20.07
136	1.201	20.55
140	1.255	20.27
142	1.279	20.20
* bladder in well; can't get hydrasleeve		

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-11
Static Water Level: 130.13
Stop Time: 1156

Date: 06/13/19
Personnel: JL / LB
Total Depth: 165.71
Start Time: 1150

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
130	0.600	20.52
132	0.597	20.31
134	0.597	20.20
136	0.596	20.14
138	0.596	20.18
140	0.596	20.18
142	0.596	20.17
144	0.596	20.17
146	0.596	20.16
146	0.598	20.17
150	0.600	20.17
152	0.603	20.16
154	0.607	20.17
156	0.611	20.16
158	0.617	20.17
160	0.622	20.17
162	0.626	20.17
164	0.630	20.17
166	0.632	20.18

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-12
Static Water Level: 139.92
Stop Time: 1047

Date: 06/13/19
Personnel: JL/LB
Total Depth: 171.02
Start Time: 1040

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
140	1.078	20.07
142	1.069	20.36
144	1.044	20.27
146	1.129	20.23
148	1.178	20.21
150	1.296	20.20
152	1.274	20.19
154	1.355	20.19
156	1.389	20.18
158	1.426	20.18
160	1.495	20.18
162	1.514	20.18
164	1.514	20.18
166	1.519	20.18
168	1.521	20.18
170	1.350	20.23

Well Conductivity Profile Field data Sheet

Site Name: Leeper Jal
Well Identification: WWD-14
Static Water Level: 134.38
Stop Time: 1:33 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 173.74
Start Time: 1:22 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	0.1640	20.26
136	0.1626	20.19
138	0.1623	20.19
140	0.1623	20.07
142	0.1623	20.07
144	0.1623	20.07
146	0.1624	20.07
148	0.1624	20.07
150	0.1624	20.07
152	0.1623	20.07
154	0.1623	20.07
156	0.1623	20.07
158	0.1622	20.07
160	0.1623	20.07
162	0.1626	20.08
164	0.1645	20.08
166	0.1646	20.09
168	0.1649	20.10
170	0.1644	20.10
172	0.1647	20.11

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: RW-1
Static Water Level: 133.04
Stop Time: 3:45 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 164.03
Start Time: 3:35 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
134	1.336	20.36
136	1.336	20.11
138	1.326	20.06
140	1.330	20.05
142	1.367	20.05
144	1.687	20.04
146	1.991	20.04
148	2.997	20.04
150	7.998	20.04
152	15.70	20.05
154	23.106	20.05
156	27.52	20.06
158	27.87	20.06
160	27.94	20.07
162	27.95	20.07
164	27.95	20.07

Well Conductivity Profile Field data Sheet

Site Name: Culp or Jal
Well Identification: ~~AA6~~ KW 2
Static Water Level: 135.23
Stop Time: 1:51 pm

Date: 06/13/19
Personnel: JL / LB
Total Depth: 156.50
Start Time: 1:45 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.624	20.37
138	1.6067	20.20
140	1.997	20.16
142	2.336	20.17
144	2.423	20.16
146	2.439	20.16
148	3.957	20.16
150	10.50	20.16
152	14.20	20.16
154	16.18	20.16
156	14.53	20.19
158	14.52	20.20
160	14.52	20.20

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: RW-2R
Static Water Level: 136.79
Stop Time: 2:21 pm

Date: 04/13/19
Personnel: JL / LB
Total Depth: 176.82
Start Time: 2:15 pm

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	1.479	20.42
138	1.483	20.33
140	1.747	20.22
142	5.598	20.21
144	13.41	20.17
146	17.19	20.18
148	18.95	20.18
150	20.13	20.18
152	20.34	20.18
154	20.40	20.18
156	20.44	20.18
158	20.47	20.18
160	20.49	20.18
162	20.50	20.18
164	20.52	20.19
166	20.61	20.19
168	20.80	20.19
170	20.92	20.19
172	20.99	20.20
174	21.01	20.20
176	20.54	20.21

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-6R
Static Water Level: 136.15
Stop Time: 1005

Date: 06/19/19
Personnel: CB/JL
Total Depth: 174.02
Start Time: 0930

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
136	0.707	20.04
138	0.705	20.07
140	0.704	20.05
142	0.703	20.04
144	0.703	20.03
146	0.704	20.03
148	0.703	20.03
150	0.704	20.03
152	0.704	20.03
154	0.704	20.03
156	0.706	20.04
158	0.707	20.04
160	0.706	20.05
162	0.708	20.05
164	0.707	20.05
166	0.706	20.05
168	0.704	20.05
170	0.703	20.06
172	0.723	20.07
174	0.709	20.08
* 176	0.947	20.09
~~178~~	~~0.947 LR~~	

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Micropurge Sampling Log

Project: CVX HEU Transfer

Project No. _____

Page 1 of 1

Site Location: Eddy Co NM

Date 6/20/19

Site/Well No. MW-1

Replicate No. _____

Code No. _____

Weather: Hot, sunny

Sampling Time: Begin 9:35 am End 9:38 am

Evacuation Data

Sounded Well Depth (ft bmp) 171.17

Depth to Water (ft bmp) 134.56

Gallons Pumped/Bailed Prior to Sampling Full Hydrosleeve

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method Hydrosleeve

Field Parameters

Color Clear and Not

Odor _____

Appearance Sediment @ bottom, 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	Turbidity (NTU)		
9:30 am	—	—	2.30	173.0	7.32	20.49	3,941	—		

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	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

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Micropurge Sampling Log

Project: CVX HES Transfer

Project No.

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Site Location: Cooper Jal

Date 6/20/19

Site/Well No. MW-2

Replicate No.

Code No.

Weather: Hot / sunny

Sampling Time: Begin 9:47 End 9:47

Evacuation Data

Sounded Well Depth (ft bmp) 168.39

Depth to Water (ft bmp) 134.27

Gallons Pumped/Bailed Prior to Sampling FULL MICROSLEEVE

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi)

Purge Time Begin End

Pumping Rate (gpm)

Evacuation Method MICROSLEEVE

Field Parameters

Color Clear / 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 ©	COND ( )	Turbidity (NTU)		
9:49am	—	—	2.86	146.7	7.38	21.21	1.121	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
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

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Micropurge Sampling Log

Project: CVX HEU Trimuster | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 04/20/19

Site/Well No. MW - 2A | Replicate No. | Code No.

Weather: HOT, SUNNY | Sampling Time: Begin 9:44 | End 9:44

Evacuation Data

Sounded Well Depth (ft bmp): 142.47

Depth to Water (ft bmp): 134.43

Gallons Pumped/Bailed Prior to Sampling: FULL HydraSleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ____ End ____

Pumping Rate (gpm):

Evacuation Method: HydraSleeve

Field Parameters

Color: Clear / 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 ©	COND ( )	Turbidity (NTU)		
9:44am	—	—	2.42	147.1	7.71	20.88	6.743	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HEN TRANSFER | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 6/20/19

Site/Well No. MW-3 | Replicate No. | Code No.

Weather: HOT, SUNNY | Sampling Time: Begin 9:32 am | End 9:32 am

Evacuation Data

Sounded Well Depth (ft bmp): 171.93

Depth to Water (ft bmp): 132.24

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ____ End ____

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

Field Parameters

Color: —

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 ©	COND ( )	Turbidity (NTU)		
9:32am	—	—	2.43	1168.0	7.69	20.60	0.633	—		

Constituents Sampled	Container Description	Number	Preservative

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

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Micropurge Sampling Log

Project: CVX HEU Transfer

Site Location: Lower Jal

Site/Well No. MW-4

Weather: Hot, cloudy

Project No. —

Replicate No. —

Sampling Time: Begin 10:22 am

Page 1 of 1

Date 06/20/19

Code No. —

End 10:22

Evacuation Data

Sounded Well Depth (ft bmp) 171.81

Depth to Water (ft bmp) 135.21

Gallons Pumped/Bailed Prior to Sampling FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp) N/A

Sample Pump controller Settings (cpm/psi) —

Purge Time Begin — End —

Pumping Rate (gpm) —

Evacuation Method HYDRASLEEVE

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 ( )	Turbidity (NTU)		
10:22am	—	—	1.13	1108.4	7.18	21.57	9.462	—		

Constituents Sampled	Container Description	Number	Preservative

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

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Micropurge Sampling Log

Project: CVX HEN Transfer | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 06/20/19

Site/Well No. MW-4A | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:24 End 10:24

Evacuation Data

Sounded Well Depth (ft bmp): 145.55

Depth to Water (ft bmp): 134.98

Gallons Pumped/Bailed Prior to Sampling: Full Hydrawell

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrawell

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 ©	COND ( )	Turbidity (NTU)		
10:24	—	—	1.45	134.5	7.99	21.64	1.827	—		

Constituents Sampled	Container Description	Number	Preservative

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

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Micropurge Sampling Log

Project: CVX HES Transfer | Project No. | Page 1 of 1

Site Location: Lea County, NM | Date 6/20/19

Site/Well No. MW-5 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:05 am | End 10:05 am

Evacuation Data

Sounded Well Depth (ft bmp): 173.92

Depth to Water (ft bmp): 136.65

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL / LM

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
10:05 am	—	—	1.03	161.3	7.00	21.46	5.174	—		

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	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

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Micropurge Sampling Log

Project: CVX HEU Transfer | Project No. | Page 1 of 1

Site Location: Carlsbad | Date 4/20/19

Site/Well No. MW-JA | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:08 | End 10:08

Evacuation Data

Sounded Well Depth (ft bmp): 1414.05

Depth to Water (ft bmp): 176.71

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: Hydrasleeve

Field Parameters

Color: rust, clear

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 ©	COND ( )	Turbidity (NTU)		
10:08 am	—	—	2.37	146.7	7.51	21.54	0.811	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HFS Treatment | Project No. | Page 1 of 1

Site Location: Cooper 1a1 | Date 6/20/19

Site/Well No. MW-7 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:20 End 11:20

Evacuation Data

Sounded Well Depth (ft bmp): 162.00

Depth to Water (ft bmp): 135.48

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRASLEEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: HYDRASLEEVE

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 ©	COND ( )	Turbidity (NTU)		
11:20 am	—	—	0.86	189.5	6.88	21.70	11.41	—		

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	miligrams 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: Upper Jal   Date 06/20/19

Site/Well No. MW-8   Replicate No. ________   Code No. ________

Weather: Hot, sunny   Sampling Time: Begin ________ End ________

Evacuation Data

Sounded Well Depth (ft bmp): 144.85

Depth to Water (ft bmp): 133.87

Gallons Pumped/Bailed Prior to Sampling: N/A

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi):

Purge Time Begin ________ End ________

Pumping Rate (gpm):

Evacuation Method:

Field Parameters

Color: N/A

Odor:

Appearance:

*IRON, ferrous:

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
no sample collected, unable to lower YSI due to blockage										

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX HTU Transfer | Project No. | Page 1 of 1

Site Location: Casper Jail | Date 6/20/19

Site/Well No. MW-9 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:30am End 11:30

Evacuation Data

Sounded Well Depth (ft bmp): 161.46

Depth to Water (ft bmp): 131.95

Gallons Pumped/Bailed Prior to Sampling: Full Hydrostress

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrostress

Field Parameters

Color: tan

Odor: —

Appearance: cloudy

*IRON, ferrous: N/A

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL / LR

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND	Turbidity NTU		
11:30am	—	—	1.73	169.4	7.26	22.48	2.297	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
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 HCV Transfer | Project No. | Page 1 of 1

Site Location: Hobbs, NM | Date 6/20/19

Site/Well No. MW-9A | Replicate No. — | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:34 End 11:34

Evacuation Data

Sounded Well Depth (ft bmp): 141.72

Depth to Water (ft bmp): 131.69

Gallons Pumped/Bailed Prior to Sampling: Full Hydrosleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin — End —

Pumping Rate (gpm):

Evacuation Method: Hydrosleeve

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 ©	COND	Turbidity (NTU)		
11:34am	—	—	1.083	168.4	7.33	22.74	1.247	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens 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	miligrams 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: Eddy Co. | Date 06/20/19

Site/Well No. MW-10 | Replicate No. | Code No.

Weather: Hot, cloudy | Sampling Time: Begin | End

Evacuation Data

Sounded Well Depth (ft bmp): 160.72

Depth to Water (ft bmp): 130.25

Gallons Pumped/Bailed Prior to Sampling: N/A

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method:

Field Parameters

Color: N/A

Odor:

Appearance:

*IRON, ferrous:

*SULFIDES:

Data Frame:

Remarks:

Sampling Personnel: JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
no sample collected, unable to lower YSI cord to bottom										

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	milivolts
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 Transition | Project No. | Page 1 of 1

Site Location: Cooper Jal | Date 06/RO/19

Site/Well No. MW-11 | Replicate No. — | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:41 | End 11:41

Evacuation Data

Sounded Well Depth (ft bmp): 165.71

Depth to Water (ft bmp): 130.13

Gallons Pumped/Bailed Prior to Sampling: Full Hydrostleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin End

Pumping Rate (gpm):

Evacuation Method: Hydrostleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES: N/A

Data Frame:

Remarks: FB-1 Collected at 12:50 pm.

Sampling Personnel: JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp (C)	COND ( )	Turbidity (NTU)		
11:41am	—	—	2.13	172.2	7.68	21.51	0.625	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
ft	feet	mS	microsiemens	NTU	Nephelometric Turbidity Units
ml/min	milliliters per minute	N/A	not applicable	umhos/cm	Micromhos per centimeter
mg/L	miligrams 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: Cooper Jal | Date 06/20/19

Site/Well No. MW-12 | Replicate No. — | Code No.

Weather: HOT, SUNNY | Sampling Time: Begin 8:52 am | End 8:52 am

Evacuation Data

Sounded Well Depth (ft bmp): 171.02

Depth to Water (ft bmp): 119.72

Gallons Pumped/Bailed Prior to Sampling: FULL HYDRAULEVE

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ____ End ____

Pumping Rate (gpm):

Evacuation Method: HYDRAULEVE

Field Parameters

Color: —

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 ©	COND ( )	Turbidity (NTU)		
8:52 am	—	—	2.35	192.1	8.23	20.58	1.226	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: CVX MEU Transfer | Project No. | Page 1 of 1

Site Location: Eddy Co, NM | Date 10/20/19

Site/Well No. MW-14 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 11:05 | End 11:05 am

Evacuation Data

Sounded Well Depth (ft bmp): 178.74

Depth to Water (ft bmp): 134.75

Gallons Pumped/Bailed Prior to Sampling: Full hydrosleeve

Sample Pump Intake Depth (ft bmp):

Sample Pump controller Settings (cpm/psi): N/A

Purge Time: Begin | End

Pumping Rate (gpm):

Evacuation Method: Hydrosleeve

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 ©	COND ( )	Turbidity (NTU)		
11:05 am	—	—	1.46	146.2	8.21	20.24	0.714	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: LVX HTV Transfer | Project No. ______ | Page 1 of 1

Site Location: [illegible] | Date 6/20/19

Site/Well No. RW-1 | Replicate No. Dup-2 | Code No. ______

Weather: Hot, sunny | Sampling Time: Begin 10:14am | End 10:14am

Evacuation Data

Sounded Well Depth (ft bmp): 164.03

Depth to Water (ft bmp): 133.64

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ______ End ______

Pumping Rate (gpm):

Evacuation Method: Hydrasleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES: ↓

Data Frame: ↓

Remarks: Dup-2 taken at 10:16 am

Sampling Personnel: JL/LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
10:14am	—	—	0.83	193.6	6.57	21.31	24.20	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens 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	miligrams per liter	NR	not recorded	VOC	Volatile Organic Compounds

ARCADIS

Micropurge Sampling Log

Project: CVX HEC Transfer | Project No. | Page 1 of 1

Site Location: Lower Jal | Date 6/20/19

Site/Well No. HW-2 | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:07 | End 11:51

Evacuation Data

Sounded Well Depth (ft bmp): 156.50

Depth to Water (ft bmp): 135.23

Gallons Pumped/Bailed Prior to Sampling: FULL HydraSleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi):

Purge Time: Begin ____ End ____

Pumping Rate (gpm):

Evacuation Method: HydraSleeve

Field Parameters

Color: clear

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 ©	COND ( )	Turbidity (NTU)		
10:57am	—	—	0.99	1865	8.16	21.99	9.319	—		

Constituents Sampled	Container Description	Number	Preservative

bmp	below measuring point	ml	milliliter	s.u.	standard units
°C	degrees Celsius	mS/cm	milisiemens per centimeter	mv	milivolts
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 ~~HYDROCARBON~~ Transfer Project No. _____ Page 1 of 1

Site Location: Cooper Jal Date 6/20/19

Site/Well No. MW - 6R Replicate No. Dup - 1 Code No. _____

Weather: Hot / Windy Sampling Time: Begin 9:53 am End 9:53

Evacuation Data

Sounded Well Depth (ft bmp) _____

Depth to Water (ft bmp) _____

Gallons Pumped/Bailed Prior to Sampling: Full Hydrasleeve

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi) _____

Purge Time: Begin _____ End _____

Pumping Rate (gpm) _____

Evacuation Method: Hydrasleeve

Field Parameters

Color: Clear

Odor: —

Appearance: —

*IRON, ferrous: N/A

*SULFIDES: ↓

Data Frame: ↓

Remarks: Dup-1 collected @ 9:55 am

Sampling Personnel: JL / LB

Time (min)	Water Level (feet)	Volume Purged	DO (mg/L)	ORP (mv)	pH (su)	Temp ©	COND ( )	Turbidity (NTU)		
9:53 am	—	—	2.15	141.2	7.51	21.16	0.695	—		

Constituents Sampled	Container Description	Number	Preservative

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

ARCADIS

Micropurge Sampling Log

Project: LVX HEC Transfer | Project No. | Page 1 of 1

Site Location: Conner Jal | Date 06/20/19

Site/Well No. RW - LOR | Replicate No. | Code No.

Weather: Hot, sunny | Sampling Time: Begin 10:49 am End 10:49 am

Evacuation Data

Sounded Well Depth (ft bmp)

Depth to Water (ft bmp)

Gallons Pumped/Bailed Prior to Sampling: Peristaltic Hose

Sample Pump Intake Depth (ft bmp): N/A

Sample Pump controller Settings (cpm/psi)

Purge Time Begin End

Pumping Rate (gpm)

Evacuation Method: Peristaltic Hose

Field Parameters

Color: Clear

Odor: —

Appearance: Cloudy

*IRON, ferrous: N/A

*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)		
10:49 am	—	—	0.84	185.4	6.68	23.91	20.24	—		

Constituents Sampled	Container Description	Number	Preservative

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

Gauging Form
HES Transfer Site Name:Cooper Jal
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Monitoring Well ID	Date Gauged	DTW (ft btoc)	Total Depth (ft btoc)	Notes
MW-1	11/20/19	134.45	174.2	
MW-2	11/20/19	134.21	168.57	
MW-2A	11/20/19	134.24	142.23	
MW-3	11/19/19	132.50	175.9	
MW-4	11/19/19	[illegible]	[illegible]	← 177.64
MW-4A	11/19/19	134.95	147.60	
MW-5	11/19/19	136.91	173.50	
MW-5A	11/19/19	136.46	139.18	
MW-6	—	—	—	No longer exists (sold to Jerry L.)
MW-6R	11/19/19	136.04	197.37	
MW-7	11/20/19	135.5	162.58	
MW-8	11/20/19	133.64	146.92	
MW-9	11/20/19	131.96	162.0	
MW-9A	11/20/19	131.63	145.66	
MW-10	11/20/19	135.36	160.71	
MW-11	11/20/19	130.04	172.3	
MW-12	11/20/19	139.65	174.57	
MW-14	11/20/19	133.42	178.42	
RW-1	11/20/19	133.63	163.79	
RW-2	11/19/19	135.08	172.60	
RW-2R	11/19/19	136.71	188.97	

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-3
Static Water Level: 132.5
Stop Time: 1347

Date: 11/19/19
Personnel: CF, CH
Total Depth: 195.90
Start Time: 1333

Depth (record in two feet intervals)	Conductivity (Denote ~~us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
133	0.709	20.67
135	0.693	20.53
137	0.681	20.4
139	0.679	20.40
141	0.678	20.38
143	0.678	20.38
145	0.679	20.38
147	0.679	20.38
149	0.679	20.39
151	0.678	20.37
153	0.678	20.39
155	0.678	20.40
157	0.679	20.40
159	0.678	20.41
161	0.677	20.41
163	0.677	20.42
165	0.678	20.43
167	0.679	20.43
169	0.679	20.44
171	0.680	20.45
173	0.679	20.46

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-3 Inspection Date 11/19/19 Inspector [illegible]

Measured Well Depth 175.9 Measuring Point 17 Depth to water 132.5

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 ← added name w/ paint pen
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: added name to well w/ paint pen

Well Conductivity Profile Field data Sheet

Site Name: Logos Tall
Well Identification: MW-6R
Static Water Level: 136.04
Stop Time: 1427

Date: 11/19/19
Personnel: CF, CM
Total Depth: 187.37
Start Time: 140

Depth (record in two feet intervals)	Conductivity (Denote ~~us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
137	0.760	20.69
139	0.758	20.63
141	0.757	20.62
143	0.758	20.61
145	"	"
147	"	"
149	"	"
151	0.759	"
153	0.758	"
155	0.759	20.62
157	0.761	20.62
159	0.760	20.62
161	0.762	20.63
163	0.761	"
165	0.760	"
167	0.759	"
169	0.754	20.64
171	0.754	20.64
173	0.765	20.65
175	0.764	20.66
177	0.861	20.67
179	0.861	20.67
181	0.864	20.67
183	0.864	20.67
185	0.865	20.67

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-6R Inspection Date 11/19/19 Inspector CE / CM

Measured Well Depth 187.37 Measuring Point TOC Depth to water 136.04

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: [illegible]

Well Identification: MW-5A

Static Water Level: 136.46

Stop Time: [illegible]

Date: 11/19/19

Personnel: CF, CM

Total Depth: 139.98

Start Time: 143[illegible]

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
137	[illegible]	20.[illegible]3
139	[illegible]	20.83

Well Inspection Checklist and Reporting Form

Site Name/ Location [illegible] Project Number _____

Well Identification MW-5A Inspection Date 11/19/19 Inspector CF CM

Measured Well Depth 139.98 Measuring Point TOC Depth to water 136.46

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: Did not deploy hydrasleeve due to lack of water volume.

Displacement of water due to presence of a small amount of silt

Well Conductivity Profile Field data Sheet

Site Name: Laguna Tal
Well Identification: MW-5
Static Water Level: 136.91
Stop Time: 1501

Date: 11/19/19
Personnel: CF, CM
Total Depth: 177.30
Start Time: 1440

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature ~~(Fahrenheit or~~ Celsius)
138	5.401	20.75
140	5.401	20.77
142	5.402	20.76
144	5.403	20.75
146	5.404	20.75
148	5.404	20.75
150	5.404	20.75
152	5.403	20.75
154	5.402	20.76
156	5.402	20.76
158	5.402	20.76
160	5.399	20.77
162	5.399	20.77
164	5.401	20.77
166	5.399	20.77
168	5.400	20.78
170	5.401	20.78
172	5.438	20.79
174	5.538	20.79
176	5.698	20.79

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-5 Inspection Date 11/19/19 Inspector CL, CM

Measured Well Depth 177.50 Measuring Point TOC Depth to water 136.91

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 Conductivity Profile Field data Sheet

Site Name: C[illegible]er Tal

Well Identification: MW-4A

Static Water Level: 1[illegible]4.95

Stop Time: 1522

Date: 11/1[illegible]

Personnel: CF C[illegible]

Total Depth: 147.60

Start Time: 1516

Depth (record in two feet intervals)	Conductivity (Denote Us/cm or MS/cm for each recording)	Temperature (Fahrenheit or Celsius)
1[illegible]	1.6	20.63
[illegible]	1.[illegible]	[illegible].63
140	1.626	20.63
[illegible]2	1.7[illegible]	20.62
144	1.[illegible]27	[illegible].63
146	1.95[illegible]	20.[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Eunice Ga Project Number

Well Identification MW-4A Inspection Date 11/19/19 Inspector T. M

Measured Well Depth 147.60 Measuring Point 145 Depth to water 13.95

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: Slight discoloration due to small amount of silt present in sample.

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-4
Static Water Level: 135.06
Stop Time: 54

Date: 11/19/19
Personnel: CF CM
Total Depth: 177.64
Start Time: 10

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or (MS/cm) for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
136	6.616	20.52
138	6.618	20.58
140	6.624	[illegible]
142	[illegible]2	20.62
144	[illegible]	20.61
146	[illegible]	20.62
148	[illegible]4	[illegible]
150	[illegible]3	20.63
152	10.04	20.63
154	0.[illegible]	[illegible]
156	1.57	20.64
158	[illegible].30	20.64
160	[illegible]	20.65
162	[illegible]	20.65
164	21.5[illegible]	20.65
166	30.[illegible]	20.66
168	41.7[illegible]	20.66
170	42.3[illegible]	20.66
172	[illegible]	[illegible]
174	36.2[illegible]	20.67
176	3[illegible].15	20[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper 3 #1 Project Number _____

Well Identification MW-4 Inspection Date 4.9.19 Inspector CG, CM

Measured Well Depth 177.64 Measuring Point TOC Depth to water 135.06

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

added on w/ paint pen

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: C[illegible]er Jal
Well Identification: [illegible]W-2R
Static Water Level: 136.71
Stop Time: 627

Date: 11 19[illegible]
Personnel: [illegible]
Total Depth: 188.97
Start Time: 161

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
137	1.578	20.72
139	1.589	20.73
141	1.735	20.7[illegible]
143	1.[illegible]21	20.74
145	15.81	20.74
147	1[illegible].6	20.75
149	1[illegible].03	"
151	1[illegible].9[illegible]	"
153	1[illegible].99	"
155	2.00	"
157	2.03	20.74
159	2.[illegible]	"
161	2.06	"
163	2.07	"
165	22.09	20.77
167	[illegible]	"
169	2.17	"
171	2.20	"
173	2.[illegible]2	"
175	22.63	20.78
177	"	"
179	"	"
181	"	"
183	22.45	20.[illegible]
185	22.44	20.[illegible]
187	[illegible].43	20.78
189	22.43	20.[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification RW-28 Inspection Date 11/19/19 Inspector EF, LB

Measured Well Depth 188.97 Measuring Point TOC Depth to water 134.71

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: [illegible]
Well Identification: RW-2
Static Water Level: 135.08
Stop Time: 1453

Date: 11/17/19
Personnel: CF, BH
Total Depth: 172.60
Start Time: 1426

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm or~~ MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
138	1.82	20.7
140	2.001	20.19
0	[illegible]	[illegible]
142	2.391	20.71
144	[illegible]	[illegible]
146	2.553	[illegible]
148	2.739	20.73
150	2.870	20.73
152	3.63	[illegible]
154	[illegible]	20.74
156	[illegible]	[illegible]
158	[illegible]	[illegible]
160	15.66	20.74
162	15.78	20.74
164	16.11	20.74

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

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

Measured Well Depth 172.60 Measuring Point TOC Depth to water 135.08

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? (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: Bailer chips on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible]

Well Identification: MW-1

Static Water Level: 13[illegible].45

Stop Time: 0821

Date: 11 20 [illegible]

Personnel: CF CM

Total Depth: 174.2

Start Time: 0806

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
135	1.277	2.45
137	.264	7.46
1[illegible]	.263	7.42
141	[illegible]	[illegible]
143	1.266	7.39
·45	[illegible]	[illegible]
147	1.275	"
49	[illegible]6	"
15[illegible]	[illegible]28[illegible]	7.47
153	[illegible]332	7.[illegible]6
15[illegible]	[illegible]55	7.4
157	[illegible]	[illegible]
15[illegible]	[illegible].246	7.33
[illegible]	[illegible]	7.3[illegible]
[illegible]3	4.335	7.3[illegible]
[illegible]5	4.349	7.35
[illegible]7	[illegible]0	7.34
[illegible]	[illegible]	[illegible]
71	4.8	20.39
173	4.[illegible]73	[illegible]8

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-1 Inspection Date 11/5/19 Inspector CF/AM

Measured Well Depth 42 Measuring Point TOC Depth to water 34.45

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: Slight discoloration due to presence of a small amount of silt

Well Conductivity Profile Field data Sheet

Site Name: [illegible]er [illegible]
Well Identification: MW-12
Static Water Level: [illegible].65
Stop Time: [illegible]45

Date: 11.20.19
Personnel: CF CM
Total Depth: 176.57
Start Time: [illegible]0833

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or ~~MS/cm~~ for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
141	1.201	20.49
143	1.201	20.57
145	1.200	20.66
147	1.213	20.73
149	1.248	20.73
151	1.299	20.75
153	1.383	"
155	1.442	"
157	1.511	"
159	1.534	"
161	1.620	"
163	1.651	"
165	1.663	"
167	1.664	"
169	1.662	"
171	1.671	20.75
173	1.409	20.72

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-12 Inspection Date 11/20/19 Inspector CF, CM

Measured Well Depth 144.57 Measuring Point TF Depth to water 139.65

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: [redacted]
Well Identification: MW-21
Static Water Level: 134.24
Stop Time: 0921

Date: 11/20/19
Personnel: CF CM
Total Depth: 142.23
Start Time: [redacted]17

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature ~~(Fahrenheit~~ or Celsius)
135	.817	20.73
137	.809	20.57
139	.813	20.63
141	.825	20.64

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-2A Inspection Date 11/20/19 Inspector CM

Measured Well Depth 42.23 Measuring Point TOC Depth to water 09.21

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: Empire Pad
Well Identification: MW-2
Static Water Level: 134.21
Stop Time: 0947

Date: 11/20/19
Personnel: CF, CM
Total Depth: 168.57
Start Time: 0928

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
135	0.415	20.53
137	0.41	20.63
139	0.420	20.66
141	0.431	20.69
143	0.435	20.70
145	0.437	20.71
147	0.491	20.72
149	0.501	20.73
151		
153		
155		
157		
159		
161		
163		
165		
167		

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-2 Inspection Date 11/20/19 Inspector RFCM

Measured Well Depth 168.57 Measuring Point TOC Depth to water 134.21

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: crack at top of casing

Well Conductivity Profile Field data Sheet

Site Name: [illegible] Tal
Well Identification: MW-10
Static Water Level: 136.36
Stop Time: 1004

Date: 11.20.19
Personnel: CF, LM
Total Depth: 166.71
Start Time: 0956

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
138	1.310	20.62
140	1.331	20.67
142	1.356	20.68
144	1.383	20.7
146	1.419	20.71
148	1.456	20.72
150	1.486	"
152	1.548	"
154	1.605	"
156	1.656	"
158	1.692	"
~~160~~	1.675	"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-10 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 60.71 Measuring Point TOC Depth to water 36.36

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: _____

Well Conductivity Profile Field data Sheet

Site Name: Lower Jal
Well Identification: MW-14
Static Water Level: 130.48
Stop Time: 1031

Date: 11/20/19
Personnel: CF, CM
Total Depth: 178.92
Start Time: 1017

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
132	0.665	20.56
134	0.664	20.60
136	0.664	20.61
138	"	20.62
140	"	20.63
142	"	"
144	0.665	20.64
146	0.664	"
148	"	20.65
150	"	"
152	"	"
154	0.663	"
156	"	20.66
158	0.662	20.66
160	0.662	20.66
162	0.663	20.67
164	"	"
166	"	"
168	"	"
170	"	"
~~172~~		
~~174~~		
~~176~~		"
~~178~~		"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-14 Inspection Date 11/26/19 Inspector CM

Measured Well Depth 130.92 Measuring Point TOC Depth to water 130.48

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: Jal
Well Identification: MW-7
Static Water Level: 135.5
Stop Time: 1101

Date: 11/20/19
Personnel: CS, JM
Total Depth: 162.58
Start Time: 1050

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or ~~MS/cm~~ for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
136	5.995	20.76
138	5.913	20.72
140	6.031	20.71
142	6.212	20.70
144	6.720	"
146	7.209	"
148	8.011	"
150	9.092	"
152	9.91	20.71
154	11.07	"
156	12.51	"
158	12.59	"
160	12.61	"
162	12.67	"

Well Inspection Checklist and Reporting Form

Site Name/ Location [illegible] Project Number _____

Well Identification MW-7 Inspection Date 11/20/19 Inspector CF, CM

Measured Well Depth 162.58 Measuring Point TOC Depth to water 135.5

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: [illegible] al
Well Identification: MW-8
Static Water Level: 133.84
Stop Time: 26

Date: 11/20/2019
Personnel: CR CM
Total Depth: 146.92
Start Time: 1117

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm or~~ MS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
134	0.516	20.99
136	.500	20.75
138	0.483	20.7
140	.48	20.66
142	"	20.64
144	"	"
146	.481	"

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number

Well Identification MW-8 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 146.92 Measuring Point ~~TOC~~ 136 Depth to water 133.84

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: minor chips present on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [redacted] Tank

Well Identification: MW-9

Static Water Level: 131.86

Stop Time: 206

Date: 11/20/20[redacted]

Personnel: CF, M

Total Depth: 162.0

Start Time: 1145

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm or~~ MS/cm for each recording)	Temperature (~~Fahrenheit or~~ Celsius)
132	1.[redacted]	20.82
134	[redacted]7	20.[redacted]
136	.[redacted]8	[redacted]
[redacted]8	1.[redacted]22	20.[redacted]
140	1.131	[redacted].75
142	[redacted].261	20.[redacted]
14[redacted]	[redacted].672	[redacted]75
146	.849	[redacted]76
148	2.[redacted]78	[redacted]6
150	[redacted].077	20.76
152	[redacted].20[redacted]	20.[redacted]
154	[redacted].20[redacted]	20.75
156	[redacted].280	20.75
15[redacted]	[redacted].[redacted]6	20.[redacted]
160	[redacted].245	20.76
16[redacted]	3.0[redacted]	[redacted].76

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-9 Inspection Date 11/20/2019 Inspector CF, CM

Measured Well Depth 162 Measuring Point 31.86 Depth to water 131.86

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: minor dirt present on top of casing.

Well Conductivity Profile Field data Sheet

Site Name: Cooper Jal
Well Identification: MW-9A
Static Water Level: 131.63
Stop Time: 1220

Date: 11/20/2019
Personnel: F CM
Total Depth: 145.66
Start Time: 1214

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
132	.966	20.86
134	[illegible]6	20.78
136	.221	20.77
[illegible]	1.772	20.76
140	2.253	20.77
142	2.271	20.77
146	2.278	20.77

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-9A Inspection Date 1/20/19 Inspector CF, CM

Measured Well Depth 145.66 Measuring Point 1.42 Depth to water 131.63

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: Water chips on top of casing

Well Conductivity Profile Field data Sheet

Site Name: [redacted] Tal
Well Identification: MW-11
Static Water Level: 10.04
Stop Time: 1[redacted]

Date: 11/20/19
Personnel: [redacted]
Total Depth: 172.3
Start Time: 1256

Depth (record in two feet intervals)	Conductivity (Denote ~~Us/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
130	0.642	20.85
132	0.640	20.79
[redacted]	[redacted]	20.76
136	[redacted]	20.75
[redacted]	0.639	20.75
140	[redacted]	"
142	[redacted]	"
144	[redacted]	"
146	[redacted]	"
148	[redacted]	"
150	0.642	"
152	0.646	"
154	[redacted]	"
156	[redacted]	"
158	[redacted]	"
160	[redacted]	"
162	[redacted]	"
164	[redacted]	"
166	[redacted]	"
168	[redacted]	"
170	"	"
172	"	20.76

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification MW-11 Inspection Date 11/2019 Inspector CF, CM

Measured Well Depth 172.3 Measuring Point TOC Depth to water 130.04

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: Marked well with paint pen

Well Conductivity Profile Field data Sheet

Site Name: [illegible]
Well Identification: BH-1
Static Water Level: 15.63
Stop Time: 1415

Date: 11/20/19
Personnel: [illegible]
Total Depth: [illegible]
Start Time: 1403

Depth (record in two feet intervals)	Conductivity (Denote ~~uS/cm~~ or MS/cm for each recording)	Temperature (~~Fahrenheit~~ or Celsius)
134	.450	20.68
136	[illegible]	[illegible]
138	[illegible]	[illegible]
140	[illegible]	20.62
142	.483	20.62
144	.615	20.62
146	2.08	20.62
148	[illegible]	20.62
150	[illegible]	20.62
152	5.183	[illegible]
[illegible]	11.0	20.63
156	26.53	[illegible]
158	27.00	[illegible]
[illegible] 160	23.95	20.64
162	19.11	[illegible]

Well Inspection Checklist and Reporting Form

Site Name/ Location Cooper Jal Project Number _____

Well Identification AW-1 Inspection Date 11/20/19 Inspector CM

Measured Well Depth 63.79 Measuring Point 68 Depth to water 133.63

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: added well Markings onto well stickup

APPENDIX C

Cumulative Summary of Groundwater Analytical Results

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-1	9/16/97	--	--	280.00	**8,500.00**	--	--	**1,100.00**	520.00	630.00	50.00	4,300.00	**15,000.00**
	2/25/98	--	--	280.00	**5,600.00**	--	--	570.00	285.00	520.00	116.00	2,900.00	**9,300.00**
	2/14/01	<1.00	306.00	306.00	**11,000.00**	**4.40**	7.70	**1,000.00**	374.00	780.00	236.00	5,236.00	**20,000.00**
	5/17/02	<1.00	208.00	208.00	237.00	**5.83**	3.28	86.90	45.70	20.10	11.90	184.00	784.00
	10/23/02	--	--	--	168.00	--	--	96.80	--	--	--	--	696.00
	5/21/03	<1.00	290.00	290.00	**6,600.00**	<8.00	**10.90**	**875.00**	238.00	475.00	96.50	3,410.00	**13,200.00**
	11/25/03	<1.00	250.00	250.00	**402.00**	**7.03**	2.72	125.00	19.20	22.00	18.50	294.00	**1,158.00**
	5/12/04	<1.00	264.00	264.00	**504.00**	**7.31**	2.70	136.00	17.20	23.10	22.40	355.00	**1,328.00**
	11/16/04	<1.00	232.00	232.00	**384.00**	**4.94**	3.30	103.00	29.20	22.70	25.40	373.00	952.00
	11/16/05	<10.00	262.00	262.00	**1,210.00**	**3.00**	2.40	215 D1	85.40	92.60	23.00	847.00	**2,640.00**
	11/14/06	<10.00	200.00	200.00	96.00	**4.20**	2.00	76.00	13.20	6.49	15.60	172.00	624.00
	11/16/07	<10.00	255.00	255.00	**4,250.00**	**3.70**	3.90 D1	602 D1	154.00	187.00	54.00	2,100 D1	**10,900.00**
	11/4/08	<5.00	190.00	190.00	110.00	**6.30**	1.60	83.00	10.00	5.80	7.90	180.00	590.00
	11/3/09	<10.00	270.00	270.00	**4,100.00**	**4.10**	2.80	**640.00**	190.00	250.00	61.00	2,300.00	**8,000.00**
	11/10/10	<10.00	223.00	223.00	**2,670.00**	**1.92**	2.62	373.00	138.00	196.00	21.50	1,480.00	**5,020.00**
	11/10/11	<5.00	209.00	209.00	**3,220.00**	1.02	2.37	275.00	169.00	176.00	22.50	1,340.00	**5,250.00**
Dup	11/10/11	<5.00	213.00	213.00	**2,930.00**	1.05	2.35	240.00	183.00	197.00	22.60	1,480.00	**4,640.00**
	10/11/12	<5.00	190.00	190.00	**2,190.00**	**6.74**	4.52	301.00	132.00	145.00	17.90	1,140.00	**1,880.00**
	10/8/13	<6.00	211.00	211.00	**1,890.00**	1.46	2.39	247.00	131.00	114.00	15.30	914.00	**2,380.00**
	10/7/14	<4.00	205.00	205.00	**1,700.00**	0.46	2.37	277.00	118.00	126.00	14.90	860.00	**3,690.00**
	10/21/15	--	--	--	182.00	<4.00	--	78.10	--	--	--	--	559.00
	10/18/16	--	--	--	**1,320.00**	0.83	--	221.00	--	--	--	--	**2,700.00**
	10/24/17	--	--	--	148.00	**2.57**	--	79.40	--	--	--	--	594.00
	10/18/18	--	--	--	**1,290.00**	0.79	--	215.00	--	--	--	--	**2,360.00**
	6/20/19	--	--	--	**1,110.00**	--	--	--	--	--	--	--	**2,510.00**
	11/24/19	--	--	--	**1,110.00**	--	--	222.00	--	--	--	--	**2,190.00**
MW-2	2/25/98	--	--	210.00	**5,900.00**	--	--	**760.00**	840.00	380.00	30.00	2,650.00	**9,400.00**
	4/9/98	--	--	290.00	**8,200.00**	--	--	**990.00**	1,100.00	490.00	29.00	3,430.00	**15,000.00**
	2/14/01	<1.00	184.00	184.00	**7,400.00**	**2.30**	4.10	**870.00**	1,025.00	488.00	48.50	3,189.00	**15,000.00**
	5/17/02	<1.00	160.00	160.00	**3,200.00**	**1.72**	3.18	483.00	587.00	239.00	35.60	1,160.00	**6,040.00**
	10/23/02	--	--	--	**2,920.00**	--	--	451.00	--	--	--	--	**6,770.00**
	5/22/03	<1.00	158.00	158.00	**2,550.00**	**2.04**	3.87	386.00	448.00	176.00	20.00	1,020.00	**5,880.00**
	11/25/03	<1.00	160.00	160.00	**3,330.00**	<4.00	5.63	446.00	555.00	227.00	32.00	1,120.00	**6,760.00**
	5/12/04	<1.00	146.00	146.00	**1,750.00**	<2.00	2.78	246.00	308.00	112.00	29.70	549.00	**3,965.00**
	11/16/04	<1.00	120.00	120.00	**430.00**	<1.00	2.13	56.90	104.00	29.40	22.40	158.00	832.00
	11/16/05	<10.00	171.00	171.00	**4,720.00**	0.72	2.60	**645 D1**	594.00	209.00	20.80	3,290.00	**10,000.00**
	11/14/06	<10.00	160.00	160.00	**3,500.00**	0.78 N	2.10	470.00	535.00	212.00	21.00	15,400.00	**8,260.00**
	11/14/07	<10.00	178.00	178.00	**3,280.00**	0.76	1.93	462 D1	449.00	152.00	16.20	1310 D1	**9,110.00**
	11/4/08	<5.00	150.00	150.00	**2,900.00**	<1.0	1.10	430.00	380.00	160.00	26.00	1,200.00	**5,600.00**
	11/16/09	<10.00	150.00	150.00	**2,000.00**	1.10	1.60	340.00	290.00	120.00	20.00	750.00	**4,300.00**
	11/12/10	<10.00	186.00	186.00	**1,890.00**	0.73	1.86	327.00	326.00	120.00	9.80	795.00	**3,680.00**
	11/10/11	<5.00	175.00	175.00	**1,480.00**	0.81	1.31	150.00	227.00	83.20	9.75	668.00	**2,860.00**
	10/11/12	<5.00	149.00	149.00	**524.00**	0.55	1.92	231.00	119.00	31.70	8.78	286.00	**1,090.00**
	10/8/13	<6.00	269.00	269.00	**1,180.00**	1.20	<0.10	169.00	178.00	64.70	8.16	505.00	**2,520.00**
	10/7/14	<4.00	196.00	196.00	**695.00**	0.52	<0.023	147.00	143.00	47.50	7.30	343.00	**1,310.00**
	10/21/15	--	--	--	27.10	<2.00	--	58.60	--	--	--	--	388.00
	10/18/16	--	--	--	26.70	<0.50	--	34.40	--	--	--	--	352.00
	10/25/17	--	--	--	35.80	1.00	--	36.30	--	--	--	--	331.00
	10/18/18	--	--	--	65.90	0.66	--	48.50	--	--	--	--	384.00
	6/20/19	--	--	--	**283.00**	--	--	--	--	--	--	--	960.00
	11/23/19	--	--	--	27.70	--	--	42.00	--	--	--	--	274.00
MW-2A	2/26/98	--	--	190.00	**280.00**	--	--	330.00	144.00	36.00	5.70	215.00	**1,200.00**
	2/14/01	<1.00	162.00	162.00	44.00	1.30	2.30	76.00	64.40	16.70	7.02	45.50	390.00
	5/15/02	<1.00	176.00	176.00	36.60	<1.00	2.34	79.10	57.60	13.90	4.35	43.80	435.00
	10/23/02	--	--	--	44.30	--	--	97.00	--	--	--	--	425.00
	5/22/03	<1.00	168.00	168.00	40.50	<1.00	2.18	75.50	67.20	14.30	3.76	47.90	418.00
	11/25/03	<1.00	166.00	166.00	43.10	1.00	2.23	77.40	51.70	14.40	3.98	43.80	452.00
	5/12/04	<1.00	176.00	176.00	44.80	<1.00	2.24	76.50	62.90	15.00	3.66	43.60	440.00
	11/16/04	<1.00	164.00	164.00	52.50	1.22	2.78	75.40	68.80	15.30	3.98	49.10	428.00
	11/16/05	<10.00	151.00	151.00	56.80	0.60	2.30	75.1 D1	157.00	18.00	4.20	49.80	630 N
	11/14/06	<10.00	180.00	180.00	49.00	0.55	1.60	76.00	69.80	15.60	3.47	49.90	488.00
	11/14/07	<10.00	170.00	170.00	74.60	0.58	1.51	66.8 D1	666.00	15.30	<5.00	45.40	504.00
	11/4/08	<5.00	220.00	220.00	68.00	0.49	1.40	74.00	67.00	15.00	3.20	42.00	470.00
	11/3/09	<10.00	230.00	230.00	62.00	0.59	1.60	81.00	66.00	15.00	3.40	50.00	480.00
	11/11/10	<10.00	158.00	158.00	86.10	0.45	1.73	74.00	53.90	14.90	2.86	42.80	474.00
	11/10/11	<5.00	175.00	175.00	129.00	0.28	1.25	101.00	92.50	23.30	4.17	64.70	614.00
	10/11/12	<5.00	173.00	173.00	76.50	0.46	1.60	79.40	69.20	15.70	3.62	45.30	500.00
	10/8/13	<6.00	248.00	248.00	78.60	0.41	0.62	75.40	92.60	18.70	4.06	51.20	496.00
	10/7/14	<4.00	188.00	188.00	72.50	0.20	1.55	79.40	77.10	17.20	3.00	44.30	496.00
	10/21/15	--	--	--	76.70	<4.00	--	77.50	--	--	--	--	441.00
	10/18/16	--	--	--	84.60	<0.50	--	83.40	--	--	--	--	455.00
	10/25/17	--	--	--	83.10	1.23	--	77.30	--	--	--	--	512.00
	10/18/18	--	--	--	103.00	0.67	--	88.30	--	--	--	--	491.00
	6/20/19	--	--	--	86.50	--	--	--	--	--	--	--	554.00
	11/23/19	--	--	--	88.00	--	--	76.50	--	--	--	--	414.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-3	2/27/98	--	--	190.00	**452.00**	--	--	406.00	200.00	50.00	11.00	237.00	**1,500.00**
	2/14/01	<1.00	158.00	158.00	34.00	**1.60**	2.40	100.00	54.50	19.00	7.61	48.60	440.00
	5/17/02	<1.00	158.00	158.00	30.60	1.56	2.35	102.00	55.60	18.40	5.04	50.00	433.00
	10/23/02	--	--	--	35.40	--	--	104.00	--	--	--	--	419.00
	5/22/03	<1.00	156.00	156.00	30.60	1.17	2.25	96.30	53.20	17.80	5.39	54.60	435.00
	11/25/03	<1.00	160.00	160.00	31.40	1.35	2.30	103.00	46.50	18.00	5.19	51.70	440.00
	5/12/04	<1.00	164.00	164.00	32.30	1.20	2.38	101.00	52.20	16.80	4.77	47.50	448.00
	11/16/04	<1.00	166.00	166.00	35.10	1.53	2.77	95.40	56.30	23.60	12.70	58.90	424.00
	11/17/05	<10.0	171.00	171.00	96.30	0.97	2.20	108 D1	89.20	22.10	8.87	93.40	840.00
	11/15/06	<10.00	170.00	170.00	30.00	0.92 N	1.70	96.00	51.30	17.30	4.30	57.20	505.00
	11/16/07	<10.00	170.00	170.00	39.70	0.93	1.58	88.2 D1	50.80	16.30	<5.00	50.60	570.00
	11/6/08	<5.00	150.00	150.00	36.00	1.10	1.40	97.00	50.00	17.00	4.00	48.00	430.00
	11/3/09	<10.00	160.00	160.00	35.00	1.10	1.60	110.00	49.00	17.00	4.20	56.00	410.00
	11/10/10	<10.00	164.00	164.00	35.40	0.84	1.77	99.90	48.80	15.20	3.42	45.10	380.00
	11/10/11	<5.00	165.00	165.00	36.40	0.83	1.35	87.90	57.90	18.00	3.79	53.00	404.00
	10/11/12	<5.00	162.00	162.00	36.60	1.01	1.74	100.00	51.20	16.90	4.11	51.00	438.00
	10/8/13	<6.00	194.00	194.00	38.40	1.02	1.17	98.70	56.50	18.30	4.08	54.90	450.00
	10/7/14	<4.00	187.00	187.00	19.50	0.37	1.39	62.80	44.30	9.82	22.40	38.80	332.00
	10/21/15	--	--	--	25.60	<2.00	--	74.80	--	--	--	--	307.00
	10/18/16	--	--	--	37.10	0.66	--	109.00	--	--	--	--	464.00
	10/24/17	--	--	--	35.90	1.50	--	98.70	--	--	--	--	442.00
	10/18/18	--	--	--	209.00	**5.35**	--	567.00	--	--	--	--	415.00
	6/20/19	--	--	--	40.00	--	--	--	--	--	--	--	448.00
	11/23/19	--	--	--	60.00	--	--	96.60	--	--	--	--	352.00
MW-4	2/27/98	--	--	230.00	**12,000.00**	--	--	**1,300.00**	1,700.00	880.00	48.00	5,300.00	**22,000.00**
	4/9/98	--	--	240.00	**13,000.00**	--	--	**1,500.00**	1,740.00	840.00	42.00	5,400.00	**23,000.00**
	2/14/01	<1.00	232.00	232.00	**15,000.00**	**1.80**	6.80	**1,500.00**	--	--	--	--	**29,000.00**
	5/17/02	<1.00	232.00	232.00	**11,300.00**	**2.01**	6.09	**1,380.00**	1,610.00	814.00	60.90	4,310.00	**22,600.00**
	10/23/02	--	--	--	**11,300.00**	--	--	**1,320.00**	--	--	--	--	**23,200.00**
	5/22/03	<1.00	220.00	220.00	**11,300.00**	<10.00	**12.30**	**1,370.00**	1,450.00	659.00	47.30	4,140.00	**62,500.00**
	11/26/03	<1.00	218.00	218.00	**12,100.00**	<8.00	**12.30**	**1,400.00**	1,830.00	889.00	62.00	4,620.00	**54,450.00**
	5/11/04	<1.00	214.00	214.00	**14,200.00**	<8.00	8.97	**1,560.00**	1,800.00	829.00	60.70	4,850.00	**65,450.00**
	11/17/04	<1.00	222.00	222.00	**13,600.00**	<20.00	**31.50**	**1,410.00**	2,020.00	972.00	73.60	5,900.00	**25,200.00**
	11/17/05	<10.00	181.00	181.00	**9,440.00**	0.82	0.20	45.8 D1	849.00	387.00	28.10	3,880.00	**24,300.00**
	11/15/06	<10.00	260.00	260.00	**14,000.00**	<5.00 C	5.20	**1,400.00**	1,760.00	897.00	58.80	6,150.00	**28,700.00**
	11/14/07	<10.00	255.00	255.00	**14,800.00**	0.54	7.15 D1	**1,410 D1**	1,170.00	382.00	48.00	4,760 D1	**36,300.00**
	11/12/08	<5.00	200.00	200.00	**12,000.00**	1.20	0.33	**1,300.00**	1,500.00	840.00	82.00	4,800.00	**22,000.00**
	11/4/09	<5.00	250.00	250.00	**15,000.00**	1.10	5.30	**1,600.00**	1,500.00	1,000.00	65.00	5,800.00	**30,000.00**
	11/11/10	<5.00	294.00	294.00	**15,500.00**	<1.00	**10.20**	**1,270.00**	1,380.00	904.00	40.40	5,450.00	**25,500.00**
	11/10/11	<5.00	277.00	277.00	**16,900.00**	0.11	6.16	**1,060.00**	1,680.00	1,110.00	40.00	6,490.00	**28,900.00**
	10/11/12	<5.00	256.00	256.00	**5,850.00**	**2.10**	4.58	**629.00**	434.00	334.00	21.20	2,620.00	**12,000.00**
	10/8/13	<6.00	294.00	294.00	**16,200.00**	0.72	6.79	**1,460.00**	1,690.00	1,180.00	40.80	7,370.00	**36,300.00**
	10/7/14	<4.00	291.00	291.00	**15,000.00**	<100.00	7.15	**1,740.00**	1,350.00	1,060.00	44.10	4,250.00	**32,400.00**
	10/20/15	--	--	--	**3,200.00**	<40.00	--	402.00	--	--	--	--	**7,070.00**
	10/18/16	--	--	--	**17,900.00**	<1.00	--	**1,890.00**	--	--	--	--	**35,300.00**
	10/25/17	--	--	--	**6,830.00**	<5.00	--	**754.00**	--	--	--	--	**12,300.00**
	10/18/18	--	--	--	**14,800.00**	<0.10	--	**1,510.00**	--	--	--	--	**24,700.00**
	6/20/19	--	--	--	**2,760.00**	--	--	--	--	--	--	--	**7,830.00**
	11/24/19	--	--	--	**3,050.00**	--	--	420.00	--	--	--	--	**5,960.00**
MW-4A	2/27/98	--	--	180.00	**1,600.00**	--	--	410.00	470.00	130.00	11.00	620.00	**3,300.00**
	2/14/01	<1.00	154.00	154.00	**1,600.00**	1.40	2.80	210.00	--	--	--	--	**4,000.00**
	5/15/02	<1.00	156.00	156.00	**577.00**	<1.00	2.23	121.00	200.00	49.50	10.30	125.00	**1,610.00**
	10/23/02	--	--	--	**478.00**	--	--	114.00	--	--	--	--	**1,430.00**
	5/22/03	<1.00	154.00	154.00	**844.00**	<1.00	2.43	160.00	279.00	58.90	10.10	248.00	**2,200.00**
	11/26/03	<1.00	158.00	158.00	**1,060.00**	<4.00	5.82	182.00	337.00	79.30	15.20	329.00	**2,585.00**
	5/11/04	<1.00	156.00	156.00	**984.00**	<2.00	3.30	179.00	297.00	66.50	11.50	279.00	**2,300.00**
	11/17/04	<1.00	164.00	164.00	**1,110.00**	<2.00	4.62	186.00	369.00	75.40	14.90	413.00	**2,235.00**
	11/16/05	<10.0	181.00	181.00	**827 D1**	<0.50	2.20	160 D1	335.00	64.40	9.23	382.00	**2,340 N**
	11/15/06	<10.00	620.00	620.00	**960.00**	<0.50	2.60	170.00	227.00	53.50	8.10	406.00	**2,870.00**
	11/14/07	<10.00	311.00	311.00	**845 D1**	0.35	3.60 D1	167 D1	205.00	44.90	7.33	334.00	**2,650.00**
	11/12/08	<5.00	640.00	640.00	**650.00**	0.32	2.20	170.00	160.00	37.00	9.90	290.00	**1,700.00**
	11/4/09	<5.00	670.00	670.00	**670.00**	0.56	2.60	150.00	110.00	27.00	7.40	300.00	**1,600.00**
	11/11/10	<5.00	217.00	217.00	**663.00**	0.51	2.58	125.00	65.90	15.60	4.42	317.00	**1,760.00**
	11/10/11	<5.00	171.00	171.00	**621.00**	0.78	2.02	134.00	78.80	18.70	4.71	389.00	**1,400.00**
	10/11/12	<5.00	169.00	169.00	**516.00**	1.12	2.60	100.00	48.70	11.30	4.45	359.00	**1,200.00**
	10/8/13	<6.00	199.00	199.00	**512.00**	**2.63**	2.47	100.00	47.70	9.93	3.64	410.00	**1,170.00**
	10/7/14	<4.00	186.00	186.00	**387.00**	**1.69**	2.54	102.00	37.10	7.78	3.17	276.00	962.00
	10/20/15	--	--	--	**328.00**	<4.00	--	83.30	--	--	--	--	819.00
	10/18/16	--	--	--	**440.00**	1.49	--	97.60	--	--	--	--	**1,150.00**
	10/25/17	--	--	--	**341.00**	**2.83**	--	93.40	--	--	--	--	960.00
	10/18/18	--	--	--	**366.00**	1.29	--	99.60	--	--	--	--	901.00
	6/20/19	--	--	--	**336.00**	--	--	--	--	--	--	--	**1,040.00**
	11/24/19	--	--	--	**321.00**	--	--	94.50	--	--	--	--	824.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-5	2/26/98	--	--	180.00	**6,600.00**	--	--	**910.00**	1,400.00	470.00	31.00	2,400.00	**12,000.00**
	2/14/01	<1.00	166.00	166.00	**7,700.00**	**1.80**	4.10	**910.00**	--	--	--	--	**18,000.00**
	5/17/02	<1.00	156.00	156.00	**4,040.00**	1.53	4.56	586.00	757.00	319.00	60.90	1,260.00	**8,340.00**
	10/23/02	--	--	--	**3,900.00**	--	--	94.80	--	--	--	--	422.00
	5/22/03	<1.00	158.00	158.00	**3,170.00**	<4.00	6.52	550.00	644.00	215.00	49.90	1,240.00	**7,860.00**
	11/25/03	<1.00	168.00	168.00	**5,120.00**	<4.00	6.77	**739.00**	978.00	365.00	54.90	1,680.00	**11,940.00**
	5/11/04	<1.00	160.00	160.00	**6,760.00**	<3.00	4.65	**1,030.00**	1,180.00	417.00	40.30	2,120.00	**20,380.00**
	11/17/04	<1.00	172.00	172.00	**6,750.00**	<10.00	**16.60**	**786.00**	1,210.00	486.00	40.60	2,300.00	**11,980.00**
	11/17/05	<10.00	161.00	161.00	**2,140 D1**	0.79	0.16	334 D1	339.00	126.00	10.80	791.00	**7,120 N**
	11/14/06	<10.00	160.00	160.00	**2,000.00**	0.60	1.50	300.00	437.00	173.00	14.20	918.00	**4,420.00**
	11/14/07	<10.00	161.00	161.00	**5,790 D1**	0.37	4.01 D1	**668 D1**	812.00	240.00	23.30	1,850 D1	**16,300.00**
	11/6/08	<5.00	160.00	160.00	**4,900.00**	0.78	0.32	540.00	660.00	310.00	35.00	1,600.00	**9,700.00**
	11/3/09	<10.00	160.00	160.00	**5,100.00**	0.51	2.30	**710.00**	860.00	320.00	<13.00	1,800.00	**11,000.00**
	11/11/10	<5.00	176.00	176.00	**4,200.00**	0.16	2.37	554.00	687.00	250.00	17.30	1,400.00	**8,890.00**
	11/10/11	<5.00	172.00	172.00	**4,340.00**	0.24	0.55	411.00	944.00	326.00	19.70	1,780.00	**7,840.00**
	10/11/12	<5.00	164.00	164.00	**3,630.00**	0.38	2.26	474.00	671.00	239.00	17.00	1,360.00	**8,300.00**
	10/8/13	<6.00	176.00	176.00	**3,730.00**	0.37	1.56	425.00	659.00	253.00	15.40	1,440.00	**8,060.00**
	10/7/14	<4.00	172.00	172.00	**2,830.00**	<0.10	2.19	398.00	521.00	195.00	15.10	979.00	**5,280.00**
	10/21/15	--	--	--	**2,480.00**	<40.00	--	362.00	--	--	--	--	**5,510.00**
	10/18/16	--	--	--	**2,260.00**	<0.50	--	326.00	--	--	--	--	**5,380.00**
	10/25/17	--	--	--	**2,090.00**	<5.00	--	318.00	--	--	--	--	**3,780.00**
Dup	10/25/17	--	--	--	**2,010.00**	<5.00	--	300.00	--	--	--	--	**3,240.00**
	10/18/18	--	--	--	**1,890.00**	<0.10	--	323.00	--	--	--	--	**3,420.00**
	6/20/19	--	--	--	**1,700.00**	--	--	--	--	--	--	--	**4,280.00**
	11/23/19	--	--	--	**1,530.00**	--	--	250.00	--	--	--	--	**3,900.00**
MW-5A	2/26/98	--	--	170.00	190.00	--	--	180.00	107.00	23.00	3.50	117.00	740.00
	2/15/01	<1.00	164.00	164.00	140.00	1.20	2.10	130.00	90.20	27.90	8.70	74.60	670.00
	5/15/02	<1.00	182.00	182.00	53.50	<1.00	2.23	84.40	63.20	16.10	4.69	43.60	475.00
	10/23/02	--	--	--	50.00	--	--	**616.00**	--	--	--	--	**8,670.00**
	5/22/03	<1.00	158.00	158.00	32.50	<1.00	2.10	69.90	55.50	13.80	3.41	41.50	416.00
	11/25/03	<1.00	332.00	332.00	34.10	1.05	2.20	75.50	60.90	14.60	4.08	45.00	422.00
	5/11/04	<1.00	164.00	164.00	38.80	<1.00	2.25	75.80	60.90	15.00	3.40	43.20	484.00
	11/17/04	<1.00	152.00	152.00	39.60	1.37	2.66	74.30	58.10	13.60	3.83	48.50	430.00
	11/16/05	<10.00	191.00	191.00	40.20	0.82	2.10	75.2 D1	176.00	17.80	4.22	45.30	570 N
	11/14/06	<10.00	240.00	240.00	47.00	0.64	1.50	79.00	90.40	16.10	3.58	51.40	588.00
	11/14/07	<10.00	227.00	227.00	54.40	0.66	1.45	68.7 D1	73.70	14.00	<5.00	44.20	528.00
	11/6/08	<5.00	350.00	350.00	53.00	0.70	1.30	72.00	76.00	15.00	3.40	43.00	450.00
	11/3/09	<10.00	710.00	710.00	47.00	0.72	1.50	79.00	65.00	14.00	3.30	50.00	440.00
	11/11/10	<5.00	182.00	182.00	49.60	0.57	1.61	73.60	55.70	12.90	2.79	42.00	606.00
	11/10/11	<5.00	170.00	170.00	131.00	0.49	1.15	116.00	83.80	29.90	5.16	85.70	594.00
	10/11/12	<5.00	163.00	163.00	68.00	0.63	1.57	69.80	60.60	15.30	3.96	49.20	534.00
	10/8/13	<6.00	182.00	182.00	80.20	0.57	1.60	67.50	69.30	16.20	3.29	53.40	462.00
	10/7/14	<4.00	168.00	168.00	73.60	0.29	1.56	64.90	66.20	15.70	2.76	45.20	432.00
	10/21/15	--	--	--	84.90	<4.00	--	65.60	--	--	--	--	499.00
	10/18/16	--	--	--	101.00	<0.50	--	65.40	--	--	--	--	466.00
	10/25/17	--	--	--	99.60	1.14	--	59.30	--	--	--	--	537.00
	10/18/18	--	--	--	132.00	0.79	--	67.50	--	--	--	--	477.00
	6/20/19	--	--	--	118.00	--	--	--	--	--	--	--	650.00
	11/23/19	--	--	--	116.00	--	--	61.10	--	--	--	--	502.00
MW-6	2/26/98	--	--	200.00	**260.00**	--	--	400.00	180.00	44.00	6.20	205.00	**1,200.00**
	2/14/01	<1.00	158.00	158.00	59.00	**1.70**	2.20	99.00	67.50	22.10	7.67	52.30	470.00
	5/17/02	<1.00	162.00	162.00	37.80	**1.62**	2.14	99.30	63.10	19.60	5.12	48.60	427.00
	10/23/02	--	--	--	46.10	--	--	109.00	--	--	--	--	331.00
	5/22/03	<1.00	162.00	162.00	40.30	1.24	2.13	94.40	61.70	17.40	4.23	51.90	464.00
	11/25/03	<1.00	154.00	154.00	53.60	1.40	2.18	98.00	53.60	18.70	4.97	51.70	482.00
	5/11/04	<1.00	156.00	156.00	54.40	1.23	2.19	97.00	59.00	18.10	4.22	47.80	506.00
	11/16/04	<1.00	162.00	162.00	57.90	**1.64**	2.68	99.80	66.60	19.60	5.16	57.00	464.00
	11/17/05	<10.00	201.00	201.00	101.00	0.97	0.35	97.8 D1	103.00	20.20	4.10	59.10	730.00
	11/15/06	<10.00	750.00	750.00	68.00	0.99	1.50	93.00	64.60	20.40	4.23	57.10	507.00
	11/15/07	<10.00	284.00	284.00	162.00	**51.00**	1.35	96.3 D1	84.10	25.20	<5.00	62.10	630.00
	11/6/08	<5.00	220.00	220.00	84.00	1.20	1.20	95.00	67.00	21.00	4.30	53.00	490.00
	11/3/09	<10.00	190.00	190.00	81.00	1.20	1.40	100.00	66.00	20.00	4.50	59.00	550.00
	11/8/10	NS - Well Damaged											
	11/10/11	NS - Well Damaged											
	10/11/12	NS - Well Damaged											
	9/30/13	Well Plugged and Abandoned											
MW-6R	10/8/13	<6.00	225.00	225.00	110.00	**1.91**	<0.10	102.00	69.90	24.40	5.17	85.60	600.00
	10/7/14	<4.00	182.00	182.00	39.70	0.55	0.68	93.00	59.20	18.20	3.10	48.20	402.00
	10/21/15	--	--	--	40.70	<2.00	--	98.60	--	--	--	--	390.00
	10/18/16	--	--	--	42.30	0.63	--	105 J	--	--	--	--	442.00
	10/25/17	--	--	--	49.30	1.46	--	93.80	--	--	--	--	465.00
	10/18/18	--	--	--	69.10	1.05	--	107.00	--	--	--	--	442.00
	6/20/19	--	--	--	59.10	--	--	--	--	--	--	--	482.00
Dup	6/20/19	--	--	--	64.40	--	--	--	--	--	--	--	592.00
	11/23/19	--	--	--	69.40	--	--	95.20	--	--	--	--	384.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-7	5/14/98	--	--	230.00	**430.00**	--	--	340.00	214.00	66.00	13.00	165.00	**1,200.00**
	2/14/01	<1.00	150.00	150.00	**510.00**	**1.70**	2.40	150.00	--	--	--	--	**1,500.00**
	5/16/02	<1.00	150.00	150.00	75.70	1.59	2.27	97.40	68.60	23.20	6.63	54.30	501.00
	10/22/02	--	--	--	88.60	--	--	109.00	--	--	--	--	490.00
	5/22/03	<1.00	140.00	140.00	173.00	1.17	2.14	88.90	85.50	28.20	6.18	64.60	631.00
	11/26/03	<1.00	136.00	136.00	189.00	1.29	2.23	93.50	95.70	31.00	7.91	63.60	704.00
	5/13/04	<1.00	130.00	130.00	**267.00**	1.11	2.18	94.70	107.00	34.70	6.59	62.90	914.00
	11/16/04	<1.00	130.00	130.00	**367.00**	1.49	2.72	97.30	142.00	49.30	8.61	87.90	870.00
	11/17/05	<10.0	121.00	121.00	**456 D1**	0.53	0.28	106 D1	412.00	64.70	12.10	100.00	**1,440.00**
	11/15/06	<10.00	240.00	240.00	**550.00**	0.63	1.50	110.00	202.00	70.30	7.40	102.00	**2,100.00**
	11/15/07	<10.00	189.00	189.00	**458 D1**	1.20	1.39	176 D1	144.00	59.50	9.95	148.00	**1,880.00**
	11/12/08	<5.00	110.00	110.00	**650.00**	0.84	1.20	140.00	210.00	76.00	12.00	120.00	**1,600.00**
	11/4/09	<5.00	110.00	110.00	**1,100.00**	0.63	1.50	160.00	310.00	120.00	11.00	130.00	**2,800.00**
	11/10/10	<5.00	111.00	111.00	**1,310.00**	0.37	1.64	173.00	415.00	149.00	10.00	150.00	**3,130.00**
	11/10/11	<5.00	106.00	109.00	**1,710.00**	0.30	1.45	147.00	662.00	203.00	12.30	198.00	**3,660.00**
	10/11/12	<5.00	108.00	108.00	**2,020.00**	0.44	1.71	261.00	619.00	215.00	12.30	208.00	**5,580.00**
	10/8/13	<6.00	142.00	142.00	**2,840.00**	0.45	2.11	331.00	916.00	258.00	13.30	265.00	**7,530.00**
	10/7/14	<4.00	116.00	116.00	**2,190.00**	<0.10	2.03	317.00	682.00	238.00	12.20	227.00	**7,920.00**
	10/20/15	--	--	--	**1,420.00**	<20.00	--	231.00	--	--	--	--	**3,130.00**
	10/18/16	--	--	--	**2,920.00**	<0.50	--	385.00	--	--	--	--	**7,160.00**
	10/24/17	--	--	--	**1,670.00**	<2.00	--	249.00	--	--	--	--	**2,660.00**
	10/18/18	--	--	--	**4,000.00**	<0.10	--	482.00	--	--	--	--	**6,450.00**
	6/20/19	--	--	--	**4,210.00**	--	--	--	--	--	--	--	**15,500.00**
	11/24/19	--	--	--	**2,080.00**	--	--	272.00	--	--	--	--	**6,300.00**
MW-8	5/13/98	--	--	200.00	**270.00**	--	--	390.00	190.00	60.00	12.00	170.00	**1,200.00**
	2/14/01	<1.00	156.00	156.00	49.00	**1.80**	2.50	100.00	59.90	21.50	7.84	52.90	400.00
	5/16/02	<1.00	158.00	158.00	32.90	1.57	2.33	101.00	56.60	19.20	5.20	49.50	432.00
	10/22/02	--	--	--	40.80	--	--	104.00	--	--	--	--	392.00
	5/22/03	8.00	160.00	168.00	33.20	1.40	2.32	98.30	53.90	18.30	9.31	46.40	410.00
	11/26/03	<1.00	142.00	142.00	31.70	1.59	2.38	95.60	55.30	18.20	5.31	50.20	443.00
	5/12/04	<1.00	154.00	154.00	36.30	1.39	2.38	101.00	53.00	17.30	4.56	48.10	435.00
	11/16/04	<1.00	170.00	170.00	39.80	**1.94**	2.94	103.00	57.80	18.60	5.63	56.40	435.00
	5/17/05	4.00	152.00	156.00	41.00	**1.64**	2.94	105.00	61.00	18.60	5.78	47.30	434.00
	11/17/05	<10.00	171.00	171.00	113.00	1.10	<0.05	115 D1	83.40	21.70	5.74	102.00	750.00
	5/9/06	<10.00	160.00	160.00	210.00	0.89	1.40	200.00	72.70	33.30	7.12	125.00	896.00
	11/14/06	<10.00	150.00	150.00	230.00	1.10	1.20	200.00	74.20	38.30	9.61	162.00	912.00
	5/30/07	<10.00	141.00	141.00	62.00	1.20	1.74	120.00	54.10	19.10	<5.00	59.30	500.00
	11/15/07	<10.00	159.00	159.00	43.10	1.33	1.56	94.2 D1	52.10	17.20	<5.000	49.80	540.00
	5/15/08	<1.53	151.00	151.00	40.70	1.40	1.78	99.6 D1	51.70	16.80	4.10	54.8 D1	427.00
	11/12/08	<5.00	140.00	140.00	39.00	1.40	1.50	97.00	52.00	17.00	<2.6	46.00	350.00
	5/20/09	<5.00	140.00	140.00	39.00	1.30	1.60	110.00	50.00	17.00	4.30	49.00	430.00
	11/4/09	<5.00	150.00	150.00	41.00	1.40	1.70	110.00	46.00	16.00	3.30	47.00	450.00
	5/7/10	<5.00	<5.00	172.00	34.90	1.09	1.70	97.80	49.50	15.70	3.52	45.50	426.00
Dup	5/7/10	<5.00	<5.00	157.00	34.90	1.09	1.71	98.00	51.00	14.50	3.21	43.60	466.00
	11/12/10	<5.00	172.00	172.00	38.70	1.10	1.77	98.20	48.90	15.70	3.40	45.40	410.00
Dup	11/12/10	<5.00	160.00	160.00	38.70	1.10	1.76	98.30	50.50	15.30	3.44	44.80	398.00
	5/11/11	<5.00	170.00	170.00	185.00	1.20	1.60	93.00	73.00	28.40	5.68	165.00	692.00
	11/10/11	<5.00	161.00	161.00	36.90	1.06	1.41	87.40	57.10	17.00	3.46	48.60	406.00
	5/17/12	<5.00	173.00	173.00	37.90	1.09	1.59	92.90	53.30	16.40	3.83	56.70	440.00
	10/11/12	<5.00	158.00	158.00	39.90	1.29	1.83	103.00	49.00	16.60	4.30	49.00	444.00
	5/17/13	<5.00	167.00	167.00	38.30	1.37	1.70	106.00	55.30	17.50	3.67	45.90	416.00
	10/8/13	<6.00	182.00	182.00	39.50	1.17	1.78	96.20	57.40	19.70	4.35	57.60	446.00
	5/1/14	<10.00	165.00	165.00	40.60	1.12 J	1.81	106.00	55.10	19.90	3.82	52.90	436.00
	10/7/14	<4.00	176.00	176.00	8.14	0.16	1.07	30.50	40.00	4.98	7.81	35.10	259.00
	5/22/15	--	--	--	10.00	<2.00	--	30.10	--	--	--	--	252.00
	10/20/15	--	--	--	8.03	<2.00	--	32.50	--	--	--	--	146.00
	5/25/16	--	--	--	30.00	0.85	--	88.70	--	--	--	--	434.00
	10/18/16	--	--	--	4.28	<0.50	--	32.80	--	--	--	--	261.00
	05/11/17	--	--	--	9.10	<0.02	--	32.20	--	--	--	--	214.00
Dup	05/11/17	--	--	--	8.62	<0.02	--	32.20	--	--	--	--	182.00
	10/24/17	--	--	--	3.69	0.23	--	18.30	--	--	--	--	286.00
	05/22/18	--	--	--	5.22	0.32	--	21.90	--	--	--	--	282.00
	10/18/18	--	--	--	5.41	0.61	--	19.10	--	--	--	--	258.00
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	12.90	--	--	27.60	--	--	--	--	239.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-9	5/14/98	--	--	190.00	**350.00**	--	--	470.00	207.00	61.00	12.00	200.00	**1,300.00**
	2/15/01	<1.00	156.00	156.00	35.00	**2.60**	2.40	110.00	60.40	19.80	7.47	47.00	430.00
	5/16/02	<1.00	160.00	160.00	31.70	**2.22**	2.28	99.40	60.80	17.60	5.32	50.10	440.00
	10/23/02	--	--	--	39.00	--	--	102.00	--	--	--	--	436.00
	5/22/03	<1.00	160.00	160.00	31.00	**1.75**	2.19	93.30	52.20	15.80	4.75	50.20	455.00
	11/26/03	<1.00	150.00	150.00	31.80	**1.99**	2.34	99.80	57.70	16.60	4.69	46.30	452.00
	5/12/04	<1.00	164.00	164.00	33.60	**1.79**	2.29	99.20	54.80	16.00	4.27	43.50	467.00
	11/16/04	8.00	154.00	162.00	**367.00**	1.49	2.72	97.30	63.20	17.80	5.59	55.50	433.00
	5/17/05	4.00	154.00	154.00	44.20	**2.43**	3.05	117.00	58.80	16.70	5.94	44.10	434.00
	11/17/05	<10.00	161.00	161.00	83.50	1.30	0.14	111 D1	149.00	26.20	7.43	80.40	790 N
	5/9/06	<10.00	170.00	170.00	37.00	**1.80**	1.80	99.00	52.70	15.00	3.21	45.50	428.00
	11/15/06	<10.00	150.00	150.00	210.00	1.10	1.20	190.00	70.50	35.80	8.64	152.00	905.00
	5/30/07	<10.00	153.00	153.00	35.00	**2.10**	1.69	110.00	52.20	15.80	<5.00	44.70	464.00
	11/14/07	<10.00	151.00	151.00	186.00	1.49	1.48	156 D1	74.10	39.40	8.73	141.00	808.00
	5/15/08	<1.53	174.00	174.00	42.50	**2.38**	1.72	105 D1	55.60	17.00	3.99	54.1 D1	467.00
	11/4/08	<5.00	160.00	160.00	39.00	**2.10**	1.40	98.00	54.00	16.00	3.70	47.00	440.00
	5/20/09	<5.00	320.00	320.00	69.00	**2.10**	1.50	120.00	58.00	19.00	4.60	58.00	520.00
	11/4/09	<5.00	160.00	160.00	42.00	**2.20**	1.60	110.00	50.00	15.00	3.00	43.00	460.00
	5/7/10	<5.00	<5.00	162.00	50.20	**2.02**	1.66	97.50	53.60	15.70	3.32	43.50	442.00
	11/9/10	<5.00	186.00	186.00	60.70	**1.97**	1.74	98.00	59.20	18.10	3.64	50.00	446.00
	5/11/11	<5.00	160.00	160.00	80.30	**1.71**	1.72	75.70	73.90	25.80	4.61	67.90	518.00
	11/10/11	<5.00	151.00	151.00	138.00	**1.66**	1.38	107.00	82.70	26.90	4.34	65.40	582.00
	5/16/12	<5.00	162.00	162.00	137.00	**1.75**	1.61	93.50	83.80	23.20	4.39	60.30	584.00
	10/11/12	<5.00	147.00	147.00	148.00	**1.90**	1.71	98.70	80.50	25.80	4.94	59.80	644.00
	5/17/13	<5.00	144.00	144.00	246.00	**1.86**	1.61	99.30	107.00	30.20	4.43	60.20	**1,010.00**
	10/8/13	<6.00	164.00	164.00	150.00	**1.88**	1.81	99.80	90.00	25.20	4.62	60.80	620.00
	5/2/14	<10.00	143.00	143.00	**382.00**	1.56	1.77	103.00	132.00	35.70	5.74	73.70	906.00
	10/7/14	<4.00	151.00	151.00	**292.00**	0.89	1.33	98.10	136.00	41.00	4.65	67.40	**1,110.00**
	5/22/15	--	--	--	**307.00**	<8.00	--	87.70	--	--	--	--	**1,170.00**
	10/20/15	--	--	--	202.00	<4.00	--	93.70	--	--	--	--	593.00
	5/25/16	--	--	--	**404.00**	**1.61**	--	108.00	--	--	--	--	**1,430.00**
Dup	5/26/16	--	--	--	**418.00**	1.60	--	111.00	--	--	--	--	**1,430.00**
	10/18/16	--	--	--	**445.00**	1.34	--	115.00	--	--	--	--	**1,490.00**
	05/11/17	--	--	--	**481.00**	<0.22	--	118.00	--	--	--	--	**1,090.00**
	10/24/17	--	--	--	**387.00**	**2.42**	--	102.00	--	--	--	--	**1,020.00**
	05/22/18	--	--	--	**460.00**	1.28	--	119.00	--	--	--	--	**1,010.00**
	10/18/18	--	--	--	**381.00**	1.41	--	117.00	--	--	--	--	903.00
	6/20/19	--	--	--	**621.00**	--	--	--	--	--	--	--	**2,930.00**
	11/24/19	--	--	--	**337.00**	--	--	80.60	--	--	--	--	**1,170.00**
MW-9A	5/14/98	--	--	280.00	**600.00**	--	--	**770.00**	338.00	96.00	12.00	334.00	**2,200.00**
	2/15/01	<1.00	142.00	142.00	85.00	1.40	2.20	71.00	71.60	19.20	6.94	46.00	400.00
	5/15/02	<1.00	136.00	136.00	148.00	<1.00	2.18	65.30	62.90	16.10	4.62	46.80	445.00
	10/23/02	--	--	--	168.00	--	--	75.50	--	--	--	--	651.00
	5/22/03	<1.00	126.00	126.00	207.00	<1.00	2.09	62.10	102.00	25.20	4.80	55.70	672.00
	11/26/03	<1.00	118.00	118.00	216.00	1.14	2.26	62.70	107.00	25.10	5.31	53.20	648.00
	5/12/04	<1.00	122.00	122.00	242.00	<1.00	2.10	64.70	105.00	26.20	5.11	26.20	950.00
	11/16/04	<1.00	114.00	114.00	**296.00**	1.24	2.74	67.50	130.00	33.10	6.24	70.30	826.00
	5/17/05	<1.00	112.00	112.00	**354.00**	1.04	2.85	77.10	131.00	31.70	6.39	60.50	828.00
	11/17/05	<10.00	121.00	121.00	**310 D1**	0.82	0.31	74.7 D1	337.00	41.40	8.08	74.50	**1,520 N**
	5/9/06	<10.00	670.00	670.00	**270.00**	0.67	1.60	78.00	111.00	27.10	3.88	58.70	992.00
	11/15/06	<10.00	1,600.00	1,600.00	**290.00**	0.62	1.60	72.00	126.00	33.40	4.74	68.40	**1,280.00**
	5/30/07	<10.00	586.00	586.00	**400.00**	0.70	1.69	83.00	153.00	36.90	<5.00	71.80	**1,450.00**
	11/14/07	<10.00	605.00	605.00	**285 D1**	0.62	1.52	64.7 D1	153.00	35.40	5.03	70.70	**1,430.00**
	5/15/08	<1.53	738.00	738.00	**380 D1**	0.45	1.62	86.8 D1	146.00	35.50	5.45	77.2 D1	**1,390.00**
	11/4/08	<5.00	370.00	370.00	**330.00**	<1.00	1.20	84.00	130.00	32.00	5.10	66.00	1,000.00
	5/20/09	<5.00	600.00	600.00	**480.00**	0.49	1.50	86.00	170.00	43.00	6.40	76.00	**1,600.00**
	11/4/09	<5.00	110.00	110.00	**430.00**	0.49	1.60	82.00	160.00	41.00	5.30	71.00	**1,500.00**
	5/7/10	<5.00	<5.00	121.00	**510.00**	0.21	1.62	80.50	188.00	44.90	4.90	73.60	**1,680.00**
	11/9/10	<5.00	115.00	115.00	**529.00**	0.33	1.72	86.00	159.00	44.30	5.00	76.10	**1,660.00**
	5/11/11	<5.00	146.00	146.00	**587.00**	1.18	1.90	415.00	166.00	80.60	11.30	211.00	**1,850.00**
	11/10/11	<5.00	115.00	115.00	**841.00**	0.19	1.56	125.00	280.00	84.80	7.51	117.00	**2,160.00**
	5/16/12	<5.00	135.00	135.00	**958.00**	0.37	1.74	143.00	249.00	62.60	6.50	97.70	**3,450.00**
Dup	5/16/12	<5.00	128.00	128.00	**882.00**	0.31	1.70	134.00	270.00	65.70	6.72	92.30	**3,050.00**
	10/11/12	<5.00	125.00	125.00	**628.00**	0.37	1.70	121.00	235.00	60.40	6.72	94.00	**1,810.00**
	5/17/13	<5.00	137.00	137.00	**754.00**	0.34	1.67	145.00	224.00	53.90	5.49	86.80	**1,930.00**
	10/8/13	<6.00	153.00	153.00	**534.00**	0.37	1.69	118.00	185.00	43.10	5.23	81.30	**1,210.00**
	10/7/14	Not Sampled											
	10/20/2015	--	--	--	232.00	<4.00	--	95.40	--	--	--	--	599.00
	10/18/16	--	--	--	**337.00**	<0.50	--	113.00	--	--	--	--	**1,250.00**
	10/24/17	--	--	--	206.00	<0.50	--	96.60	--	--	--	--	681.00
	10/18/18	--	--	--	**276.00**	0.60	--	119.00	--	--	--	--	816.00
	06/20/19	--	--	--	**268.00**	--	--	--	--	--	--	--	**1,220.00**
	11/24/19	--	--	--	231.00	--	--	83.20	--	--	--	--	838.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
MW-10	5/14/98	--	--	240.00	**360.00**	--	--	450.00	211.00	62.00	11.00	190.00	**1,400.00**
	2/15/01	<1.00	140.00	140.00	190.00	**2.00**	2.30	97.00	108.00	32.30	8.20	61.00	660.00
	5/17/02	<1.00	152.00	152.00	204.00	**1.93**	2.19	99.10	109.00	31.70	7.60	62.40	713.00
	10/22/02	--	--	--	213.00	--	--	108.00	--	--	--	--	758.00
	5/22/03	<1.00	152.00	152.00	213.00	1.45	2.17	96.60	109.00	29.90	8.65	74.20	764.00
	11/26/03	<1.00	152.00	152.00	220.00	1.54	2.26	103.00	120.00	35.70	6.96	64.00	752.00
	5/13/04	<1.00	158.00	158.00	232.00	1.39	2.23	102.00	114.00	31.60	5.95	57.20	802.00
	11/17/04	<1.00	170.00	170.00	245.00	**1.73**	2.78	104.00	121.00	35.70	7.07	70.30	764.00
	5/17/05	<1.00	150.00	150.00	233.00	**1.77**	2.80	106.00	113.00	32.30	6.83	60.20	776.00
	11/17/05	<10.00	151.00	151.00	205 D1	1.20	0.26	111 D1	482.00	47.40	13.10	82.40	970 N
	5/9/06	<10.00	190.00	190.00	180.00	1.40	1.60	98.00	93.30	27.10	4.31	60.40	724.00
	11/16/06	<10.00	320.00	320.00	190.00	1.20	1.60	92.00	101.00	30.00	4.75	64.10	900.00
	5/30/07	<10.00	340.00	340.00	200.00	1.40	1.68	110.00	101.00	28.60	<5.00	62.40	820.00
	11/15/07	<10.00	189.00	189.00	**251 D1**	1.44	1.44	152 D1	104.00	33.40	6.01	84.70	**1,010.00**
	5/15/08	<1.53	374.00	374.00	**342 D1**	1.47	1.28	257 D1	106.00	52.90	11.70	165 D1	**1,140.00**
	11/6/08	<5.00	150.00	150.00	210.00	1.50	1.30	89.00	110.00	32.00	5.40	64.00	730.00
	5/20/09	<5.00	240.00	240.00	**270.00**	1.30	1.50	120.00	110.00	35.00	6.20	72.00	960.00
	11/4/09	<5.00	150.00	150.00	240.00	1.50	1.30	130.00	100.00	35.00	5.40	78.00	1,000.00
	5/7/10	<5.00	<5.00	157.00	236.00	1.18	1.62	106.00	111.00	30.70	4.59	60.30	940.00
	11/10/10	<5.00	166.00	166.00	**280.00**	1.16	1.61	112.00	98.40	36.90	5.63	81.00	812.00
	5/11/11	<5.00	157.00	157.00	**274.00**	1.11	1.99	87.20	117.00	32.20	5.63	85.00	930.00
	11/15/11	<5.00	150.00	150.00	**266.00**	1.03	6.93	94.90	128.00	32.30	4.58	62.80	**1,450.00**
	5/16/12	<5.00	163.00	163.00	**284.00**	1.12	1.58	99.90	132.00	36.80	5.22	72.90	**1,120.00**
	10/11/12	<5.00	151.00	151.00	**255.00**	1.32	1.75	98.70	113.00	34.30	5.68	67.60	**1,010.00**
	5/17/13	<5.00	154.00	154.00	**299.00**	1.34	1.61	108.00	117.00	33.70	4.57	64.60	**1,180.00**
	10/8/13	<6.00	165.00	165.00	**324.00**	1.14	1.62	103.00	154.00	41.60	5.36	78.10	**1,240.00**
	5/1/14	<10.00	156.00	156.00	**298.00**	1.05 J	1.58	111.00	135.00	41.60	5.30	75.50	**1,050.00**
Dup	5/1/14	<10.00	158.00	158.00	**301.00**	<0.10 J	1.66	112.00	134.00	42.50	5.29	79.50	**1,080.00**
	10/7/14	<4.00	163.00	163.00	249.00	0.71	1.64	108.00	127.00	36.80	4.91	67.20	**1,050.00**
	5/22/15	--	--	--	**298.00**	<8.00	--	102.00	--	--	--	--	975.00
	10/20/15	--	--	--	250.00	<4.00	--	108.00	--	--	--	--	823.00
	5/25/16	--	--	--	**307.00**	1.44	--	107.00	--	--	--	--	**1,080.00**
	10/18/16	--	--	--	**330.00**	0.86	--	103.00	--	--	--	--	**1,350.00**
	05/11/17	--	--	--	**353.00**	<0.22	--	112.00	--	--	--	--	**1,080.00**
	10/24/17	--	--	--	240.00	1.60	--	97.00	--	--	--	--	742.00
	05/22/18	--	--	--	**346.00**	0.97	--	113.00	--	--	--	--	**1,070.00**
	10/18/18	--	--	--	**351.00**	1.10	--	118.00	--	--	--	--	892.00
	6/20/19	--	--	--	NS	--	--	--	--	--	--	--	NS
	11/24/19	--	--	--	230.00	--	--	78.00	--	--	--	--	826.00
MW-11	1/22/99	30.00	<1.00	30.00	46.00	**2.30**	4.20	94.00	33.00	7.00	9.10	58.00	370.00
	2/15/01	<1.00	156.00	156.00	37.00	**2.40**	2.40	120.00	64.00	19.10	7.83	50.10	360.00
	5/16/02	<1.00	160.00	160.00	31.90	**2.13**	2.33	98.80	63.50	17.20	4.83	47.00	444.00
	10/23/02	--	--	--	37.20	--	--	102.00	--	--	--	--	447.00
	5/22/03	12.00	154.00	166.00	32.30	**1.74**	2.28	96.70	62.30	0.00	4.63	47.60	437.00
	11/26/03	<1.00	160.00	160.00	32.40	**1.83**	2.23	96.40	59.20	16.60	4.67	48.60	448.00
	5/12/04	<1.00	164.00	164.00	34.60	**1.71**	2.38	97.70	54.80	15.70	4.28	46.20	457.00
	11/16/04	<1.00	160.00	160.00	39.00	**2.17**	2.81	100.00	65.20	16.80	5.14	54.30	454.00
	5/17/05	4.00	158.00	162.00	43.10	**1.87**	2.82	94.60	68.40	16.90	6.45	44.00	429.00
	11/17/05	<10.0	161.00	161.00	58.10	1.50	2.10	91.3 D1	75.00	17.70	4.55	64.70	700 N
	5/9/06	<10.00	180.00	180.00	37.00	**1.80**	1.70	100.00	54.10	16.20	3.26	46.90	456.00
	11/14/06	<10.00	170.00	170.00	34.00	**1.80**	1.80	110.00	58.00	18.20	4.13	53.40	532.00
	5/30/07	<10.00	142.00	142.00	36.00	**1.90**	1.79	120.00	54.00	16.70	<5.00	50.80	456.00
	11/14/07	<10.00	189.00	189.00	42.30	**1.98**	1.54	95.6 D1	57.20	17.40	<5.000	52.40	452.00
	5/15/08	<1.53	177.00	177.00	72.4 D1	**1.86**	1.71	141.00	58.00	19.40	4.93	66.5 D1	544.00
	11/4/08	<5.00	170.00	170.00	49.00	1.50	1.30	90.00	60.00	16.00	3.60	47.00	440.00
	5/20/09	<5.00	360.00	360.00	40.00	**2.20**	1.70	130.00	51.00	17.00	4.50	53.00	450.00
	11/4/09	<5.00	150.00	150.00	43.00	1.60	1.60	100.00	52.00	15.00	2.90	42.00	470.00
	5/7/10	<5.00	<5.00	167.00	36.50	**1.97**	1.78	117.00	49.70	14.90	3.42	44.70	494.00
	11/9/10	<5.00	269.00	269.00	52.50	1.45	1.79	95.40	61.00	16.70	3.56	50.00	438.00
	5/11/11	<5.00	161.00	161.00	133.00	1.43	2.08	140.00	78.10	37.00	6.32	103.00	664.00
Dup	5/11/11	<5.00	161.00	161.00	130.00	1.44	2.01	137.00	77.40	37.00	6.29	104.00	706.00
	11/10/11	<5.00	162.00	162.00	38.80	**1.86**	1.49	97.10	66.20	17.90	3.62	52.30	420.00
	5/17/12	<5.00	176.00	176.00	45.80	1.29	1.62	88.50	63.60	16.30	3.66	53.40	456.00
	10/11/12	<5.00	166.00	166.00	44.60	1.49	1.74	95.10	55.80	15.80	3.80	49.30	440.00
	5/17/13	<5.00	171.00	171.00	43.60	**1.87**	1.67	106.00	57.70	14.80	3.18	42.90	428.00
	10/8/13	<6.00	178.00	178.00	45.20	1.55	1.74	95.50	60.90	16.10	3.33	52.00	450.00
	5/1/14	<10.00	173.00	173.00	63.30	<0.10	2.06	93.30	64.40	17.60	3.38	51.50	434.00
	10/7/14	<4.00	176.00	176.00	34.70	1.10	1.71	101.00	59.20	16.70	3.06	46.50	399.00
	5/22/15	--	--	--	40.40	<4.00	--	87.20	--	--	--	--	428.00
	10/20/15	--	--	--	37.60	<2.00	--	89.30	--	--	--	--	356.00
	5/25/16	--	--	--	34.30	**1.87**	--	103.00	--	--	--	--	475.00
	10/18/16	--	--	--	39.30	0.87	--	96.40	--	--	--	--	418.00
	05/11/17	--	--	--	35.10	<0.11	--	110.00	--	--	--	--	416.00
	10/24/17	--	--	--	35.10	**1.87**	--	95.30	--	--	--	--	438.00
	05/22/18	--	--	--	34.60	1.58	--	110.00	--	--	--	--	421.00
Dup	05/22/18	--	--	--	34.50	**1.64**	--	110.00	--	--	--	--	415.00
	10/18/18	--	--	--	36.90	**1.69**	--	114.00	--	--	--	--	413.00
	06/20/19	--	--	--	34.40	--	--	--	--	--	--	--	407.00
	11/24/19	--	--	--	45.80	--	--	113.00	--	--	--	--	364.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
MW-12*	5/15/02	<1.00	160.00	160.00	58.30	1.09	2.44	91.30	53.50	15.90	5.52	50.30	462.00
	10/23/02	--	--	--	65.00	--	--	102.00	--	--	--	--	477.00
	5/22/03	<1.00	148.00	148.00	91.10	1.04	2.30	87.70	74.20	21.00	4.89	57.60	516.00
	11/25/03	<1.00	142.00	142.00	93.10	1.18	2.36	90.90	74.70	20.90	5.41	52.50	548.00
	5/12/04	<1.00	458.00	458.00	72.90	1.04	2.35	86.70	58.10	19.00	5.92	51.80	489.00
	11/15/04	<1.00	184.00	184.00	79.80	1.39	2.83	88.80	59.70	21.50	16.50	77.40	512.00
	11/17/05	<10.00	151.00	151.00	109.00	0.93	0.12	94.6 D1	193.00	26.60	13.40	87.50	700.00
	11/16/06	<10.00	270.00	270.00	120.00	0.71	1.70	84.00	82.30	27.00	4.82	62.20	620.00
	11/16/07	<10.00	170.00	170.00	**258.00**	1.21	1.55	191 D1	77.20	42.70	11.00	154.00	**1,270.00**
	11/6/08	<5.00	130.00	130.00	110.00	0.89	1.40	79.00	61.00	20.00	4.50	52.00	460.00
	11/3/09	<25.00	2,000.00	2,000.00	120.00	0.87	1.60	98.00	68.00	24.00	6.00	79.00	600.00
	11/9/10	<5.00	144.00	144.00	211.00	0.57	1.76	89.80	75.60	27.80	4.60	60.60	712.00
	11/10/11	<5.00	134.00	134.00	179.00	0.46	1.37	92.80	93.80	27.80	4.53	64.00	594.00
	10/11/12	<5.00	145.00	145.00	179.00	0.71	0.79	86.50	80.40	25.40	5.44	62.90	724.00
	10/8/13	<6.00	160.00	160.00	246.00	0.62	1.64	84.50	110.00	30.40	4.92	67.80	944.00
	10/7/14	<4.00	145.00	145.00	200.00	0.29	1.70	86.80	93.10	29.30	5.06	65.00	765.00
	10/21/15	--	--	--	165.00	<4.00	--	72.60	--	--	--	--	487.00
	10/18/16	--	--	--	**270.00**	<0.50	--	95.00	--	--	--	--	888.00
	10/24/17	--	--	--	150.00	<0.50	--	64.90	--	--	--	--	579.00
Dup	10/24/17	--	--	--	149.00	<0.50	--	64.80	--	--	--	--	565.00
	10/18/18	--	--	--	**290.00**	0.74	--	106.00	--	--	--	--	790.00
	06/20/19	--	--	--	**254.00**	--	--	--	--	--	--	--	580.00
	11/23/19	--	--	--	**337.00**	--	--	140.00	--	--	--	--	**1,010.00**
MW-13*	5/13/02	<1.00	100.00	100.00	**517.00**	<1.00	1.61	437.00	116.00	76.00	19.40	269.00	**1,596.00**
	10/23/02	--	--	--	**549.00**	--	--	370.00	--	--	--	--	**1,740.00**
	5/22/03	<1.00	186.00	186.00	**944.00**	<2.00	2.33	361.00	289.00	101.00	15.30	458.00	**3,060.00**
	11/25/03	<1.00	226.00	226.00	**1,460.00**	<2.00	2.22	372.00	369.00	117.00	20.00	478.00	**3,445.00**
	5/12/04	<1.00	234.00	234.00	**1,550.00**	<4.00	4.58	369.00	384.00	114.00	18.60	485.00	**4,240.00**
	11/15/04	<1.00	226.00	226.00	**1,870.00**	<2.00	4.92	384.00	510.00	164.00	16.50	627.00	**3,600.00**
	11/17/05	<10.00	201.00	201.00	**722.00**	1.00	2.50	206 D1	786.00	91.60	19.70	276.00	**2,350.00**
	11/16/06	<10.00	1,500.00	1,500.00	**2,000.00**	<0.50 N	2.70	500 N	529.00	176.00	14.20	493.00	**5,060.00**
	11/16/07	<10.00	236.00	236.00	**2,000.00**	0.33	3.05 D1	312 D1	361.00	105.00	11.40	553 D1	**6,320.00**
	11/6/08	<5.00	180.00	180.00	**970.00**	0.98	1.80	280.00	240.00	96.00	17.00	370.00	**2,400.00**
	11/3/09	<25.00	15,000.00	15,000.00	**2,200.00**	<0.50	2.60	440.00	490.00	180.00	22.00	490.00	**5,600.00**
	11/9/10	<5.00	267.00	267.00	**1,680.00**	0.22	2.82	405.00	400.00	120.00	10.40	540.00	**4,270.00**
	11/10/11	<5.00	206.00	206.00	**2,110.00**	0.18	<0.50	273.00	690.00	223.00	13.20	472.00	**4,870.00**
	10/11/12	<5.00	204.00	204.00	**2,360.00**	0.31	2.70	422.00	706.00	228.00	14.40	423.00	**6,290.00**
	10/8/13	<6.00	1,780.00	1,780.00	**2,710.00**	0.30	2.59	448.00	768.00	225.00	14.00	457.00	**7,320.00**
	10/7/14	<4.00	267.00	267.00	**1,430.00**	<0.10	1.91	379.00	355.00	109.00	11.30	612.00	**3,940.00**
	10/21/15	--	--	--	**1,400.00**	<40.0	--	353.00	--	--	--	--	**3,260.00**
	10/18/16	--	--	--	**1,940.00**	<0.50	--	440.00	--	--	--	--	**5,310.00**
	Well Plugged and Abandoned on 7/11/2017												
MW-14	10/8/13	<6.00	267.00	267.00	162.00	**3.69**	<0.10	127.00	74.40	32.30	8.42	145.00	854.00
Dup	10/8/13	<6.00	271.00	271.00	166.00	**3.74**	<0.10	130.00	60.70	26.30	7.97	145.00	848.00
	5/1/14	<10.00	199.00	199.00	64.00	1.19 J	<0.10	84.90	60.80	21.70	3.82	59.80	468.00
	10/7/14	<4.00	227.00	2,227.00	95.20	0.79	<0.023	22.90	71.30	24.90	3.99	61.80	460.00
Dup	10/7/14	<4.00	194.00	194.00	55.70	1.36	<0.023	88.80	59.30	19.10	3.21	49.50	490.00
	5/22/15	--	--	--	77.80	<4.00	--	45.40	--	--	--	--	468.00
Dup	5/22/15	--	--	--	77.40	<4.00	--	49.00	--	--	--	--	470.00
	10/20/15	--	--	--	29.1 J	<2.00	--	53.5 J	--	--	--	--	294.00
Dup	10/21/15	--	--	--	58.9 J	<2.00	--	101 J	--	--	--	--	407.00
	5/25/16	--	--	--	79.00	1.37	--	19.90	--	--	--	--	552.00
	10/18/16	--	--	--	51.80	1.07	--	104.00	--	--	--	--	422.00
Dup	10/18/16	--	--	--	61.20	1.25	--	108 J	--	--	--	--	459.00
	05/11/17	--	--	--	70.50	<0.11	--	17.70	--	--	--	--	412.00
	10/24/17	--	--	--	57.40	**1.77**	--	42.20	--	--	--	--	423.00
	05/22/18	--	--	--	54.90	1.20	--	47.80	--	--	--	--	390.00
	10/18/18	--	--	--	57.20	1.35	--	47.20	--	--	--	--	401.00
	06/20/19	--	--	--	42.10	--	--	--	--	--	--	--	481.00
	11/24/19	--	--	--	37.10	--	--	94.50	--	--	--	--	328.00
Dup	11/24/19	--	--	--	40.40	--	--	95.90	--	--	--	--	324.00

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					*250*	*1.60*	*10*	*600.00*					*1,000*
RW-1	5/27/99	0.00	224.00	224.00	**8,700.00**	**2.70**	7.00	**840.00**	679.00	521.00	34.00	3,290.00	**14,000.00**
	5/22/03	<1.00	190.00	190.00	**2,410.00**	**2.46**	4.23	345.00	162.00	145.00	25.40	1,180.00	**5,260.00**
	11/26/03	<1.00	184.00	184.00	**1,990.00**	<4.00	**20.00**	324.00	199.00	147.00	38.60	1,080.00	**5,050.00**
	5/11/04	<1.00	148.00	148.00	**491.00**	1.32	2.65	109.00	66.30	23.40	11.20	252.00	**1,224.00**
	11/17/04	<1.00	160.00	160.00	**633.00**	**1.65**	3.23	121.00	89.70	43.50	18.00	382.00	**1,314.00**
	11/17/05	<10.00	221.00	221.00	**895.00**	1.00	1.40	166 D1	122.00	70.90	8.40	493.00	**2,380.00**
	11/16/06	<10.00	380.00	380.00	**11,000.00**	<0.50	<20.00 HC	**1,100.00**	539.00	694.00	43.30	5,580.00	**22,000.00**
	11/15/07	<10.00	359.00	359.00	**2,380.00**	1.26	3.74 D1	252 D1	141.00	137.00	16.00	1,100 D1	**5,280.00**
Dup	11/15/07	<10.00	208.00	208.00	**2,620.00**	1.24	3.85 D1	316 D1	136.00	133.00	15.50	1,040 D1	**5,360.00**
	11/12/08	<5.00	210.00	210.00	**370.00**	0.82	1.90	97.00	66.00	34.00	5.00	190.00	920.00
	11/4/09	<5.00	170.00	170.00	**1,700.00**	1.10	2.60	250.00	110.00	120.00	22.00	750.00	**3,800.00**
	11/11/10	<5.00	192.00	192.00	**1,340.00**	0.72	2.72	204.00	95.50	104.00	12.60	792.00	**2,830.00**
	11/10/11	<5.00	396.00	396.00	**14,000.00**	**3.32**	9.16	**1,540.00**	942.00	1,260.00	44.60	8,720.00	**32,200.00**
	10/11/12	<5.00	263.00	263.00	**6,530.00**	**2.19**	4.75	**625.00**	314.00	445.00	28.00	3,490.00	**10,100.00**
Dup	10/11/12	<5.00	286.00	286.00	**2,440.00**	0.31	1.23	194.00	128.00	156.00	18.60	1,260.00	**17000****
	10/8/13	<6.00	285.00	285.00	**6,050.00**	0.95	4.29	546.00	760.00	919.00	39.00	6,370.00	**11,200.00**
Dup	10/8/13	<6.00	216.00	216.00	**10,500.00**	1.27	5.98	**926.00**	490.00	581.00	31.40	4,170.00	**1870****
	10/7/14	<4.00	207.00	207.00	**2,240.00**	1.36	3.62	338.00	69.60	106.00	24.00	1,130.00	**2,760.00**
Dup	10/7/14	<4.00	192.00	192.00	**2,570.00**	**2.51**	3.70	363.00	82.30	125.00	26.80	1,350.00	**1970****
	10/21/15	--	--	--	**9,110.00**	<80.00	--	**953 J**	--	--	--	--	**15,300.00**
Dup	10/20/15	--	--	--	**10,200.00**	<200.00	--	**1,120 J**	--	--	--	--	**21,600.00**
	12/15/15	--	--	--	**1,130.00**	--	--	--	--	--	--	--	**2,290.00**
	12/16/15	--	--	--	**1,190.00**	--	--	--	--	--	--	--	**2,580.00**
	12/17/15	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,260.00**
	12/18/15	--	--	--	**988.00**	--	--	--	--	--	--	--	**2,350.00**
	1/4/16	--	--	--	**1,200.00**	--	--	--	--	--	--	--	**2,280.00**
	1/5/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,190.00**
	1/6/16	--	--	--	**1,120.00**	--	--	--	--	--	--	--	**2,240.00**
	1/7/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,200.00**
	1/8/16	--	--	--	**1,310.00**	--	--	--	--	--	--	--	**2,370.00**
	1/11/16	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,210.00**
	1/12/16	--	--	--	**1,520.00**	--	--	--	--	--	--	--	**2,850.00**
	10/18/16	--	--	--	**277.00**	<0.50	--	87.50	--	--	--	--	715.00
Dup	10/18/16	--	--	--	**316.00**	<0.50	--	88.9 J	--	--	--	--	922.00
	10/25/17	--	--	--	**254.00**	1.02	--	75.50	--	--	--	--	**2,040.00**
	10/16/18***	--	--	--	**304.00**	0.61	--	93.40	--	--	--	--	757.00
	10/18/18	--	--	--	**7,870.00**	<0.10	--	**807.00**	--	--	--	--	**15,400.00**
Dup	10/18/18	--	--	--	**7,830.00**	<0.10	--	**873.00**	--	--	--	--	**12,700.00**
	6/20/19	--	--	--	**9,290.00**	--	--	--	--	--	--	--	**22,100.00**
Dup	6/20/19	--	--	--	**9,200.00**	--	--	--	--	--	--	--	**22,800.00**
	11/24/19	--	--	--	**5,780.00**	--	--	**722.00**	--	--	--	--	**12,200.00**
RW-2	5/22/03	324.00	<4.00	780.00	**1,580.00**	<2.00	2.43	23.90	1,060.00	<0.500	20.20	258.00	**4,310.00**
	11/26/03	64.00	<4.00	704.00	**1,480.00**	<5.00	5.81	38.30	988.00	<0.500	23.80	240.00	**3,535.00**
	11/17/04	104.00	<4.00	692.00	**2,280.00**	<10.00	<10.00	116.00	1,180.00	<0.500	18.50	415.00	**3,915.00**
	11/17/05	281.00	<10.00	422.00	**1,770.00**	0.89	0.60	175 D1	861.00	16.60	13.10	361.00	**7,350.00**
	11/16/06	49.00	150.00	199.00	**2,500.00**	0.57	1.90	370.00	978.00	48.80	18.00	437.00	**5,270.00**
	11/15/07	170.00	37.80	208.00	**1,680.00**	0.49	1.52	166 D1	586.00	<5.000	11.20	245.00	**5,590.00**
	11/12/08	150.00	<5.00	390.00	**2,500.00**	<0.50	0.24	250.00	1,200.00	<0.38	6.00	400.00	**4,800.00**
	11/4/09	34.00	<5.00	220.00	**2,200.00**	<0.50	1.70	240.00	940.00	0.18	16.00	420.00	**6,300.00**
	11/11/10	113.00	<5.00	172.00	**2,100.00**	<0.50	2.03	233.00	967.00	4.06	8.86	426.00	**4,550.00**
	11/10/11	36.90	<5.00	384.00	**4,330.00**	<10.00	2.13	305.00	2,040.00	1.12	18.70	711.00	**8,300.00**
	10/11/12	27.10	<5.00	202.00	**1,920.00**	<0.50	1.93	223.00	842.00	0.46	9.30	385.00	**6,680.00**
Dup	10/11/12	31.90	<5.00	206.00	**2,310.00**	<0.50	1.98	228.00	1,090.00	2.42	10.50	430.00	**5,250.00**
	10/8/13	66.30	<6.00	117.00	**2,450.00**	0.14	2.36	309.00	1,570.00	2.15	15.30	639.00	**4,420.00**
	10/7/14	35.20	<4.00	35.20	**2,250.00**	<0.10	2.52	378.00	995.00	21.60	10.30	408.00	**3,090.00**
	10/20/15	--	--	--	**699.00**	<20.00	--	118.00	--	--	--	--	**2,190.00**
	12/15/15	--	--	--	**1,130.00**	--	--	--	--	--	--	--	**2,290.00**
	12/16/15	--	--	--	**1,190.00**	--	--	--	--	--	--	--	**2,580.00**
	12/17/15	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,260.00**
	12/18/15	--	--	--	**988.00**	--	--	--	--	--	--	--	**2,350.00**
	1/4/16	--	--	--	**1,200.00**	--	--	--	--	--	--	--	**2,280.00**
	1/5/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,190.00**
	1/6/16	--	--	--	**1,120.00**	--	--	--	--	--	--	--	**2,240.00**
	1/7/16	--	--	--	**1,080.00**	--	--	--	--	--	--	--	**2,200.00**
	1/8/16	--	--	--	**1,310.00**	--	--	--	--	--	--	--	**2,370.00**
	1/11/16	--	--	--	**1,030.00**	--	--	--	--	--	--	--	**2,210.00**
	1/12/16	--	--	--	**1,520.00**	--	--	--	--	--	--	--	**2,850.00**
	10/18/16	--	--	--	**1,450.00**	<0.50	--	270.00	--	--	--	--	**3,910.00**
	10/25/17	--	--	--	**1,760.00**	<5.00	--	288.00	--	--	--	--	**4,440.00**
	10/18/18	--	--	--	**3,640.00**	<0.10	--	534.00	--	--	--	--	**6,890.00**
	6/20/19	--	--	--	**3,180.00**	--	--	--	--	--	--	--	**10,200 H**
	11/24/19	--	--	--	**3,510.00**	--	--	464.00	--	--	--	--	**9,880.00**
RW-2R	10/8/13	<6.00	146.00	146.00	**6,550.00**	0.45	1.79	**762.00**	1,850.00	616.00	25.50	1,350.00	**14,600.00**
	10/7/14	<4.00	169.00	169.00	**5,400.00**	1.56	2.17	**707.00**	1,280.00	470.00	20.90	1,170.00	**13,200.00**
	10/20/15	--	--	--	**5,990.00**	<80.00	--	**806.00**	--	--	--	--	**16,200.00**
	10/18/16	--	--	--	**6,390.00**	<0.50	--	**797.00**	--	--	--	--	**15,200.00**
	10/25/17	--	--	--	**7,030.00**	<5.00	--	**872.00**	--	--	--	--	**12,300.00**
	10/16/18***	--	--	--	**1,960.00**	<0.10	--	467.00	--	--	--	--	**3,380.00**
	10/18/18	--	--	--	**7,920.00**	<0.10	--	**891.00**	--	--	--	--	**13,700.00**

Appendix C
Cumulative Summary of Groundwater Analytical Results
Cooper-Jal Unit Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Sample ID	Sample Date	Carbonate Alkalinity	Bicarbonate Alkalinity	Total Alkalinity	Chloride[1]	Fluoride[2]	Nitrate - N[2]	Sulfate[1]	Calcium	Magnesium	Potassium	Sodium	TDS[1]
NMWQCC Groundwater Standard					***250***	***1.60***	***10***	***600.00***					***1,000***
Dup	10/18/18	--	--	--	**8,060.00**	<0.10	--	**815.00**	--	--	--	--	**13,300.00**
	6/20/19	--	--	--	**7,860.00**	--	--	--	--	--	--	--	**29,400.00**
	11/24/19	--	--	--	**7,720.00**	--	--	**943.00**	--	--	--	--	**21,000.00**

Notes:
1. Bold value indicates a laboratory detection and New Mexico Water Quality Control Commission (NMWQCC) exceedance.
2. Results shown in mg/L.
3. NS - Not Sampled
4. D1 - The analysis was performed at a dilution due to the high analyte concentration.
5. H - The analysis was performed past holding time.
6. C - Elevated detection limit due to matrix effect.
7. J - Estimated Concentration
8. < - Analyte detected below quantitation limit
9. [1] Human Health Standards for Groundwater.
10. [2] Other Standards for Domestic Water Supply.
11. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.
12. ** - Reported TDS concentration includes a low bias. Not used in trend comparison.
13. *** - Indicates groundwater monitor well that was sampled prior to semiannual groundwater event via low-flow purge for internal use.

APPENDIX D

Analytical Reports

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 600-187419-1
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 1:40:31 PM

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

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron Kegan Boyer

Laboratory Job ID: 600-187419-1

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Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron Kegan Boyer

Job ID: 600-187419-1

Job ID: 600-187419-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-187419-1

Comments
No additional comments.

Receipt
The samples were received on 6/21/2019 10:19 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.5° C and 1.7° C.

All applicable analytical narratives can be found in the TRRP Checklist section of this report.

Method Summary

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	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"

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 Kegan Boyer

Job ID: 600-187419-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-187419-1	MW - 12	Water	06/20/19 08:52	06/21/19 10:19	
600-187419-2	MW - 3	Water	06/20/19 09:32	06/21/19 10:19	
600-187419-3	MW - 1	Water	06/20/19 09:38	06/21/19 10:19	
600-187419-4	MW - 2A	Water	06/20/19 09:44	06/21/19 10:19	
600-187419-5	MW - 2	Water	06/20/19 09:47	06/21/19 10:19	
600-187419-6	MW - 6R	Water	06/20/19 09:53	06/21/19 10:19	
600-187419-7	DUP - 1	Water	06/20/19 00:00	06/21/19 10:19	
600-187419-8	MW - 5	Water	06/20/19 10:05	06/21/19 10:19	
600-187419-9	MW - 5A	Water	06/20/19 10:08	06/21/19 10:19	
600-187419-10	RW - 1	Water	06/20/19 10:14	06/21/19 10:19	
600-187419-11	DUP -2	Water	06/20/19 00:00	06/21/19 10:19	
600-187419-12	MW - 4	Water	06/20/19 10:22	06/21/19 10:19	
600-187419-13	MW - 4A	Water	06/20/19 10:24	06/21/19 10:19	
600-187419-14	RW - 6R	Water	06/20/19 10:49	06/21/19 10:19	
600-187419-15	RW - 2	Water	06/20/19 10:51	06/21/19 10:19	
600-187419-16	MW - 14	Water	06/20/19 11:05	06/21/19 10:19	
600-187419-17	MW - 7	Water	06/20/19 11:20	06/21/19 10:19	
600-187419-18	MW - 9	Water	06/20/19 11:30	06/21/19 10:19	
600-187419-19	MW - 9A	Water	06/20/19 11:34	06/21/19 10:19	
600-187419-20	MW - 11	Water	06/20/19 11:41	06/21/19 10:19	
600-187419-21	EB - 1	Water	06/20/19 12:50	06/21/19 10:19	

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 12
Lab Sample ID: 600-187419-1
Date Collected: 06/20/19 08:52
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	254		0.400	0.0534	mg/L			06/28/19 22:18	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	580		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 3
Lab Sample ID: 600-187419-2
Date Collected: 06/20/19 09:32
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	40.0		0.400	0.0534	mg/L			06/28/19 22:38	5

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	448		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 1
Lab Sample ID: 600-187419-3
Date Collected: 06/20/19 09:38
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1110		0.400	0.0534	mg/L			06/28/19 22:58	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2510		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 2A
Lab Sample ID: 600-187419-4
Date Collected: 06/20/19 09:44
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	86.5		0.400	0.0534	mg/L			06/28/19 23:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	554		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: MW - 2
Lab Sample ID: 600-187419-5
Date Collected: 06/20/19 09:47
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	283		0.400	0.0534	mg/L			06/29/19 00:58	20

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	960		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 6R
Lab Sample ID: 600-187419-6
Date Collected: 06/20/19 09:53
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	59.1		0.400	0.0534	mg/L			06/29/19 01:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	482		10.0	10.0	mg/L			06/26/19 15:14	1

Client Sample ID: DUP - 1
Lab Sample ID: 600-187419-7
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	64.4		0.400	0.0534	mg/L			06/29/19 02:18	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	592		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 5
Lab Sample ID: 600-187419-8
Date Collected: 06/20/19 10:05
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700		0.400	0.0534	mg/L			06/29/19 02:38	100

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4280		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 5A
Lab Sample ID: 600-187419-9
Date Collected: 06/20/19 10:08
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	118		0.400	0.0534	mg/L			06/29/19 02:58	5

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	650		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 1
Lab Sample ID: 600-187419-10
Date Collected: 06/20/19 10:14
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9290		0.400	0.0534	mg/L			06/29/19 03:18	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	22100		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: DUP -2
Lab Sample ID: 600-187419-11
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9200		0.400	0.0534	mg/L			06/29/19 03:38	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	22800		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 4
Lab Sample ID: 600-187419-12
Date Collected: 06/20/19 10:22
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2760		0.400	0.0534	mg/L			06/29/19 03:58	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7830		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 4A
Lab Sample ID: 600-187419-13
Date Collected: 06/20/19 10:24
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	336		0.400	0.0534	mg/L			06/29/19 04:58	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1040		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 6R
Lab Sample ID: 600-187419-14
Date Collected: 06/20/19 10:49
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7860		0.400	0.0534	mg/L			06/29/19 05:18	500

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	29400		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: RW - 2
Lab Sample ID: 600-187419-15
Date Collected: 06/20/19 10:51
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3180		0.400	0.0534	mg/L			06/29/19 06:18	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10200	H	10.0	10.0	mg/L			07/01/19 11:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 14
Lab Sample ID: 600-187419-16
Date Collected: 06/20/19 11:05
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.1		0.400	0.0534	mg/L			06/29/19 06:38	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	481		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 7
Lab Sample ID: 600-187419-17
Date Collected: 06/20/19 11:20
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4210		0.400	0.0534	mg/L			06/29/19 06:58	200

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15500		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 9
Lab Sample ID: 600-187419-18
Date Collected: 06/20/19 11:30
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	621		0.400	0.0534	mg/L			06/29/19 07:18	50

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2930		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 9A
Lab Sample ID: 600-187419-19
Date Collected: 06/20/19 11:34
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	268		0.400	0.0534	mg/L			06/29/19 07:38	10

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1220		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample ID: MW - 11
Lab Sample ID: 600-187419-20
Date Collected: 06/20/19 11:41
Matrix: Water
Date Received: 06/21/19 10:19

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	34.4		0.400	0.0534	mg/L			06/29/19 07:58	2

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	407		10.0	10.0	mg/L			06/27/19 12:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: EB - 1
Lab Sample ID: 600-187419-21
Date Collected: 06/20/19 12:50
Matrix: Water
Date Received: 06/21/19 10:19

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			07/01/19 16:21	1

General Chemistry

Analyte	Result	Qualifier	MQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	**70.0**		10.0	10.0	mg/L			06/27/19 12:49	1

Definitions/Glossary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

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
H	Sample was prepped or analyzed beyond the specified holding time
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.
¤	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: 600-187419-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-268268/35
Matrix: Water
Analysis Batch: 268268

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			06/28/19 23:18	1

Lab Sample ID: MB 600-268268/4
Matrix: Water
Analysis Batch: 268268

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			06/28/19 12:57	1

Lab Sample ID: LCS 600-268268/36
Matrix: Water
Analysis Batch: 268268

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	19.05		mg/L		95	90 - 110

Lab Sample ID: LCS 600-268268/5
Matrix: Water
Analysis Batch: 268268

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	19.60		mg/L		98	90 - 110

Lab Sample ID: 600-187419-5 MS
Matrix: Water
Analysis Batch: 268268

Client Sample ID: MW - 2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	283		200	439.7	N1	mg/L		79	80 - 120

Lab Sample ID: 600-187419-5 MSD
Matrix: Water
Analysis Batch: 268268

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	283		200	444.5		mg/L		81	80 - 120	1	20

Lab Sample ID: 600-187419-14 MS
Matrix: Water
Analysis Batch: 268268

Client Sample ID: RW - 6R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7860		5000	11760	N1	mg/L		78	80 - 120

Lab Sample ID: 600-187419-14 MSD
Matrix: Water
Analysis Batch: 268268

Client Sample ID: RW - 6R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7860		5000	11760	N1	mg/L		78	80 - 120	0	20

QC Sample Results

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-268404/4 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268404

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 600-268404/5 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268404

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.30		mg/L		96	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-268092/1 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268092

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			06/26/19 15:14	1

Lab Sample ID: LCS 600-268092/2 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268092

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1789		mg/L		99	90 - 110

Lab Sample ID: 600-187419-5 DU **Client Sample ID: MW - 2**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268092

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	960		934.0		mg/L		3	10

Lab Sample ID: MB 600-268191/1 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268191

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			06/27/19 12:49	1

Lab Sample ID: LCS 600-268191/2 **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 268191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1800	1834		mg/L		102	90 - 110

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Midland - Chevron Kegan Boyer

Job ID: 600-187419-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 600-187419-13 DU
Matrix: Water
Analysis Batch: 268191

Client Sample ID: MW - 4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1040			1072		mg/L				3	10

Lab Sample ID: 600-187419-18 DU
Matrix: Water
Analysis Batch: 268191

Client Sample ID: MW - 9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	2930			2976		mg/L				2	10

Lab Sample ID: MB 600-268421/1
Matrix: Water
Analysis Batch: 268421

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			07/01/19 11:28	1

Lab Sample ID: LCS 600-268421/2
Matrix: Water
Analysis Batch: 268421

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	1721		mg/L		96	90 - 110		

Default Detection Limits

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
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
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

HPLC/IC

Analysis Batch: 268268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-1	MW - 12	Total/NA	Water	300.0	
600-187419-2	MW - 3	Total/NA	Water	300.0	
600-187419-3	MW - 1	Total/NA	Water	300.0	
600-187419-4	MW - 2A	Total/NA	Water	300.0	
600-187419-5	MW - 2	Total/NA	Water	300.0	
600-187419-6	MW - 6R	Total/NA	Water	300.0	
600-187419-7	DUP - 1	Total/NA	Water	300.0	
600-187419-8	MW - 5	Total/NA	Water	300.0	
600-187419-9	MW - 5A	Total/NA	Water	300.0	
600-187419-10	RW - 1	Total/NA	Water	300.0	
600-187419-11	DUP -2	Total/NA	Water	300.0	
600-187419-12	MW - 4	Total/NA	Water	300.0	
600-187419-13	MW - 4A	Total/NA	Water	300.0	
600-187419-14	RW - 6R	Total/NA	Water	300.0	
600-187419-15	RW - 2	Total/NA	Water	300.0	
600-187419-16	MW - 14	Total/NA	Water	300.0	
600-187419-17	MW - 7	Total/NA	Water	300.0	
600-187419-18	MW - 9	Total/NA	Water	300.0	
600-187419-19	MW - 9A	Total/NA	Water	300.0	
600-187419-20	MW - 11	Total/NA	Water	300.0	
MB 600-268268/35	Method Blank	Total/NA	Water	300.0	
MB 600-268268/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268268/36	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-268268/5	Lab Control Sample	Total/NA	Water	300.0	
600-187419-5 MS	MW - 2	Total/NA	Water	300.0	
600-187419-5 MSD	MW - 2	Total/NA	Water	300.0	
600-187419-14 MS	RW - 6R	Total/NA	Water	300.0	
600-187419-14 MSD	RW - 6R	Total/NA	Water	300.0	

Analysis Batch: 268404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-21	EB - 1	Total/NA	Water	300.0	
MB 600-268404/4	Method Blank	Total/NA	Water	300.0	
LCS 600-268404/5	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 268092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-1	MW - 12	Total/NA	Water	SM 2540C	
600-187419-2	MW - 3	Total/NA	Water	SM 2540C	
600-187419-3	MW - 1	Total/NA	Water	SM 2540C	
600-187419-4	MW - 2A	Total/NA	Water	SM 2540C	
600-187419-5	MW - 2	Total/NA	Water	SM 2540C	
600-187419-6	MW - 6R	Total/NA	Water	SM 2540C	
MB 600-268092/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268092/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-187419-5 DU	MW - 2	Total/NA	Water	SM 2540C	

QC Association Summary

Client: ARCADIS U.S., Inc. Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

General Chemistry

Analysis Batch: 268191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-7	DUP - 1	Total/NA	Water	SM 2540C	
600-187419-8	MW - 5	Total/NA	Water	SM 2540C	
600-187419-9	MW - 5A	Total/NA	Water	SM 2540C	
600-187419-10	RW - 1	Total/NA	Water	SM 2540C	
600-187419-11	DUP -2	Total/NA	Water	SM 2540C	
600-187419-12	MW - 4	Total/NA	Water	SM 2540C	
600-187419-13	MW - 4A	Total/NA	Water	SM 2540C	
600-187419-14	RW - 6R	Total/NA	Water	SM 2540C	
600-187419-16	MW - 14	Total/NA	Water	SM 2540C	
600-187419-17	MW - 7	Total/NA	Water	SM 2540C	
600-187419-18	MW - 9	Total/NA	Water	SM 2540C	
600-187419-19	MW - 9A	Total/NA	Water	SM 2540C	
600-187419-20	MW - 11	Total/NA	Water	SM 2540C	
600-187419-21	EB - 1	Total/NA	Water	SM 2540C	
MB 600-268191/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268191/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-187419-13 DU	MW - 4A	Total/NA	Water	SM 2540C	
600-187419-18 DU	MW - 9	Total/NA	Water	SM 2540C	

Analysis Batch: 268421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-187419-15	RW - 2	Total/NA	Water	SM 2540C	
MB 600-268421/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-268421/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 12
Lab Sample ID: 600-187419-1
Date Collected: 06/20/19 08:52
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 3
Lab Sample ID: 600-187419-2
Date Collected: 06/20/19 09:32
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 1
Lab Sample ID: 600-187419-3
Date Collected: 06/20/19 09:38
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 22:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 2A
Lab Sample ID: 600-187419-4
Date Collected: 06/20/19 09:44
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/28/19 23:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 2
Lab Sample ID: 600-187419-5
Date Collected: 06/20/19 09:47
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 00:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Client Sample ID: MW - 6R
Lab Sample ID: 600-187419-6
Date Collected: 06/20/19 09:53
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 01:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268092	06/26/19 15:14	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: DUP - 1
Lab Sample ID: 600-187419-7
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 5
Lab Sample ID: 600-187419-8
Date Collected: 06/20/19 10:05
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 5A
Lab Sample ID: 600-187419-9
Date Collected: 06/20/19 10:08
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 02:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 1
Lab Sample ID: 600-187419-10
Date Collected: 06/20/19 10:14
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: DUP -2
Lab Sample ID: 600-187419-11
Date Collected: 06/20/19 00:00
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 4
Lab Sample ID: 600-187419-12
Date Collected: 06/20/19 10:22
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 03:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 4A
Lab Sample ID: 600-187419-13
Date Collected: 06/20/19 10:24
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 04:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 6R
Lab Sample ID: 600-187419-14
Date Collected: 06/20/19 10:49
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 05:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: RW - 2
Lab Sample ID: 600-187419-15
Date Collected: 06/20/19 10:51
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268421	07/01/19 11:28	DTN	TAL HOU

Client Sample ID: MW - 14
Lab Sample ID: 600-187419-16
Date Collected: 06/20/19 11:05
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 7
Lab Sample ID: 600-187419-17
Date Collected: 06/20/19 11:20
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 06:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 9
Lab Sample ID: 600-187419-18
Date Collected: 06/20/19 11:30
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:18	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Job ID: 600-187419-1
Project/Site: Midland - Chevron Kegan Boyer

Client Sample ID: MW - 9A
Lab Sample ID: 600-187419-19
Date Collected: 06/20/19 11:34
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:38	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: MW - 11
Lab Sample ID: 600-187419-20
Date Collected: 06/20/19 11:41
Matrix: Water
Date Received: 06/21/19 10:19

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			268268	06/29/19 07:58	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	268191	06/27/19 12:49	DTN	TAL HOU

Client Sample ID: EB - 1
Lab Sample ID: 600-187419-21
Date Collected: 06/20/19 12:50
Matrix: Water
Date Received: 06/21/19 10:19

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	07/01/19 16:21	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	268191	06/27/19 12:49	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: 600-187419-1
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

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

Chain of Custody Record

Midland #264

Client Information	Sampler: JCL / LRB	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-68943-18804.1
Client Contact: Mr. Brett Krehbiel	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 1 of 3
Company: ARCADIS U.S., Inc.		Analysis Requested		Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: Purchase Order not required			
Email: brett.krehbiel@arcadis.com	WO #:			
Project Name: Midland - Chevron Keijan Boyer	Project #: 60003622			Other:
Site: Cooper Jal	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-12	06/20/19	0852	G	Water			1		
MW-3	06/20/19	0932	G	Water			1		
MW-1	06/20/19	0938	G	Water			1		
MW-2A	06/20/19	0944	G	Water			1		
MW-2	06/20/19	0947	G	Water			1		
MW-4R	06/20/19	0953	G	Water			1		
DUP-1	06/20/19	—	G	Water			1		
MW-5	06/20/19	1005	G	Water			1		
MW-5A	06/20/19	1008	G	Water			1		
RW-1	06/20/19	1014	G	Water			1		
DUP-2	06/20/19	—	G	Water			1		

600-187419 Chain of Custody

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological	Return To Client Disposal By Lab Archive For Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	06/20/19 1311	ARCADIS			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

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

Chain of Custody Record

Midland #264

Client Information	Sampler: JOL / LR	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-68943-18804.1
Client Contact: Mr. Brett Krehbiel	Phone:	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 2 of 3
Company: ARCADIS U.S., Inc.				Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: Purchase Order not required			
Email: brett.krehbiel@arcadis.com	WO #:			
Project Name: Midland - Chevron Regan Boyer	Project #: 60003622			
Site: Cooper Jal	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C_Calcd, 300_ORGFM_28D	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
MW-4	08/20/19	1022	G	Water			1		
MW-4A	08/20/19	1024	G	Water			1		
RW-LR	08/20/19	1049	G	Water			1		
RW-2	08/20/19	1051	G	Water			1		
MW-14	08/20/19	1105	G	Water			1		
MW-7	08/20/19	1120	G	Water			1		
MW-9	08/20/19	1130	G	Water			1		
MW-9A	08/20/19	1134	G	Water			1		
MW-11	08/20/19	1141	G	Water			1		
EB-1	08/20/19	1250	G	Water			1		
	N/A			Water					

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	08/20/19 / 1311	ARCADIS			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

ORIGIN ID:MAFA (432) 215-3695
JOSH FUNDERBURG

1308 S. MIDKIFF
SUITE 133
MIDLAND, TX 79703
UNITED STATES US

SHIP DATE: 07JUN19
ACTWGT: 30.00 LB
CAD: 113247836/INET4100
DIMS: 26x14x14 IN

BILL SENDER

TO TESTAMERICA
TESTAMERICA
6310 ROTHWAY

HOUSTON TX 77040
(713) 690-4444
INV
PO
REF: ARCADIS COOPER JAL
DEPT

FedEx Express

SAT

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PRIORITY OVERNIGHT

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TestAmerica Houston

Loc: 600
187419

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Checklist

Date/Time Received: '19 JUN 21 10:19

JOB NUMBER: _____ CLIENT: Arcadis

UNPACKED BY: YR CARRIER/DRIVER: FG

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

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
Gray	Y / N	Y / N	1.9	66	-.2	1.7
Gray	Y / N	Y / N	1.7			1.5
	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				

YR 6/21/19

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

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

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:

YR 6/21/19

HS-SA-WI-013 Rev. 3; 07/01/2014

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc. Job Number: 600-187419-1

Login Number: 187419 **List Source: Eurofins TestAmerica, Houston**
List Number: 1
Creator: Rubio, Yuri

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7,1.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

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

Laboratory Job ID: 600-196675-1
Client Project/Site: Cooper Jal

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 4:18:13 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

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.

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Laboratory Job ID: 600-196675-1

Table of Contents

Appendix A
Laboratory Data Package Cover Page - Page 1 of 4

This data package is for Eurofins TestAmerica, Houston job number 600-196675-1 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		12/19/2019
Name (printed)	Signature	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:	Cooper Jal	Laboratory Job Number:	600-196675-1
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				
		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:	Cooper Jal	Laboratory Job Number:	600-196675-1
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				

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Laboratory Review Checklist: Exception Reports - Page 4 of 4

Laboratory Name:	Eurofins TestAmerica, Houston	LRC Date:	12/19/2019
Project Name:	Cooper Jal	Laboratory Job Number:	600-196675-1
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-12 (600-196675-1), MW-3 (600-196675-2), MW-2 (600-196675-3), MW-2A (600-196675-4), MW-6R (600-196675-5), MW-5 (600-196675-6), MW-5A (600-196675-7), MW-1 (600-196675-8), MW-4 (600-196675-9), MW-4A (600-196675-10), RW-1 (600-196675-11), RW-2R (600-196675-12), RW-2 (600-196675-13), MW-14 (600-196675-14), DUP-1 (600-196675-15), MW-10 (600-196675-16), MW-7 (600-196675-17), MW-8 (600-196675-18), MW-9 (600-196675-19), MW-9A (600-196675-20) and MW-11 (600-196675-21).
R05D	Method 300.0: The method blank for analytical batch 600-283030 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 600-283045 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 600-283211 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.

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);
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Detection Check Standard

EuroFins TestAmerica, Houston

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

DCS = Detection Check Standard
MQL = Method Quantitation Limit

Detection Check Standard

EuroFins TestAmerica, Houston

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

DCS = Detection Check Standard
MQL = Method Quantitation Limit

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Job ID: 600-196675-1

Laboratory: Eurofins TestAmerica, Houston

Narrative

Job Narrative
600-196675-1

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 temperature of the cooler at receipt was 2.2º 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: Cooper Jal

Job ID: 600-196675-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	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"

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: Cooper Jal

Job ID: 600-196675-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
600-196675-1	MW-12	Water	11/23/19 15:10	11/27/19 10:15	
600-196675-2	MW-3	Water	11/23/19 15:22	11/27/19 10:15	
600-196675-3	MW-2	Water	11/23/19 15:32	11/27/19 10:15	
600-196675-4	MW-2A	Water	11/23/19 15:37	11/27/19 10:15	
600-196675-5	MW-6R	Water	11/23/19 15:46	11/27/19 10:15	
600-196675-6	MW-5	Water	11/23/19 15:54	11/27/19 10:15	
600-196675-7	MW-5A	Water	11/23/19 16:04	11/27/19 10:15	
600-196675-8	MW-1	Water	11/24/19 08:26	11/27/19 10:15	
600-196675-9	MW-4	Water	11/24/19 08:44	11/27/19 10:15	
600-196675-10	MW-4A	Water	11/24/19 08:49	11/27/19 10:15	
600-196675-11	RW-1	Water	11/24/19 09:08	11/27/19 10:15	
600-196675-12	RW-2R	Water	11/24/19 09:21	11/27/19 10:15	
600-196675-13	RW-2	Water	11/24/19 09:25	11/27/19 10:15	
600-196675-14	MW-14	Water	11/24/19 09:31	11/27/19 10:15	
600-196675-15	DUP-1	Water	11/24/19 00:00	11/27/19 10:15	
600-196675-16	MW-10	Water	11/24/19 09:52	11/27/19 10:15	
600-196675-17	MW-7	Water	11/24/19 10:11	11/27/19 10:15	
600-196675-18	MW-8	Water	11/24/19 10:22	11/27/19 10:15	
600-196675-19	MW-9	Water	11/24/19 10:32	11/27/19 10:15	
600-196675-20	MW-9A	Water	11/24/19 10:41	11/27/19 10:15	
600-196675-21	MW-11	Water	11/24/19 10:51	11/27/19 10:15	

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-12
Lab Sample ID: 600-196675-1
Date Collected: 11/23/19 15:10
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	337	b	100	13.4	mg/L			12/14/19 06:51	250
Sulfate	140		125	23.9	mg/L			12/14/19 06:51	250

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1010	H	20.0	20.0	mg/L			12/04/19 15:38	1

Client Sample ID: MW-3
Lab Sample ID: 600-196675-2
Date Collected: 11/23/19 15:22
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	60.0	b	20.0	2.67	mg/L			12/14/19 07:02	50
Sulfate	96.6		25.0	4.79	mg/L			12/14/19 07:02	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	352	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-2
Lab Sample ID: 600-196675-3
Date Collected: 11/23/19 15:32
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	27.7	b	8.00	1.07	mg/L			12/14/19 07:13	20
Sulfate	42.0		10.0	1.91	mg/L			12/14/19 07:13	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	274	H	10.0	10.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-2A
Lab Sample ID: 600-196675-4
Date Collected: 11/23/19 15:37
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	88.0	b	20.0	2.67	mg/L			12/14/19 07:23	50
Sulfate	76.5		25.0	4.79	mg/L			12/14/19 07:23	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	414	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-6R
Lab Sample ID: 600-196675-5
Date Collected: 11/23/19 15:46
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	69.4	b	20.0	2.67	mg/L			12/14/19 07:34	50
Sulfate	95.2		25.0	4.79	mg/L			12/14/19 07:34	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	384	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-5
Lab Sample ID: 600-196675-6
Date Collected: 11/23/19 15:54
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	1530	b	80.0	10.7	mg/L			12/14/19 08:06	200
Sulfate	250		100	19.1	mg/L			12/14/19 08:06	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3900	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-5A
Lab Sample ID: 600-196675-7
Date Collected: 11/23/19 16:04
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	116	b	20.0	2.67	mg/L			12/14/19 08:17	50
Sulfate	61.1		25.0	4.79	mg/L			12/14/19 08:17	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	502	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-1
Lab Sample ID: 600-196675-8
Date Collected: 11/24/19 08:26
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	1110	b	80.0	10.7	mg/L			12/14/19 08:28	200
Sulfate	222		100	19.1	mg/L			12/14/19 08:28	200

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2190	H	40.0	40.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-4
Lab Sample ID: 600-196675-9
Date Collected: 11/24/19 08:44
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	3050	b	200	26.7	mg/L			12/14/19 09:00	500
Sulfate	420		250	47.9	mg/L			12/14/19 09:00	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5960	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-4A
Lab Sample ID: 600-196675-10
Date Collected: 11/24/19 08:49
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	321	b	40.0	5.34	mg/L			12/14/19 09:11	100
Sulfate	94.5		50.0	9.57	mg/L			12/14/19 09:11	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	824	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: RW-1
Lab Sample ID: 600-196675-11
Date Collected: 11/24/19 09:08
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	5780	b	400	53.4	mg/L			12/14/19 09:43	1000
Sulfate	722		500	95.7	mg/L			12/14/19 09:43	1000

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12200	H	200	200	mg/L			12/04/19 13:21	1

Client Sample ID: RW-2R
Lab Sample ID: 600-196675-12
Date Collected: 11/24/19 09:21
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	7720	b	400	53.4	mg/L			12/14/19 09:54	1000
Sulfate	943		500	95.7	mg/L			12/14/19 09:54	1000

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	21000	H	200	200	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: RW-2
Lab Sample ID: 600-196675-13
Date Collected: 11/24/19 09:25
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	3510	b	200	26.7	mg/L			12/18/19 01:23	500
Sulfate	464		250	47.9	mg/L			12/18/19 01:23	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	9880	H	200	200	mg/L			12/04/19 13:21	1

Client Sample ID: MW-14
Lab Sample ID: 600-196675-14
Date Collected: 11/24/19 09:31
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	37.1	b	8.00	1.07	mg/L			12/14/19 10:24	20
Sulfate	94.5		10.0	1.91	mg/L			12/14/19 10:24	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	328	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: DUP-1
Lab Sample ID: 600-196675-15
Date Collected: 11/24/19 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	40.4	b	8.00	1.07	mg/L			12/14/19 11:25	20
Sulfate	95.9		10.0	1.91	mg/L			12/14/19 11:25	20

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	324	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-10
Lab Sample ID: 600-196675-16
Date Collected: 11/24/19 09:52
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	230	b	40.0	5.34	mg/L			12/14/19 11:46	100
Sulfate	78.0		50.0	9.57	mg/L			12/14/19 11:46	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	826	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-7
Lab Sample ID: 600-196675-17
Date Collected: 11/24/19 10:11
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	2080	b	200	26.7	mg/L			12/14/19 12:06	500
Sulfate	272		250	47.9	mg/L			12/14/19 12:06	500

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6300	H	100	100	mg/L			12/04/19 13:21	1

Client Sample ID: MW-8
Lab Sample ID: 600-196675-18
Date Collected: 11/24/19 10:22
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	12.9	b	10.0	1.34	mg/L			12/14/19 12:27	25
Sulfate	27.6		12.5	2.39	mg/L			12/14/19 12:27	25

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	239	H	10.0	10.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-9
Lab Sample ID: 600-196675-19
Date Collected: 11/24/19 10:32
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	337	b	40.0	5.34	mg/L			12/14/19 12:47	100
Sulfate	80.6		50.0	9.57	mg/L			12/14/19 12:47	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1170	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample ID: MW-9A
Lab Sample ID: 600-196675-20
Date Collected: 11/24/19 10:41
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	231	b	40.0	5.34	mg/L			12/14/19 13:48	100
Sulfate	83.2		50.0	9.57	mg/L			12/14/19 13:48	100

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	838	H	20.0	20.0	mg/L			12/04/19 13:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-11

Date Collected: 11/24/19 10:51
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-21

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	45.8	b	20.0	2.67	mg/L			12/14/19 14:50	50
Sulfate	113		25.0	4.79	mg/L			12/14/19 14:50	50

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	364	H	20.0	20.0	mg/L			12/04/19 13:21	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

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
H	Sample was prepped or analyzed beyond the specified holding time
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.
¤	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: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 600-283030/34
Matrix: Water
Analysis Batch: 283030

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3130	J	0.400	0.0534	mg/L			12/14/19 07:45	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 07:45	1

Lab Sample ID: MB 600-283030/6
Matrix: Water
Analysis Batch: 283030

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.3105	J	0.400	0.0534	mg/L			12/14/19 02:43	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/14/19 02:43	1

Lab Sample ID: LCS 600-283030/35
Matrix: Water
Analysis Batch: 283030

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	19.18		mg/L		96	90 - 110

Lab Sample ID: LCS 600-283030/7
Matrix: Water
Analysis Batch: 283030

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	19.37		mg/L		97	90 - 110
Sulfate	20.0	19.14		mg/L		96	90 - 110

Lab Sample ID: 600-196675-10 MS
Matrix: Water
Analysis Batch: 283030

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	321	b	1000	1285		mg/L		96	80 - 120
Sulfate	94.5		1000	1026		mg/L		93	80 - 120

Lab Sample ID: 600-196675-10 MSD
Matrix: Water
Analysis Batch: 283030

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	321	b	1000	1296		mg/L		97	80 - 120	1	20
Sulfate	94.5		1000	1046		mg/L		95	80 - 120	2	20

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

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: 600-196675-14 MS
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	37.1	b	200	243.4		mg/L		103	80 - 120		
Sulfate	94.5		200	294.4		mg/L		100	80 - 120		

Lab Sample ID: 600-196675-14 MSD
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	37.1	b	200	243.4		mg/L		103	80 - 120	0	20
Sulfate	94.5		200	293.7		mg/L		100	80 - 120	0	20

Lab Sample ID: 600-196675-20 MS
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-9A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chloride	231	b	1000	1255		mg/L		102	80 - 120		
Sulfate	83.2		1000	1041		mg/L		96	80 - 120		

Lab Sample ID: 600-196675-20 MSD
Matrix: Water
Analysis Batch: 283045

Client Sample ID: MW-9A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	231	b	1000	1261		mg/L		103	80 - 120	1	20
Sulfate	83.2		1000	1045		mg/L		96	80 - 120	0	20

Lab Sample ID: MB 600-283211/35
Matrix: Water
Analysis Batch: 283211

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1862	J	0.400	0.0534	mg/L			12/17/19 22:19	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 22:19	1

Lab Sample ID: MB 600-283211/4
Matrix: Water
Analysis Batch: 283211

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

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	0.1863	J	0.400	0.0534	mg/L			12/17/19 11:46	1
Sulfate	0.0957	U	0.500	0.0957	mg/L			12/17/19 11:46	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 600-283211/36
Matrix: Water
Analysis Batch: 283211

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1000	1017		mg/L		102	90 - 110
Sulfate	1000	980.3		mg/L		98	90 - 110

Lab Sample ID: LCS 600-283211/5
Matrix: Water
Analysis Batch: 283211

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	20.14		mg/L		101	90 - 110
Sulfate	20.0	19.34		mg/L		97	90 - 110

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 600-282061/1
Matrix: Water
Analysis Batch: 282061

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 13:21	1

Lab Sample ID: LCS 600-282061/2
Matrix: Water
Analysis Batch: 282061

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: 600-196675-10 DU
Matrix: Water
Analysis Batch: 282061

Client Sample ID: MW-4A
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	824	H	806.0		mg/L		2	10

Lab Sample ID: 600-196675-21 DU
Matrix: Water
Analysis Batch: 282061

Client Sample ID: MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	364	H	340.0		mg/L		7	10

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

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: 600-196675-1 DU
Matrix: Water
Analysis Batch: 282105

Client Sample ID: MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1010	H		1032		mg/L				2	10

Unadjusted Detection Limits

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

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
Total Dissolved Solids	10.0	10.0	mg/L

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

HPLC/IC

Analysis Batch: 283030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-1	MW-12	Total/NA	Water	300.0	
600-196675-2	MW-3	Total/NA	Water	300.0	
600-196675-3	MW-2	Total/NA	Water	300.0	
600-196675-4	MW-2A	Total/NA	Water	300.0	
600-196675-5	MW-6R	Total/NA	Water	300.0	
600-196675-6	MW-5	Total/NA	Water	300.0	
600-196675-7	MW-5A	Total/NA	Water	300.0	
600-196675-8	MW-1	Total/NA	Water	300.0	
600-196675-9	MW-4	Total/NA	Water	300.0	
600-196675-10	MW-4A	Total/NA	Water	300.0	
600-196675-11	RW-1	Total/NA	Water	300.0	
600-196675-12	RW-2R	Total/NA	Water	300.0	
MB 600-283030/34	Method Blank	Total/NA	Water	300.0	
MB 600-283030/6	Method Blank	Total/NA	Water	300.0	
LCS 600-283030/35	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283030/7	Lab Control Sample	Total/NA	Water	300.0	
600-196675-10 MS	MW-4A	Total/NA	Water	300.0	
600-196675-10 MSD	MW-4A	Total/NA	Water	300.0	

Analysis Batch: 283045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-14	MW-14	Total/NA	Water	300.0	
600-196675-15	DUP-1	Total/NA	Water	300.0	
600-196675-16	MW-10	Total/NA	Water	300.0	
600-196675-17	MW-7	Total/NA	Water	300.0	
600-196675-18	MW-8	Total/NA	Water	300.0	
600-196675-19	MW-9	Total/NA	Water	300.0	
600-196675-20	MW-9A	Total/NA	Water	300.0	
600-196675-21	MW-11	Total/NA	Water	300.0	
MB 600-283045/4	Method Blank	Total/NA	Water	300.0	
LCS 600-283045/5	Lab Control Sample	Total/NA	Water	300.0	
600-196675-14 MS	MW-14	Total/NA	Water	300.0	
600-196675-14 MSD	MW-14	Total/NA	Water	300.0	
600-196675-20 MS	MW-9A	Total/NA	Water	300.0	
600-196675-20 MSD	MW-9A	Total/NA	Water	300.0	

Analysis Batch: 283211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-13	RW-2	Total/NA	Water	300.0	
MB 600-283211/35	Method Blank	Total/NA	Water	300.0	
MB 600-283211/4	Method Blank	Total/NA	Water	300.0	
LCS 600-283211/36	Lab Control Sample	Total/NA	Water	300.0	
LCS 600-283211/5	Lab Control Sample	Total/NA	Water	300.0	

General Chemistry

Analysis Batch: 282061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-2	MW-3	Total/NA	Water	SM 2540C	
600-196675-3	MW-2	Total/NA	Water	SM 2540C	
600-196675-4	MW-2A	Total/NA	Water	SM 2540C	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

General Chemistry (Continued)

Analysis Batch: 282061 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-5	MW-6R	Total/NA	Water	SM 2540C	
600-196675-6	MW-5	Total/NA	Water	SM 2540C	
600-196675-7	MW-5A	Total/NA	Water	SM 2540C	
600-196675-8	MW-1	Total/NA	Water	SM 2540C	
600-196675-9	MW-4	Total/NA	Water	SM 2540C	
600-196675-10	MW-4A	Total/NA	Water	SM 2540C	
600-196675-11	RW-1	Total/NA	Water	SM 2540C	
600-196675-12	RW-2R	Total/NA	Water	SM 2540C	
600-196675-13	RW-2	Total/NA	Water	SM 2540C	
600-196675-14	MW-14	Total/NA	Water	SM 2540C	
600-196675-15	DUP-1	Total/NA	Water	SM 2540C	
600-196675-16	MW-10	Total/NA	Water	SM 2540C	
600-196675-17	MW-7	Total/NA	Water	SM 2540C	
600-196675-18	MW-8	Total/NA	Water	SM 2540C	
600-196675-19	MW-9	Total/NA	Water	SM 2540C	
600-196675-20	MW-9A	Total/NA	Water	SM 2540C	
600-196675-21	MW-11	Total/NA	Water	SM 2540C	
MB 600-282061/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 600-282061/2	Lab Control Sample	Total/NA	Water	SM 2540C	
600-196675-10 DU	MW-4A	Total/NA	Water	SM 2540C	
600-196675-21 DU	MW-11	Total/NA	Water	SM 2540C	

Analysis Batch: 282105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-196675-1	MW-12	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	
600-196675-1 DU	MW-12	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-12
Date Collected: 11/23/19 15:10
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-1
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		250			283030	12/14/19 06:51	W1N	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 15:22
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-2
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		50			283030	12/14/19 07:02	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-2
Date Collected: 11/23/19 15:32
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-3
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		20			283030	12/14/19 07:13	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-2A
Date Collected: 11/23/19 15:37
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-4
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		50			283030	12/14/19 07:23	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-6R
Date Collected: 11/23/19 15:46
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-5
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		50			283030	12/14/19 07:34	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-5
Date Collected: 11/23/19 15:54
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-6
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		200			283030	12/14/19 08:06	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-5A
Date Collected: 11/23/19 16:04
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-7
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		50			283030	12/14/19 08:17	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-1
Date Collected: 11/24/19 08:26
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-8
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		200			283030	12/14/19 08:28	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	25 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-4
Date Collected: 11/24/19 08:44
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-9
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			283030	12/14/19 09:00	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-4A
Date Collected: 11/24/19 08:49
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-10
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		100			283030	12/14/19 09:11	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: RW-1
Date Collected: 11/24/19 09:08
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-11
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		1000			283030	12/14/19 09:43	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: RW-2R
Date Collected: 11/24/19 09:21
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-12
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		1000			283030	12/14/19 09:54	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: RW-2
Date Collected: 11/24/19 09:25
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-13
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			283211	12/18/19 01:23	SKR	TAL HOU
Total/NA	Analysis	SM 2540C		1	5 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-14
Date Collected: 11/24/19 09:31
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-14
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			283045	12/14/19 10:24	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: DUP-1
Date Collected: 11/24/19 00:00
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-15
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			283045	12/14/19 11:25	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-10
Date Collected: 11/24/19 09:52
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-16
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			283045	12/14/19 11:46	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-7
Date Collected: 11/24/19 10:11
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-17
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 12:06	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	10 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-8
Date Collected: 11/24/19 10:22
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-18
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		25			283045	12/14/19 12:27	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Cooper Jal

Job ID: 600-196675-1

Client Sample ID: MW-9
Date Collected: 11/24/19 10:32
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-19
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		100			283045	12/14/19 12:47	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-9A
Date Collected: 11/24/19 10:41
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-20
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	12/14/19 13:48	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	TNL	TAL HOU

Client Sample ID: MW-11
Date Collected: 11/24/19 10:51
Date Received: 11/27/19 10:15

Lab Sample ID: 600-196675-21
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		50			283045	12/14/19 14:50	W1N	TAL HOU
Total/NA	Analysis	SM 2540C		1	50 mL	100 mL	282061	12/04/19 13:21	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.
Job ID: 600-196675-1
Project/Site: Cooper Jal

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

Chain of Custody Record

eurofins | Environment Testing TestAmerica

Client Information	Sampler: Carlos Martinez	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72356-19860.3
Client Contact: Mr. Russell Grant	Phone: 361-701-0369	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: 30006543 Mark Owen			
Email: russell.grant@arcadis-us.com	WO #:			
Project Name: ~~MARK OWEN~~ Cooper Jal	Project #: 60003622			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2540C - TDS	300-Cl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:			N				
MW-12	11/23/19	1510	G	Water			X	X	1	
~~MW-3~~ MW-3	11/23/19	1522	G	Water			X	X	1	
MW-2	11/23/19	1532	G	Water			X	X	1	
MW-2A	11/23/19	1537	G	Water			X	X	1	
MW-6R	11/23/19	1546	G	Water			X	X	1	
MW-5	11/23/19	1554	G	Water			X	X	1	
MW-5A	11/23/19	1604	G	Water			X	X	1	
MW-1	11/24/19	0826	G	Water			X	X	1	
MW-4	11/24/19	0844	G	Water			X	X	1	
MW-4A	11/24/19	0849	G	Water			X	X	1	
RW-1	11/24/19	0905	G	Water			X	X	1	

600-196675 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by: Carlos Martinez	11/26/19 1800	ARCADIS	[signature]	11/27/19 1015	TAH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

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

Chain of Custody Record

eurofins Environment Testing TestAmerica

Client Information	Sampler: Carlos Martinez	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-72356-19860.3
Client Contact: Mr. Russell Grant	Phone: 361-701-0561	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page
Company: ARCADIS U.S., Inc.				Job #:
Address: 1004 North Big Spring Suite 121	Due Date Requested:			
City: Midland	TAT Requested (days):			
State, Zip: TX, 79701				
Phone: 916-786-5382(Tel)	PO #: 30006543 Mark Owen			
Email: russell.grant@arcadis-us.com	WO #:			
Project Name: ~~MARK OWEN~~ Cooper Jal	Project #: 60003622			
Site:	SSOW#:			

Analysis Requested

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

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	2320B, Alkalinity	2540C - TDS	300-Cl, SO4	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N				
RW-2R	11/24/19	0921	G	Water				X	X	1	
RW-2	11/24/19	0925	G	Water				X	X	1	
MW-14	11 24 19	0931	G	Water				X	X	1	
DUP-1	11 24 19	—	G	Water				X	X	1	
MW-10	11 24 19	0952	G	Water				X	X	1	
MW-7	11/24/19	1011	G	Water				X	X	2	
MW-8	11/24/19	1022	G	Water				X	X	1	
MW-9	11/24/19	1032 [redacted]	G	Water				X	X	1	
MW-9A	11/24/19	1041	G	Water				X	X	1	
MW-11	11/24/19	1051	G	Water				X	X	1	
				Water							

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Carlos Martinez	11/26/19 / 1800	ARCADIS	[signature]	11/27/19 1015	TAH
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

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

Ver: 01/16/2019

Loc: 600
196675

eurofins | Environment Testing TestAmerica

Eurofins TestAmerica Houston

Sample Receipt Checklist

'19 NOV 27 10:15

Date/Time Received: _____

JOB NUMBER: _____ CLIENT: Arcadis

UNPACKED BY: JR CARRIER/DRIVER: FedEX

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

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
133	Y / N	Y / N	2.1	676	+0.1	2.2
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N			JR 11/27/19	
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☑YES ☐NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☑NO ☐YES

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

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

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

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

COMMENTS:

JR 11/29/19

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

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc. Job Number: 600-196675-1

Login Number: 196675 **List Source: Eurofins TestAmerica, Houston**
List Number: 1
Creator: Rubio, Yuri

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

APPENDIX E

Cumulative Summary of Groundwater Potentiometric Elevation Data

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-1	05/18/98	135.05	3184.95	173.00	2.00	153-173
3320.00	05/25/99	134.93	3185.07	---	---	---
	02/08/01	134.80	3185.20	---	---	---
	05/10/02	134.77	3185.23	---	---	---
	10/22/02	134.89	3185.11	---	---	---
	05/20/03	135.17	3184.83	---	---	---
	11/24/03	134.70	3185.30	---	---	---
	05/11/04	134.75	3185.25	---	---	---
	11/15/04	134.76	3185.24	---	---	---
	05/17/05	134.29	3185.71	---	---	---
	11/15/05	134.93	3185.07	---	---	---
	05/08/06	134.68	3185.32	---	---	---
	11/13/06	134.62	3185.38	---	---	---
	05/29/07	134.71	3185.29	---	---	---
	11/16/07	134.70	3185.30	---	---	---
	05/14/08	134.73	3185.27	---	---	---
	11/03/08	134.69	3185.31	---	---	---
	05/19/09	134.64	3185.36	---	---	---
	11/02/09	134.71	3185.29	---	---	---
	05/05/10	134.90	3185.10	---	---	---
	11/08/10	134.50	3185.50	---	---	---
	05/11/11	134.60	3185.40	---	---	---
	11/08/11	134.64	3185.36	---	---	---
	05/16/12	134.60	3185.40	---	---	---
	10/10/12	134.73	3185.27	---	---	---
	05/16/13	134.58	3185.42	---	---	---
	10/08/13	134.53	3185.47	---	---	---
	05/01/14	134.70	3185.30	---	---	---
	10/05/14	134.49	3185.51	---	---	---
	05/21/15	134.56	3185.44	---	---	---
	10/19/15	134.80	3185.20	---	---	---
	05/25/16	134.69	3185.31	---	---	---
	10/17/16	134.35	3185.65	---	---	---
	05/10/17	134.44	3185.56	---	---	---
3321.94	10/24/17	134.63	3187.31	---	---	---
	05/22/18	134.45	3187.49	---	---	---
	10/17/18	134.54	3187.40	---	---	---
	06/20/19	134.56	3187.38	171.17	---	---
	11/20/19	134.45	3187.49	174.20	---	---
MW-2	05/18/98	135.00	3184.86	173.00	2.00	163-173
3319.86	05/25/99	134.79	3185.07	---	---	---
	02/08/01	134.63	3185.23	---	---	---
	05/10/02	134.65	3185.21	---	---	---
	10/22/02	134.72	3185.14	---	---	---
	05/20/03	134.95	3184.91	---	---	---
	11/24/03	134.56	3185.30	---	---	---
	05/11/04	134.55	3185.31	---	---	---
	11/15/04	134.53	3185.33	---	---	---
	05/17/05	134.39	3185.47	---	---	---
	11/15/05	134.77	3185.09	---	---	---
	05/08/06	134.52	3185.34	---	---	---
	11/13/06	134.44	3185.42	---	---	---
	05/29/07	134.54	3185.32	---	---	---
	11/14/07	134.52	3185.34	---	---	---
	05/14/08	134.53	3185.33	---	---	---
	11/03/08	134.44	3185.42	---	---	---
	05/19/09	134.46	3185.40	---	---	---
	11/16/09	134.51	3185.35	---	---	---
	05/05/10	134.62	3185.24	---	---	---
	11/08/10	134.25	3185.61	---	---	---
	05/11/11	134.31	3185.55	---	---	---
	11/08/11	134.36	3185.50	---	---	---
	05/16/12	134.31	3185.55	---	---	---
	10/10/12	134.51	3185.35	---	---	---
	05/16/13	134.33	3185.53	---	---	---
	10/07/13	142.85	3177.01	---	---	---
	05/01/14	134.37	3185.49	---	---	---
	10/05/14	134.14	3185.72	---	---	---
	05/21/15	134.21	3185.65	---	---	---
	10/19/15	134.20	3185.66	---	---	---
	05/25/16	134.38	3185.48	---	---	---
	10/17/16	134.00	3185.86	---	---	---
	05/10/17	134.13	3185.73	---	---	---
3321.27	10/25/17	134.32	3186.95	---	---	---
	05/22/18	134.11	3187.16	---	---	---
	10/17/18	134.21	3187.06	---	---	---
	06/20/19	134.27	3187.00	168.39	---	---
	11/20/19	134.21	3187.06	168.57	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-2A	05/18/98	134.80	3185.06	145.00	2.00	130-145
3319.86	05/25/99	134.73	3185.13	---	---	---
	02/08/01	134.58	3185.28	---	---	---
	05/10/02	134.50	3185.36	---	---	---
	10/22/02	134.66	3185.20	---	---	---
	05/20/03	135.80	3184.06	---	---	---
	11/24/03	134.60	3185.26	---	---	---
	05/11/04	134.53	3185.33	---	---	---
	11/15/04	134.58	3185.28	---	---	---
	05/17/05	134.47	3185.39	---	---	---
	11/15/05	134.74	3185.12	---	---	---
	05/08/06	134.46	3185.40	---	---	---
	11/13/06	134.39	3185.47	---	---	---
	05/29/07	134.50	3185.36	---	---	---
	11/14/07	134.48	3185.38	---	---	---
	05/14/08	134.49	3185.37	---	---	---
	11/03/08	134.46	3185.40	---	---	---
	05/19/09	134.42	3185.44	---	---	---
	11/02/09	134.45	3185.41	---	---	---
	05/05/10	134.52	3185.34	---	---	---
	11/08/10	134.30	3185.56	---	---	---
	05/11/11	134.38	3185.48	---	---	---
	11/08/11	134.42	3185.44	---	---	---
	05/16/12	134.43	3185.43	---	---	---
	10/10/12	134.65	3185.21	---	---	---
	05/16/13	134.35	3185.51	---	---	---
	10/07/13	134.20	3185.66	---	---	---
	05/01/14	134.45	3185.41	---	---	---
	10/05/14	134.15	3185.71	---	---	---
	05/21/15	134.32	3185.54	---	---	---
	10/19/15	134.40	3185.46	---	---	---
	05/25/16	134.49	3185.37	---	---	---
	10/17/16	134.10	3185.76	---	---	---
	05/10/17	134.29	3185.57	---	---	---
3321.3	10/25/17	134.40	3186.90	---	---	---
	05/22/18	134.31	3186.99	---	---	---
	10/17/18	134.31	3186.99	---	---	---
	06/20/19	134.43	3186.87	142.47	---	---
	11/20/19	134.24	3187.06	142.23	---	---
MW-3	05/18/98	132.65	3185.56	171.00	2.00	161-171
3318.21	05/25/99	132.52	3185.69	---	---	---
	02/08/01	132.40	3185.81	---	---	---
	05/10/02	132.40	3185.81	---	---	---
	10/22/02	132.49	3185.72	---	---	---
	05/20/03	132.75	3185.46	---	---	---
	11/24/03	132.29	3185.92	---	---	---
	05/11/04	132.38	3185.83	---	---	---
	11/15/04	132.46	3185.75	---	---	---
	05/17/05	132.32	3185.89	---	---	---
	11/15/05	132.55	3185.66	---	---	---
	05/08/06	132.32	3185.89	---	---	---
	11/13/06	132.27	3185.94	---	---	---
	05/29/07	132.36	3185.85	---	---	---
	11/16/07	132.34	3185.87	---	---	---
	05/14/08	132.36	3185.85	---	---	---
	11/03/08	132.31	3185.90	---	---	---
	05/19/09	132.25	3185.96	---	---	---
	11/02/09	132.37	3185.84	---	---	---
	05/05/10	132.48	3185.73	---	---	---
	11/08/10	132.14	3186.07	---	---	---
	05/11/11	132.24	3185.97	---	---	---
	11/08/11	132.30	3185.91	---	---	---
	05/16/12	132.25	3185.96	---	---	---
	10/10/12	132.54	3185.67	---	---	---
	05/16/13	132.25	3185.96	---	---	---
	10/08/13	132.14	3186.07	---	---	---
	05/01/14	132.10	3186.11	---	---	---
	10/05/14	132.58	3185.63	---	---	---
	05/21/15	132.25	3185.96	---	---	---
	10/19/15	132.25	3185.96	---	---	---
	05/25/16	132.34	3185.87	---	---	---
	10/17/16	132.00	3186.21	---	---	---
	05/10/17	132.21	3186.00	---	---	---
3320.08	10/24/17	132.30	3187.78	---	---	---
	05/22/18	132.15	3187.93	---	---	---
	10/17/18	132.21	3187.87	---	---	---
	06/20/19	132.24	3187.84	171.93	---	---
	11/19/19	132.50	3187.58	175.90	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-4	05/18/98	136.01	3183.73	171.00	2.00	161-171
3319.74	05/25/99	135.57	3184.17	---	---	---
	02/08/01	135.87	3183.87	---	---	---
	05/10/02	135.67	3184.07	---	---	---
	10/22/02	135.90	3183.84	---	---	---
	05/20/03	136.00	3183.74	---	---	---
	11/24/03	135.70	3184.04	---	---	---
	05/11/04	135.34	3184.40	---	---	---
	11/15/04	135.76	3183.98	---	---	---
	05/17/05	135.69	3184.05	---	---	---
	11/15/05	135.85	3183.89	---	---	---
	05/08/06	135.60	3184.14	---	---	---
	11/13/06	135.59	3184.15	---	---	---
	05/29/07	135.75	3183.99	---	---	---
	11/14/07	135.62	3184.12	---	---	---
	05/14/08	135.76	3183.98	---	---	---
	11/03/08	135.66	3184.08	---	---	---
	05/19/09	135.67	3184.07	---	---	---
	11/02/09	135.68	3184.06	---	---	---
	05/05/10	135.83	3183.91	---	---	---
	11/08/10	135.36	3184.38	---	---	---
	05/05/11	135.40	3184.34	---	---	---
	11/08/11	135.43	3184.31	---	---	---
	05/16/12	135.38	3184.36	---	---	---
	10/10/12	135.55	3184.19	---	---	---
	05/16/13	135.38	3184.36	---	---	---
	10/07/13	135.53	3184.21	---	---	---
	05/01/14	135.41	3184.33	---	---	---
	10/05/14	135.61	3184.13	---	---	---
	05/21/15	135.25	3184.49	---	---	---
	10/19/15	135.70	3184.04	---	---	---
	05/25/16	135.44	3184.30	---	---	---
	10/17/16	135.11	3184.63	---	---	---
	05/10/17	135.20	3184.54	---	---	---
3321.58	10/25/17	135.40	3186.18	---	---	---
	05/22/18	135.13	3186.45	---	---	---
	10/16/18	135.32	3186.26	---	---	---
	06/20/19	136.21	3185.37	171.81	---	---
	11/19/19	135.06	3186.52	177.64	---	---
MW-4A	05/18/98	135.68	3183.90	143.00	2.00	128-143
3319.58	05/21/99	135.65	3183.93	---	---	---
	05/25/99	135.90	3183.68	---	---	---
	02/08/01	135.34	3184.24	---	---	---
	05/10/02	135.30	3184.28	---	---	---
	10/22/02	135.51	3184.07	---	---	---
	05/20/03	135.55	3184.03	---	---	---
	11/24/03	135.31	3184.27	---	---	---
	05/11/04	135.72	3183.86	---	---	---
	11/15/04	135.38	3184.20	---	---	---
	05/17/05	135.32	3184.26	---	---	---
	11/15/05	135.52	3184.06	---	---	---
	05/08/06	135.26	3184.32	---	---	---
	11/13/06	135.20	3184.38	---	---	---
	05/29/07	135.32	3184.26	---	---	---
	11/14/07	135.20	3184.38	---	---	---
	05/14/08	135.31	3184.27	---	---	---
	11/03/08	135.27	3184.31	---	---	---
	05/19/09	135.25	3184.33	---	---	---
	11/02/09	135.25	3184.33	---	---	---
	05/05/10	135.33	3184.25	---	---	---
	11/08/10	135.18	3184.40	---	---	---
	05/11/11	135.17	3184.41	---	---	---
	11/08/11	135.22	3184.36	---	---	---
	05/16/12	135.18	3184.40	---	---	---
	10/10/12	135.33	3184.25	---	---	---
	05/16/13	135.20	3184.38	---	---	---
	10/07/13	135.01	3184.57	---	---	---
	05/01/14	135.26	3184.32	---	---	---
	10/05/14	135.05	3184.53	---	---	---
	05/21/15	135.11	3184.47	---	---	---
	10/19/15	135.20	3184.38	---	---	---
	05/25/16	135.27	3184.31	---	---	---
	10/17/16	135.00	3184.58	---	---	---
	05/10/17	135.01	3184.57	---	---	---
3321.42	10/25/17	135.22	3186.20	---	---	---
	05/22/18	134.97	3186.45	---	---	---
	10/16/18	135.11	3186.31	---	---	---
	06/20/19	134.98	3186.44	145.55	---	---
	11/19/19	134.95	3186.47	147.60	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-5	05/18/98	137.42	3183.68	171.00	2.00	161-171
3321.10	05/25/99	137.28	3183.82	---	---	---
	02/08/01	137.18	3183.92	---	---	---
	05/10/02	137.10	3184.00	---	---	---
	10/22/02	137.04	3184.06	---	---	---
	05/20/03	137.45	3183.65	---	---	---
	11/24/03	137.01	3184.09	---	---	---
	05/11/04	137.01	3184.09	---	---	---
	11/15/04	137.08	3184.02	---	---	---
	05/17/05	137.00	3184.10	---	---	---
	11/15/05	137.18	3183.92	---	---	---
	05/08/06	136.90	3184.20	---	---	---
	11/13/06	136.81	3184.29	---	---	---
	05/29/07	136.92	3184.18	---	---	---
	11/14/07	136.85	3184.25	---	---	---
	05/14/08	136.97	3184.13	---	---	---
	11/03/08	136.89	3184.21	---	---	---
	05/19/09	136.90	3184.20	---	---	---
	11/02/09	136.90	3184.20	---	---	---
	05/05/10	137.02	3184.08	---	---	---
	11/08/10	136.93	3184.17	---	---	---
	05/11/11	136.92	3184.18	---	---	---
	11/08/11	136.84	3184.26	---	---	---
	05/16/12	136.80	3184.30	---	---	---
	10/10/12	136.98	3184.12	---	---	---
	05/16/13	136.80	3184.30	---	---	---
	10/07/13	136.79	3184.31	---	---	---
	05/01/14	136.83	3184.27	---	---	---
	10/05/14	136.63	3184.47	---	---	---
	05/21/15	130.60	3190.50	---	---	---
	10/19/15	136.70	3184.40	---	---	---
	05/25/16	136.79	3184.31	---	---	---
	10/17/16	136.51	3184.59	---	---	---
	05/10/17	136.53	3184.57	---	---	---
3322.98	10/25/17	136.80	3186.18	---	---	---
	05/22/18	136.51	3186.47	---	---	---
	10/16/18	136.58	3186.40	---	---	---
	06/20/19	136.65	3186.33	173.72	---	---
	11/19/19	136.91	3186.07	177.50	---	---
MW-5A	05/18/98	137.20	3183.87	141.00	2.00	126-141
3321.07	05/25/99	137.11	3183.96	---	---	---
	02/08/01	136.99	3184.08	---	---	---
	05/10/02	136.90	3184.17	---	---	---
	10/22/02	137.17	3183.90	---	---	---
	05/20/03	137.24	3183.83	---	---	---
	11/24/03	136.91	3184.16	---	---	---
	05/11/04	136.88	3184.19	---	---	---
	11/15/04	136.92	3184.15	---	---	---
	05/17/05	136.83	3184.24	---	---	---
	11/15/05	137.06	3184.01	---	---	---
	05/08/06	136.80	3184.27	---	---	---
	11/13/06	136.74	3184.33	---	---	---
	05/29/07	136.82	3184.25	---	---	---
	11/14/07	136.88	3184.19	---	---	---
	05/14/08	136.83	3184.24	---	---	---
	11/03/08	136.81	3184.26	---	---	---
	05/19/09	136.78	3184.29	---	---	---
	11/02/09	136.80	3184.27	---	---	---
	05/05/10	136.91	3184.16	---	---	---
	11/08/10	136.69	3184.38	---	---	---
	05/11/11	136.87	3184.20	---	---	---
	11/08/11	136.77	3184.30	---	---	---
	05/16/12	136.74	3184.33	---	---	---
	10/10/12	136.85	3184.22	---	---	---
	05/16/13	136.72	3184.35	---	---	---
	10/07/13	137.45	3183.62	---	---	---
	05/01/14	136.81	3184.26	---	---	---
	10/05/14	136.61	3184.46	---	---	---
	05/21/15	136.68	3184.39	---	---	---
	10/19/15	136.55	3184.52	---	---	---
	05/25/16	136.84	3184.23	---	---	---
	10/17/16	136.43	3184.64	---	---	---
	05/10/17	136.66	3184.41	---	---	---
3321.07	10/25/17	136.80	3184.27	---	---	---
	05/22/18	136.55	3184.52	---	---	---
	10/16/18	136.64	3184.43	---	---	---
	06/20/19	144.05	3177.02	176.71	---	---
	11/19/19	136.46	3184.61	139.98	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-6	05/18/98	136.73	3184.42	170.00	2.00	120-170
3321.15	05/25/99	136.61	3184.54	---	---	---
	02/08/01	136.50	3184.65	---	---	---
	05/10/02	136.40	3184.75	---	---	---
	10/22/02	136.57	3184.58	---	---	---
	05/20/03	136.85	3184.30	---	---	---
	11/24/03	136.38	3184.77	---	---	---
	05/11/04	136.41	3184.74	---	---	---
	11/15/04	136.08	3185.07	---	---	---
	05/17/05	136.58	3184.57	---	---	---
	11/15/05	136.82	3184.33	---	---	---
	05/08/06	136.58	3184.57	---	---	---
	11/13/06	136.49	3184.66	---	---	---
	05/29/07	136.61	3184.54	---	---	---
	11/15/07	136.59	3184.56	---	---	---
	05/14/08	136.58	3184.57	---	---	---
	11/03/08	136.52	3184.63	---	---	---
	05/19/09	136.52	3184.63	---	---	---
	11/02/09	136.51	3184.64	---	---	---
	05/05/10	136.53	3184.62	---	---	---
	11/08/10	136.40	3184.75	---	---	---
	05/11/11	Well Casing Damaged				
	11/08/11	Well Casing Damaged				
	05/16/12	Well Casing Damaged				
	10/10/12	Well Casing Damaged				
	09/30/13	Well Plugged and Abandoned				
MW-6R	10/07/13	136.17	3185.33	176.00	4.00	136-176
3321.50	05/01/14	136.25	3185.25	---	---	---
	10/05/14	136.40	3185.10	---	---	---
	05/21/15	136.13	3185.37	---	---	---
	10/19/15	136.20	3185.30	---	---	---
	05/25/16	136.27	3185.23	---	---	---
	10/17/16	135.96	3185.54	---	---	---
	05/10/17	136.07	3185.43	---	---	---
3323.04	10/25/17	136.20	3186.84	---	---	---
	05/22/18	136.03	3187.01	---	---	---
	10/17/18	136.09	3186.95	---	---	---
	06/20/19	---	---	---	---	---
	11/19/19	136.04	3187.00	187.37	---	---
MW-7	05/18/98	136.19	3182.20	166.00	2.00	151-166
3318.39	05/25/99	135.98	3182.41	---	---	---
	02/08/01	135.87	3182.52	---	---	---
	05/10/02	135.67	3182.72	---	---	---
	10/22/02	135.89	3182.50	---	---	---
	05/20/03	136.12	3182.27	---	---	---
	11/24/03	135.71	3182.68	---	---	---
	05/11/04	135.74	3182.65	---	---	---
	11/15/04	135.78	3182.61	---	---	---
	05/17/05	135.68	3182.71	---	---	---
	11/15/05	135.90	3182.49	---	---	---
	05/08/06	135.64	3182.75	---	---	---
	11/13/06	135.58	3182.81	---	---	---
	05/29/07	135.73	3182.66	---	---	---
	11/15/07	135.64	3182.75	---	---	---
	05/14/08	135.68	3182.71	---	---	---
	11/03/08	135.66	3182.73	---	---	---
	05/19/09	135.63	3182.76	---	---	---
	11/02/09	135.65	3182.74	---	---	---
	05/05/10	135.80	3182.59	---	---	---
	11/08/10	135.51	3182.88	---	---	---
	05/11/11	135.68	3182.71	---	---	---
	11/08/11	135.62	3182.77	---	---	---
	05/16/12	135.55	3182.84	---	---	---
	10/10/12	135.79	3182.60	---	---	---
	05/16/13	135.59	3182.80	---	---	---
	10/07/13	NS	NS	---	---	---
	05/01/14	135.65	3182.74	---	---	---
	10/05/14	135.58	3182.81	---	---	---
	05/21/15	135.52	3182.87	---	---	---
	10/19/15	135.54	3182.85	---	---	---
	05/25/16	135.75	3182.64	---	---	---
	10/17/16	135.35	3183.04	---	---	---
	05/10/17	135.39	3183.00	---	---	---
3320.19	10/24/17	135.38	3184.81	---	---	---
	05/22/18	135.39	3184.80	---	---	---
	10/15/18	135.59	3184.60	---	---	---
	06/20/19	135.48	3184.71	162.60	---	---
	11/20/19	135.50	3184.69	162.58	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-8	05/18/98	134.36	3182.78	170.00	2.00	155-170
3317.14	05/25/99	134.21	3182.93	---	---	---
	02/08/01	134.08	3183.06	---	---	---
	05/10/02	133.95	3183.19	---	---	---
	10/22/02	134.18	3182.96	---	---	---
	05/20/03	134.38	3182.76	---	---	---
	11/24/03	133.99	3183.15	---	---	---
	05/11/04	134.02	3183.12	---	---	---
	11/15/04	134.11	3183.03	---	---	---
	05/17/05	133.97	3183.17	---	---	---
	11/15/05	134.21	3182.93	---	---	---
	05/08/06	133.94	3183.20	---	---	---
	11/13/06	133.90	3183.24	---	---	---
	05/29/07	134.02	3183.12	---	---	---
	11/15/07	133.76	3183.38	---	---	---
	05/15/08	133.98	3183.16	---	---	---
	11/03/08	134.01	3183.13	---	---	---
	05/19/09	133.97	3183.17	---	---	---
	11/02/09	134.00	3183.14	---	---	---
	05/05/10	134.08	3183.06	---	---	---
	11/08/10	134.03	3183.11	---	---	---
	05/11/11	133.98	3183.16	---	---	---
	11/08/11	133.96	3183.18	---	---	---
	05/16/12	133.84	3183.30	---	---	---
	10/10/12	134.15	3182.99	---	---	---
	05/16/13	133.94	3183.20	---	---	---
	10/07/13	133.90	3183.24	---	---	---
	05/01/14	133.91	3183.23	---	---	---
	10/05/14	133.75	3183.39	---	---	---
	05/21/15	133.88	3183.26	---	---	---
	10/19/15	133.88	3183.26	---	---	---
	05/25/16	133.86	3183.28	---	---	---
	10/17/16	133.68	3183.46	---	---	---
	05/10/17	133.84	3183.30	---	---	---
3319.06	10/24/17	133.72	3185.34	---	---	---
	05/22/18	133.77	3185.29	---	---	---
	10/17/18	133.87	3185.19	---	---	---
	06/20/19	133.87	3185.19	146.85	---	---
	11/20/19	133.84	3185.22	146.92	---	---
MW-9	05/18/98	132.89	3179.90	164.00	2.00	149-164
3312.79	05/25/99	132.68	3180.11	---	---	---
	02/08/01	132.52	3180.27	---	---	---
	05/10/02	137.20	3175.59	---	---	---
	10/22/02	132.56	3180.23	---	---	---
	05/20/03	132.75	3180.04	---	---	---
	11/24/03	132.35	3180.44	---	---	---
	05/11/04	132.39	3180.40	---	---	---
	11/15/04	132.43	3180.36	---	---	---
	05/17/05	132.26	3180.53	---	---	---
	11/15/05	132.60	3180.19	---	---	---
	05/08/06	132.26	3180.53	---	---	---
	11/13/06	132.19	3180.60	---	---	---
	05/29/07	132.32	3180.47	---	---	---
	11/14/07	132.34	3180.45	---	---	---
	05/15/08	132.29	3180.50	---	---	---
	11/03/08	132.33	3180.46	---	---	---
	05/19/09	132.21	3180.58	---	---	---
	11/02/09	132.35	3180.44	---	---	---
	05/05/10	132.41	3180.38	---	---	---
	11/08/10	132.10	3180.69	---	---	---
	05/11/11	132.22	3180.57	---	---	---
	11/08/11	132.19	3180.60	---	---	---
	05/16/12	132.05	3180.74	---	---	---
	10/10/12	132.32	3180.47	---	---	---
	05/16/13	132.08	3180.71	---	---	---
	10/07/13	131.94	3180.85	---	---	---
	05/01/14	Not Measured - Obstruction In Well				
	10/05/14	131.95	3180.84	---	---	---
	05/21/15	132.05	3180.74	---	---	---
	10/19/15	132.01	3180.78	---	---	---
	05/25/16	131.98	3180.81	---	---	---
	10/17/16	131.91	3180.88	---	---	---
	05/10/17	131.95	3180.84	---	---	---
3314.68	10/24/17	131.92	3182.76	---	---	---
	05/22/18	131.90	3182.78	---	---	---
	10/17/18	131.98	3182.70	---	---	---
	06/20/19	131.95	3182.73	161.46	---	---
	11/20/19	131.86	3182.82	162.00	---	---

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Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-9A	05/18/98	132.65	3179.91	142.00	2.00	127-142
3312.56	05/25/99	132.43	3180.13	---	---	---
	02/08/01	132.37	3180.19	---	---	---
	05/10/02	137.20	3175.36	---	---	---
	10/22/02	132.35	3180.21	---	---	---
	05/20/03	132.55	3180.01	---	---	---
	11/24/03	132.10	3180.46	---	---	---
	05/11/04	132.14	3180.42	---	---	---
	11/15/04	132.19	3180.37	---	---	---
	05/17/05	132.06	3180.50	---	---	---
	11/15/05	132.35	3180.21	---	---	---
	05/08/06	132.02	3180.54	---	---	---
	11/13/06	131.09	3181.47	---	---	---
	05/29/07	132.08	3180.48	---	---	---
	11/14/07	132.06	3180.50	---	---	---
	05/15/08	132.03	3180.53	---	---	---
	11/03/08	131.98	3180.58	---	---	---
	05/19/09	132.00	3180.56	---	---	---
	11/02/09	131.90	3180.66	---	---	---
	05/05/10	131.96	3180.60	---	---	---
	11/08/10	131.85	3180.71	---	---	---
	05/11/11	132.06	3180.50	---	---	---
	11/08/11	131.95	3180.61	---	---	---
	05/16/12	131.81	3180.75	---	---	---
	10/10/12	132.09	3180.47	---	---	---
	05/16/13	131.88	3180.68	---	---	---
	10/07/13	131.90	3180.66	---	---	---
	05/01/14	Not Measured - Obstruction In Well				
	10/05/14	Not Measured - Obstruction In Well				
	05/21/15	Not Measured - Obstruction In Well				
	10/19/15	131.68	3180.88	---	---	---
	05/25/16	131.73	3180.83	---	---	---
	10/17/16	131.62	3180.94	---	---	---
	05/10/17	131.68	3180.88	---	---	---
3314.48	10/24/17	131.60	3182.88	---	---	---
	05/22/18	131.81	3182.67	---	---	---
	10/17/18	131.72	3182.76	---	---	---
	06/20/19	131.69	3182.79	141.72	---	---
	11/20/19	131.63	3182.85	145.66	---	---
MW-10	05/18/98	137.18	3182.12	166.00	2.00	151-166
3319.30	05/25/99	137.04	3182.26	---	---	---
	02/08/01	136.88	3182.42	---	---	---
	05/10/02	136.80	3182.50	---	---	---
	10/22/02	136.91	3182.39	---	---	---
	05/20/03	137.13	3182.17	---	---	---
	11/24/03	136.71	3182.59	---	---	---
	05/11/04	136.77	3182.53	---	---	---
	11/15/04	136.82	3182.48	---	---	---
	05/17/05	136.34	3182.96	---	---	---
	11/15/05	136.95	3182.35	---	---	---
	05/08/06	136.65	3182.65	---	---	---
	11/13/06	136.59	3182.71	---	---	---
	05/29/07	136.68	3182.62	---	---	---
	11/15/07	136.61	3182.69	---	---	---
	05/15/08	136.65	3182.65	---	---	---
	11/03/08	136.60	3182.70	---	---	---
	05/19/09	136.60	3182.70	---	---	---
	11/02/09	136.60	3182.70	---	---	---
	05/05/10	136.44	3182.86	---	---	---
	11/08/10	136.58	3182.72	---	---	---
	05/11/11	136.62	3182.68	---	---	---
	11/08/11	136.57	3182.73	---	---	---
	05/16/12	136.44	3182.86	---	---	---
	10/10/12	136.91	3182.39	---	---	---
	05/16/13	136.51	3182.79	---	---	---
	10/07/13	136.55	3182.75	---	---	---
	05/01/14	136.37	3182.93	---	---	---
	10/05/14	136.42	3182.88	---	---	---
	05/21/15	136.40	3182.90	---	---	---
	10/19/15	136.41	3182.89	---	---	---
	05/25/16	136.40	3182.90	---	---	---
	10/17/16	136.33	3182.97	---	---	---
	05/10/17	136.34	3182.96	---	---	---
3321.12	10/24/17	136.28	3184.84	---	---	---
	05/22/18	130.07	3191.05	---	---	---
	10/15/18	136.34	3184.78	---	---	---
	06/20/19	136.28	3184.84	160.72	---	---
	11/20/19	136.36	3184.76	160.71	---	---

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Cooper-Jal Unit South Injection Station
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Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-11	03/23/99	131.12	3178.57	140.00	4.00	125-140
3309.69	05/25/99	130.91	3178.78	---	---	---
	02/08/01	130.11	3179.58	---	---	---
	05/10/02	135.60	3174.09	---	---	---
	10/22/02	130.76	3178.93	---	---	---
	05/20/03	131.03	3178.66	---	---	---
	11/24/03	130.57	3179.12	---	---	---
	05/11/04	130.61	3179.08	---	---	---
	11/15/04	130.65	3179.04	---	---	---
	05/17/05	131.56	3178.13	---	---	---
	11/15/05	130.70	3178.99	---	---	---
	05/08/06	130.41	3179.28	---	---	---
	11/13/06	130.42	3179.27	---	---	---
	05/29/07	130.52	3179.17	---	---	---
	11/14/07	130.42	3179.27	---	---	---
	05/15/08	130.46	3179.23	---	---	---
	11/03/08	130.41	3179.28	---	---	---
	05/19/09	130.40	3179.29	---	---	---
	11/02/09	130.40	3179.29	---	---	---
	05/05/10	130.43	3179.26	---	---	---
	11/08/10	130.28	3179.41	---	---	---
	05/11/11	130.40	3179.29	---	---	---
	11/08/11	130.37	3179.32	---	---	---
	05/16/12	130.23	3179.46	---	---	---
	10/10/12	130.49	3179.20	---	---	---
	05/16/13	130.27	3179.42	---	---	---
	10/07/13	130.12	3179.57	---	---	---
	05/01/14	130.21	3179.48	---	---	---
	10/05/14	130.16	3179.53	---	---	---
	05/21/15	130.17	3179.52	---	---	---
	10/19/15	130.20	3179.49	---	---	---
	05/25/16	130.17	3179.52	---	---	---
	10/17/16	130.02	3179.67	---	---	---
	05/10/17	130.09	3179.60	---	---	---
3311.56	10/24/17	130.14	3181.42	---	---	---
	05/22/18	130.07	3181.49	---	---	---
	10/17/18	130.09	3181.47	---	---	---
	06/20/19	130.13	3181.43	165.71	---	---
	11/20/19	130.04	3181.52	172.30	---	---
MW-12*	05/10/02	139.57	3188.86	171.65	4.00	157-172
3328.43	10/22/02	139.73	3188.70	---	---	---
	05/20/03	139.72	3188.71	---	---	---
	11/24/03	139.69	3188.74	---	---	---
	05/11/04	139.64	3188.79	---	---	---
	11/15/04	139.68	3188.75	---	---	---
	05/17/05	139.58	3188.85	---	---	---
	11/15/05	139.83	3188.60	---	---	---
	05/08/06	139.55	3188.88	---	---	---
	11/13/06	139.53	3188.90	---	---	---
	05/29/07	139.65	3188.78	---	---	---
	11/16/07	139.05	3189.38	---	---	---
	05/14/08	139.69	3188.74	---	---	---
	11/03/08	139.61	3188.82	---	---	---
	05/19/09	139.59	3188.84	---	---	---
	11/02/09	139.62	3188.81	---	---	---
	05/05/10	139.66	3188.77	---	---	---
	11/08/10	139.55	3188.88	---	---	---
	05/11/11	139.04	3189.39	---	---	---
	11/08/11	139.68	3188.75	---	---	---
	05/16/12	139.65	3188.78	---	---	---
	10/10/12	139.95	3188.48	---	---	---
	05/16/13	139.67	3188.76	---	---	---
	10/07/13	139.50	3188.93	---	---	---
	05/01/14	139.58	3188.85	---	---	---
	10/05/14	139.56	3188.87	---	---	---
	05/21/15	139.65	3188.78	---	---	---
	10/19/15	139.65	3188.78	---	---	---
	05/25/16	139.71	3188.72	---	---	---
	10/17/16	139.45	3188.98	---	---	---
	05/10/17	139.61	3188.82	---	---	---
3330.33	10/24/17	139.72	3190.61	---	---	---
	05/22/18	139.59	3190.74	---	---	---
	10/17/18	139.68	3190.65	---	---	---
	06/20/19	139.72	3190.61	171.02	---	---
	11/20/19	139.65	3190.68	174.57	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
MW-13*	05/10/02	144.45	3194.04	171.65	4.00	157-172
3338.49	10/22/02	144.49	3194.00	---	---	---
	05/20/03	144.90	3193.59	---	---	---
	11/24/03	144.37	3194.12	---	---	---
	05/11/04	144.47	3194.02	---	---	---
	11/15/04	144.56	3193.93	---	---	---
	05/17/05	144.36	3194.13	---	---	---
	11/15/05	144.60	3193.89	---	---	---
	05/08/06	144.29	3194.20	---	---	---
	11/13/06	144.38	3194.11	---	---	---
	05/29/07	144.54	3193.95	---	---	---
	11/16/07	144.54	3193.95	---	---	---
	05/14/08	144.45	3194.04	---	---	---
	11/03/08	144.36	3194.13	---	---	---
	05/19/09	144.51	3193.98	---	---	---
	11/02/09	144.35	3194.14	---	---	---
	05/05/10	144.39	3194.10	---	---	---
	11/08/10	144.40	3194.09	---	---	---
	05/11/11	144.60	3193.89	---	---	---
	11/08/11	144.74	3193.75	---	---	---
	05/16/12	144.70	3193.79	---	---	---
	10/10/12	144.82	3193.67	---	---	---
	05/16/13	144.70	3193.79	---	---	---
	10/07/13	144.60	3193.89	---	---	---
	05/01/14	144.53	3193.96	---	---	---
	10/05/14	144.70	3193.79	---	---	---
	05/21/15	144.78	3193.71	---	---	---
	10/19/15	144.75	3193.74	---	---	---
	05/25/16	144.87	3193.62	---	---	---
	10/17/16	144.54	3193.95	---	---	---
	05/10/17	144.66	3193.83	---	---	---
	07/11/17	Well Plugged and Abandoned				
MW-14	10/07/13	134.60	3182.24	171.50	4.00	131-171
3316.84	05/01/14	134.51	3182.33	---	---	---
	10/05/14	134.44	3182.40	---	---	---
	05/21/15	134.31	3182.53	---	---	---
	10/19/15	134.49	3182.35	---	---	---
	05/25/16	134.42	3182.42	---	---	---
	10/17/16	134.30	3182.54	---	---	---
	05/10/17	134.35	3182.49	---	---	---
3318.36	10/24/17	134.30	3184.06	---	---	---
	05/22/18	134.32	3184.04	---	---	---
	10/15/18	134.41	3183.95	---	---	---
	06/20/19	134.78	3183.58	178.74	---	---
	11/20/19	130.48	3187.88	178.42		
RW-1	05/21/99	134.32	3184.18	175.00	5.00	130-174
3318.50	05/25/99	134.24	3184.26	---	---	---
	02/08/01	134.15	3184.35	---	---	---
	05/10/02	134.00	3184.50	---	---	---
	10/22/02	134.17	3184.33	---	---	---
	05/20/03	134.40	3184.10	---	---	---
	11/24/03	134.02	3184.48	---	---	---
	05/11/04	134.01	3184.49	---	---	---
	11/15/04	134.06	3184.44	---	---	---
	05/17/05	133.97	3184.53	---	---	---
	11/15/05	134.20	3184.30	---	---	---
	05/08/06	133.93	3184.57	---	---	---
	11/13/06	133.92	3184.58	---	---	---
	05/29/07	134.00	3184.50	---	---	---
	11/15/07	133.88	3184.62	---	---	---
	05/14/08	133.98	3184.52	---	---	---
	11/03/08	133.99	3184.51	---	---	---
	05/19/09	133.92	3184.58	---	---	---
	11/02/09	134.00	3184.50	---	---	---
	05/05/10	134.03	3184.47	---	---	---
	11/08/10	133.81	3184.69	---	---	---
	05/11/11	133.83	3184.67	---	---	---
	11/08/11	133.88	3184.62	---	---	---
	05/16/12	133.84	3184.66	---	---	---
	10/10/12	135.01	3183.49	---	---	---
	05/16/13	133.85	3184.65	---	---	---
	10/07/13	133.68	3184.82	---	---	---
	05/01/14	133.91	3184.59	---	---	---
	10/05/14	133.64	3184.86	---	---	---
	05/21/15	133.73	3184.77	---	---	---
	10/19/15	133.73	3184.77	---	---	---
	05/25/16	133.73	3184.77	---	---	---
	10/17/16	133.80	3184.70	---	---	---
	05/10/17	133.67	3184.83	---	---	---
3320.31	10/25/17	133.80	3186.51	---	---	---
	05/22/18	133.61	3186.70	---	---	---
	10/16/18	133.76	3186.55	---	---	---
	06/20/19	133.64	3186.67	164.03	---	---
	11/20/19	133.63	3186.68	163.79	---	---

Appendix E
Cumulative Summary of Potentiometric Elevation Data
Cooper-Jal Unit South Injection Station
Lea County, New Mexico

ARCADIS Design & Consultancy for natural and built assets

Well ID TOC Elevation (ft MSL)	Collection Date	Depth to Groundwater (ft below TOC)	Groundwater Elevation (ft MSL)	Constructed Depth (ft below TOC)	Casing Diameter (in)	Well Screen Interval (ft bgs)
RW-2	02/08/01	135.58	3183.04	160.00	5.00	134-173
3318.62	05/10/02	135.55	3183.07	---	---	---
	10/22/02	135.55	3183.07	---	---	---
	05/20/03	135.58	3183.04	---	---	---
	11/24/03	135.54	3183.08	---	---	---
	05/11/04	135.48	3183.14	---	---	---
	11/15/04	135.43	3183.19	---	---	---
	05/17/05	135.46	3183.16	---	---	---
	11/15/05	135.65	3182.97	---	---	---
	05/08/06	135.42	3183.20	---	---	---
	11/13/06	135.47	3183.15	---	---	---
	05/29/07	135.54	3183.08	---	---	---
	11/15/07	135.48	3183.14	---	---	---
	05/14/08	135.48	3183.14	---	---	---
	11/03/08	135.44	3183.18	---	---	---
	05/19/09	135.44	3183.18	---	---	---
	11/02/09	135.45	3183.17	---	---	---
	05/05/10	135.47	3183.15	---	---	---
	11/08/10	135.30	3183.32	---	---	---
	05/11/11	135.55	3183.07	---	---	---
	11/08/11	135.46	3183.16	---	---	---
	05/16/12	135.40	3183.22	---	---	---
	10/10/12	135.49	3183.13	---	---	---
	05/16/13	135.33	3183.29	---	---	---
	05/01/14	135.40	3183.22	---	---	---
	10/05/14	135.29	3183.33	---	---	---
	05/21/15	135.28	3183.34	---	---	---
	10/19/15	135.32	3183.30	---	---	---
	05/25/16	135.21	3183.41	---	---	---
	10/17/16	135.15	3183.47	---	---	---
	05/10/17	135.14	3183.48	---	---	---
3320.42	10/25/17	135.30	3185.12	---	---	---
	05/22/18	135.12	3185.30	---	---	---
	10/15/18	135.21	3185.21	---	---	---
	06/20/19	135.23	3185.19	156.50	---	---
	11/19/19	135.08	3185.34	172.60	---	---
RW-2R	10/07/13	135.43	3183.19	173.00	6.00	133-173
3320.68	10/07/13	136.94	3183.74	---	---	---
	05/01/14	137.05	3183.63	---	---	---
	10/05/14	136.85	3183.83	---	---	---
	05/21/15	136.85	3183.83	---	---	---
	10/19/15	136.92	3183.76	---	---	---
	05/25/16	136.89	3183.79	---	---	---
	10/17/16	136.75	3183.93	---	---	---
	05/10/17	136.77	3183.91	---	---	---
3320.68	10/25/17	137.00	3183.68	---	---	---
	05/22/18	136.76	3183.92	---	---	---
	10/15/18	136.87	3183.81	---	---	---
	06/20/19	136.79	3183.89	176.82	---	---
	11/19/19	136.71	3183.97	188.97	---	---
RW-6R	10/07/13	135.43	3183.19	173.00	6.00	133-173

Notes:
1. TOC - Top of Casing
2. ft bgs - feet below ground surface
3. in - inches
4. NS - Not sampled
5. A - Indicates groundwater monitor well installed in shallow Uppermost Groundwater Bearing Unit.
6. MSL - Mean Sea Level
7. * - Indicates groundwater monitor well installed off-Site and upgradient of plume.

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
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Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator:	OGRID:
Arcadis U.S., Inc 630 Plaza Drive Highlands Ranch, CO 80129	329073
	Action Number: 4683
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bbillings	None	9/13/2021