ENSOLUM

March 25, 2024

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2023 Annual Groundwater Monitoring Report
Farmington B Com #1E
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NAUTOFAB000168
NMOCD Administrative Order: 3R-084

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *2023 Annual Groundwater Monitoring Report* to the New Mexico Oil Conservation Division (NMOCD) to document groundwater monitoring activities conducted at the Farmington B Com #1E natural gas production well (Site) during 2023. The Site is located on private property near the corner of East Murray Drive and South Carlton Avenue in Farmington, New Mexico. Geographical coordinates for the Site are 36.72113° North and 108.19048° West (Figure 1). Currently, there are six monitoring wells on-Site that are gauged and sampled quarterly. Well locations and general Site features are presented on Figure 2.

Review of the 2023 Annual Groundwater Monitoring Report for Farmington B Com #1E: Content Satisfactory
1. Quarterly sampling may be suspended in MW-4 and MW-5 as COCs have been well below allowable concentrations.
2. Sampling frequency may be reduced to an annual basis in wells MW-1, MW-2, MW-3 and MW-6 until allowable concentrations per the WQCC are conveyed.
3. Continue to sample for iron in MW-1, the remaining wells may have iron removed as an analyte.
4. Submit the 2024 Annual Report to OCD by April of 2025.

SITE BACKGROUND

Conoco Inc., predecessor to ConocoPhillips Company (ConocoPhillips), owned the property and operated the Site between July 1991 and January 1997. Merrion Oil & Gas Company (Merrion) purchased the property and assets from ConocoPhillips in 1997 and is the current property owner and well operator.

Petroleum hydrocarbon-impacted soil was first discovered in March 1997 when a Phase II Environmental Site Assessment was performed at the Site prior to the transfer from ConocoPhillips to Merrion. Soil impacts were confirmed north of a production storage tank and west of a separator/dehydrator pit. Soil excavation of two impacted areas occurred in September 1997 and approximately 906 cubic yards of impacted soil was removed from the Site. During backfill of the excavation, approximately 10 gallons of liquid fertilizer was sprayed into both excavations to enhance in-situ biodegradation of residual petroleum hydrocarbons.

Groundwater monitoring wells MW-1 through MW-6 were installed at the Site in February and August 1998. Petroleum hydrocarbon impacts were not present in wells MW-2 through MW-6 during in the 1998 and 1999 sampling events; however, phase-separated hydrocarbon (PSH) was present in well MW-1 since its installation. Active and passive skimmers were installed in MW-1 in May 2004 to enhance recovery of PSH but were found to be ineffective. It was determined an active skimmer was not a viable method of PSH recovery in MW-1 and passive skimming or

periodic hand bailing was then proposed. Additionally, quarterly groundwater pumping events were conducted at MW-1 from October 2004 to March 2008 using a vacuum truck. PSH was last detected in monitoring well on March 18, 2011. A sheen of PSH was last measured on January 28, 2015.

By the fourth quarter of 2011, groundwater analytical results from all six monitoring wells indicated benzene, toluene, ethylbenzene, and total xylenes (BTEX) concentrations were below New Mexico Water Quality Control Commission (NMWQCC) standards for 12 consecutive quarters of sampling and as a result, BTEX analysis was discontinued following the December 2011 sampling event. Beginning in 2012, groundwater was sampled for dissolved iron and manganese, which are the two remaining constituents of concern (COCs) exceeding the NMWQCC standards at the Site. In order to reduce dissolved iron and manganese concentrations, two injection wells (TW-1 and TW-2) were drilled and installed east and west of MW-1 in order to perform in-situ chemical oxidation (ISCO) injections. A catalyzed sodium persulfate solution was injected into these wells and into MW-1 in November 2014, March 2015, and October 2016. Quarterly gauging and sampling for dissolved iron and manganese continued after the ISCO injections were completed.

SITE GROUNDWATER CLEANUP STANDARDS

The NMOCD requires groundwater quality standards be met as presented by the NMWQCC and listed in Title 20, Chapter 6, Part 2, Section 3103 (20.6.2.3103) of the New Mexico Administrative Code (NMAC). The following standards are presented for COCs at the Site in milligrams per liter (mg/L).

- Dissolved Iron: 1.0 mg/L
- Dissolved Manganese: 0.2 mg/L

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

Quarterly groundwater sampling events were conducted in January, June, July, and October 2023 from wells MW-1 through MW-6. Prior to the collection of groundwater samples, depth-to-groundwater was measured in all Site wells using a Keck oil/water interface probe. The interface probe was decontaminated with Alconox™ soap and rinsed with distilled water prior to each measurement to prevent cross-contamination. Measured depths-to-groundwater and calculated groundwater elevations are presented in Table 1 and were used to develop groundwater potentiometric surface maps for each quarterly sampling event (Figures 3, 4, 5, and 6). The inferred groundwater flow direction is to the west.

GROUNDWATER SAMPLING

Groundwater from each monitoring well was purged and sampled using a disposable bailer. Purging was accomplished by removing stagnant groundwater from the monitoring well prior to collecting a sample. Field measurements of groundwater quality parameters were collected during the purging process and are presented in Table 2. Following well purging, groundwater samples were collected directly into laboratory-provided containers and labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. Samples were immediately sealed and packed on ice to preserve samples. Samples were submitted to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico for analysis of dissolved manganese and iron following Environmental Protection Agency (EPA) Method 200.7. Proper chain-of-custody procedures were followed documenting the date and time sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature.

GROUNDWATER ANALYTICAL RESULTS

Dissolved iron concentrations were in compliance with the NMWQCC standard in all the Site wells during the 2023 quarterly sampling events.

Dissolved manganese concentrations exceeding the NMWQCC standard were detected in wells MW-1, MW-2, and MW-6 during one or more quarterly sampling events in 2023. Dissolved manganese concentrations in wells MW-1 and MW-6 have been consistently elevated since sampling began in 2011; however, dissolved manganese concentrations in well MW-2 have been in compliance with the NMWQCC standard since sampling began with only one exceedance in June 2023.

Concentrations of dissolved iron and manganese in wells MW-4, and MW-5 have been in compliance with NMWQCC standards for the past eight quarters. Dissolved manganese concentrations in MW-3 were compliant with the NMWQCC standard during 2023. MW-3 only has had occasional exceedances in previous years including 2013, 2016, 2017, 2019, and 2022. A summary of analytical results is presented in Table 3 and is depicted on Figure 7, with complete laboratory analytical reports included as Appendix A.

CONCLUSIONS AND RECOMMENDATIONS

Based on historical data, the presence of dissolved iron has decreased over time and analytical results indicate iron concentrations are no longer present at the Site at concentrations exceeding the NMWQCC standard.

Dissolved manganese concentrations in wells MW-1 and MW-6 have remained relatively stable over the last several years. Elevated dissolved manganese concentrations appear to be a result of generally low oxygen and reducing groundwater conditions in these wells. As groundwater conditions at the Site continue to equilibrate and dissolved oxygen increases, groundwater conditions will become increasingly aerobic. As this happens, dissolved manganese will likely precipitate out of solution resulting in decreased concentrations in groundwater.

Based on current and historical data gathered at the Site, Ensolum and Hilcorp recommend the following actions:

- Cease sampling at wells MW-4, and MW-5. All COC concentrations have been compliant with NMWQCC standards for more than eight consecutive quarters.
- Eliminate dissolved iron as a contaminant of concern in all wells.
- Reduce the frequency of gauging and sampling to an annual at wells MW-1, MW-2, MW-3, and MW-6 for dissolved manganese. Once concentrations decrease to below NMWQCC standards, sampling frequency will again increase to quarterly until eight consecutive quarters indicate that iron and/or manganese concentrations are compliant with applicable standards.

Ensolum appreciates the opportunity to provide these environmental services to Hilcorp. Please contact either of the undersigned with any questions.

Sincerely,

Ensolum, LLC

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Senior Managing Geologist
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Attachments:

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	Q1 2023 Groundwater Elevation Contour Map
Figure 4	Q2 2023 Groundwater Elevation Contour Map
Figure 5	Q3 2023 Groundwater Elevation Contour Map
Figure 6	Q4 2023 Groundwater Elevation Contour Map
Figure 7	2023 Groundwater Analytical Results
Table 1	Groundwater Elevations
Table 2	Groundwater Quality Measurements
Table 3	Groundwater Analytical Results
Appendix A	Laboratory Analytical Reports

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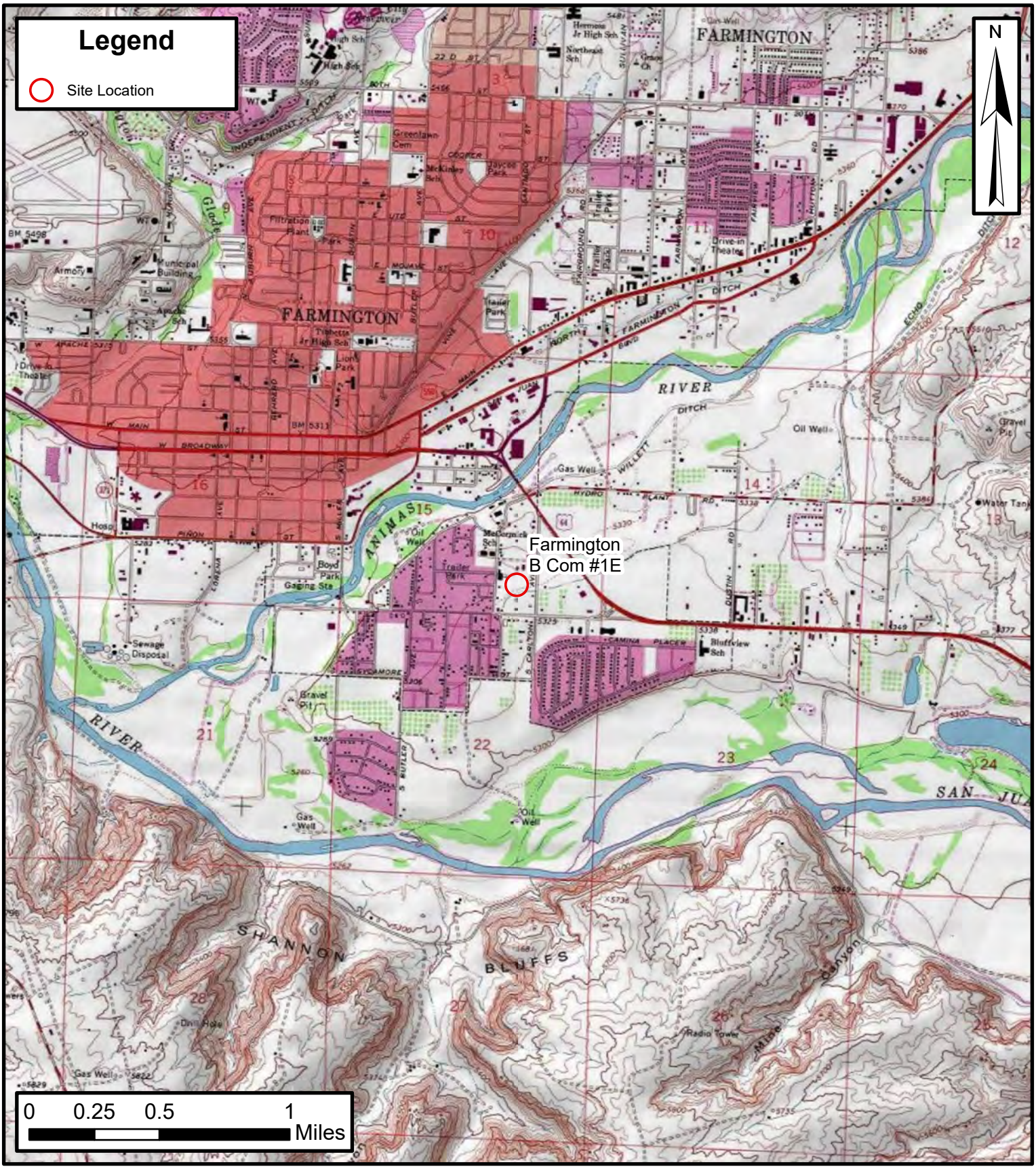
FIGURES



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Environmental, Engineering and Hydrogeologic Consultants

Site Location Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
1

Sources: Environmental Systems Research Institute (ESRI), National Geographic Society, i-cubed

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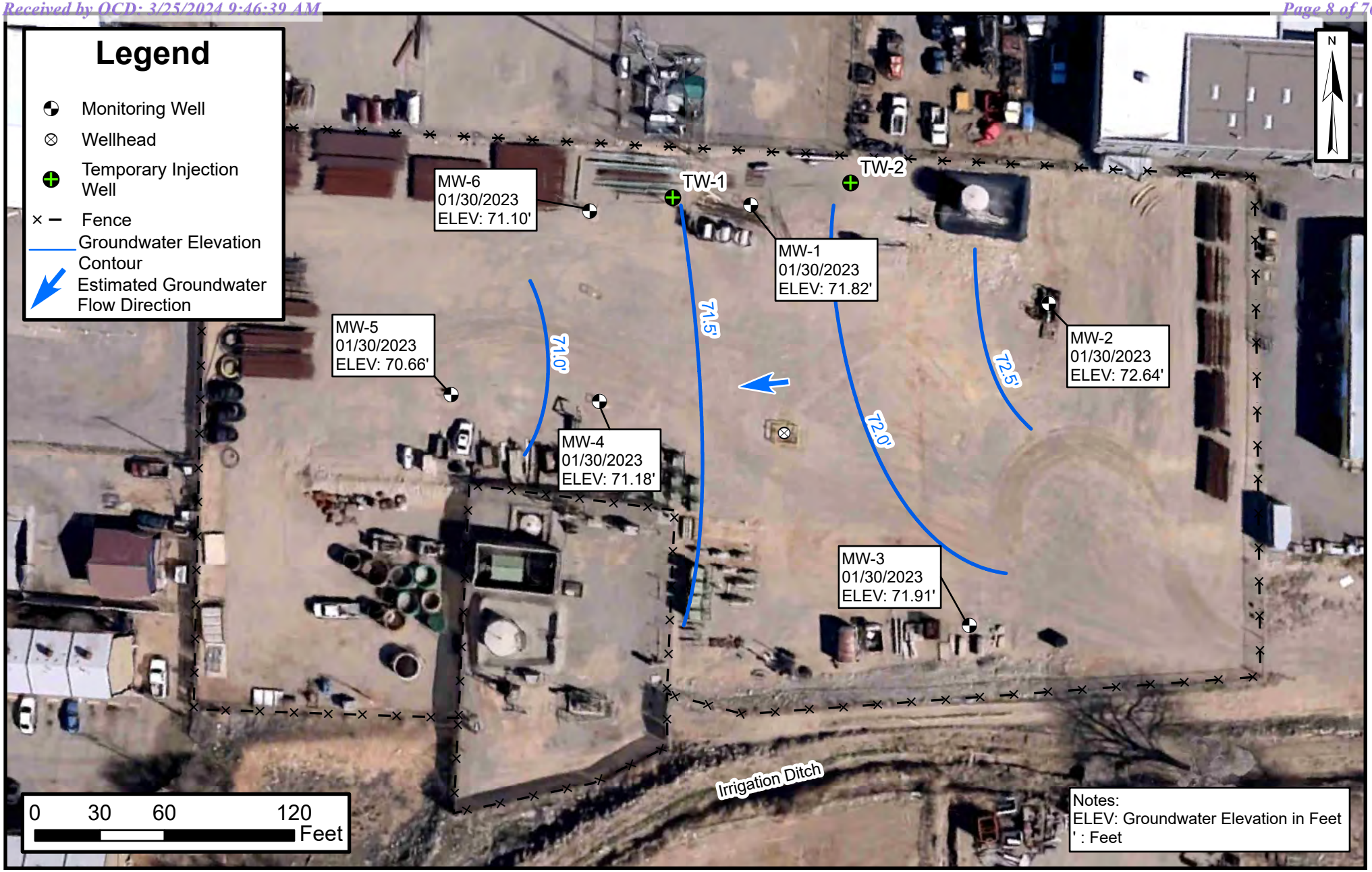
Site Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth



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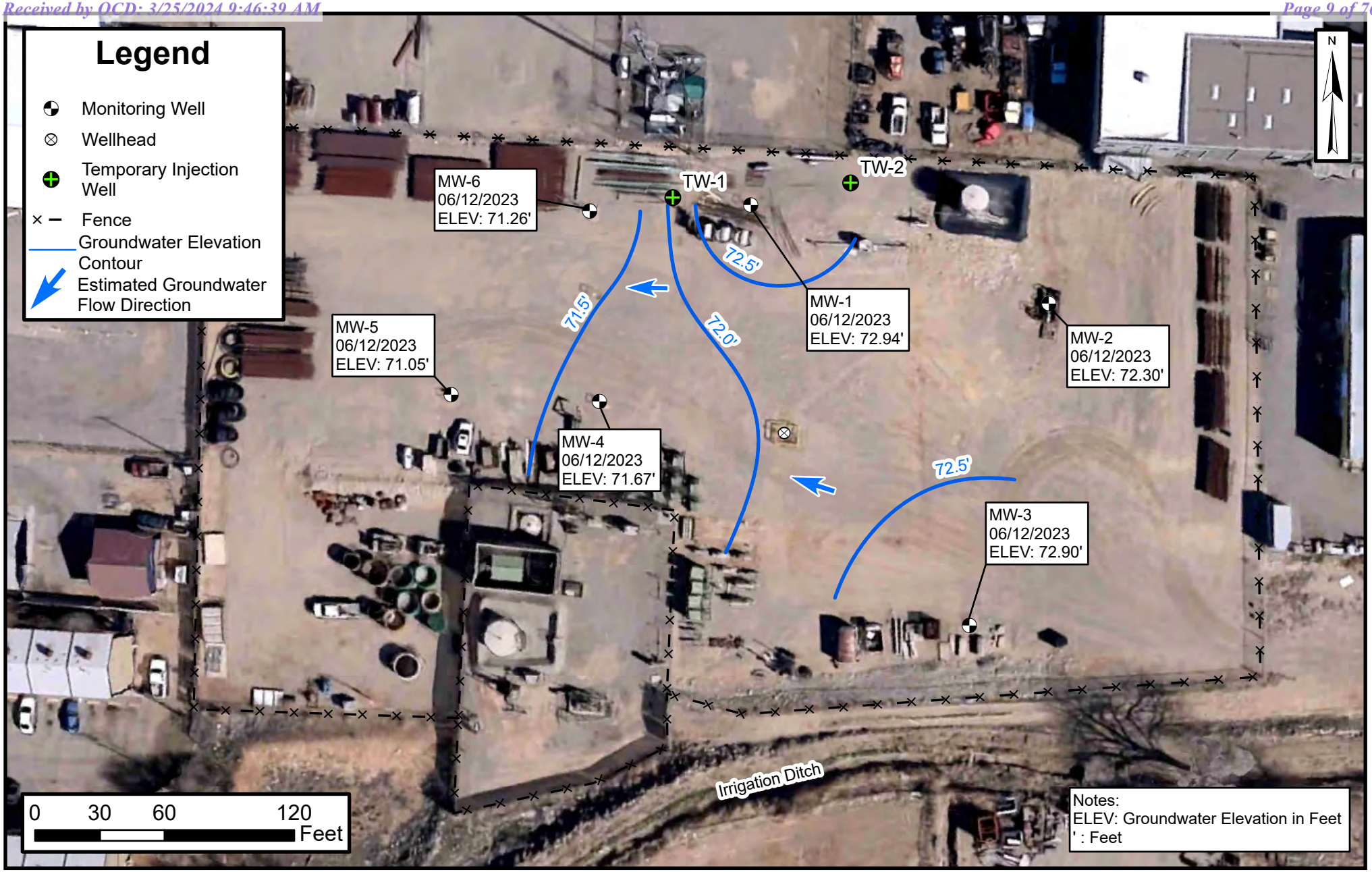
Q1 2023 Groundwater Elevation Contour Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth



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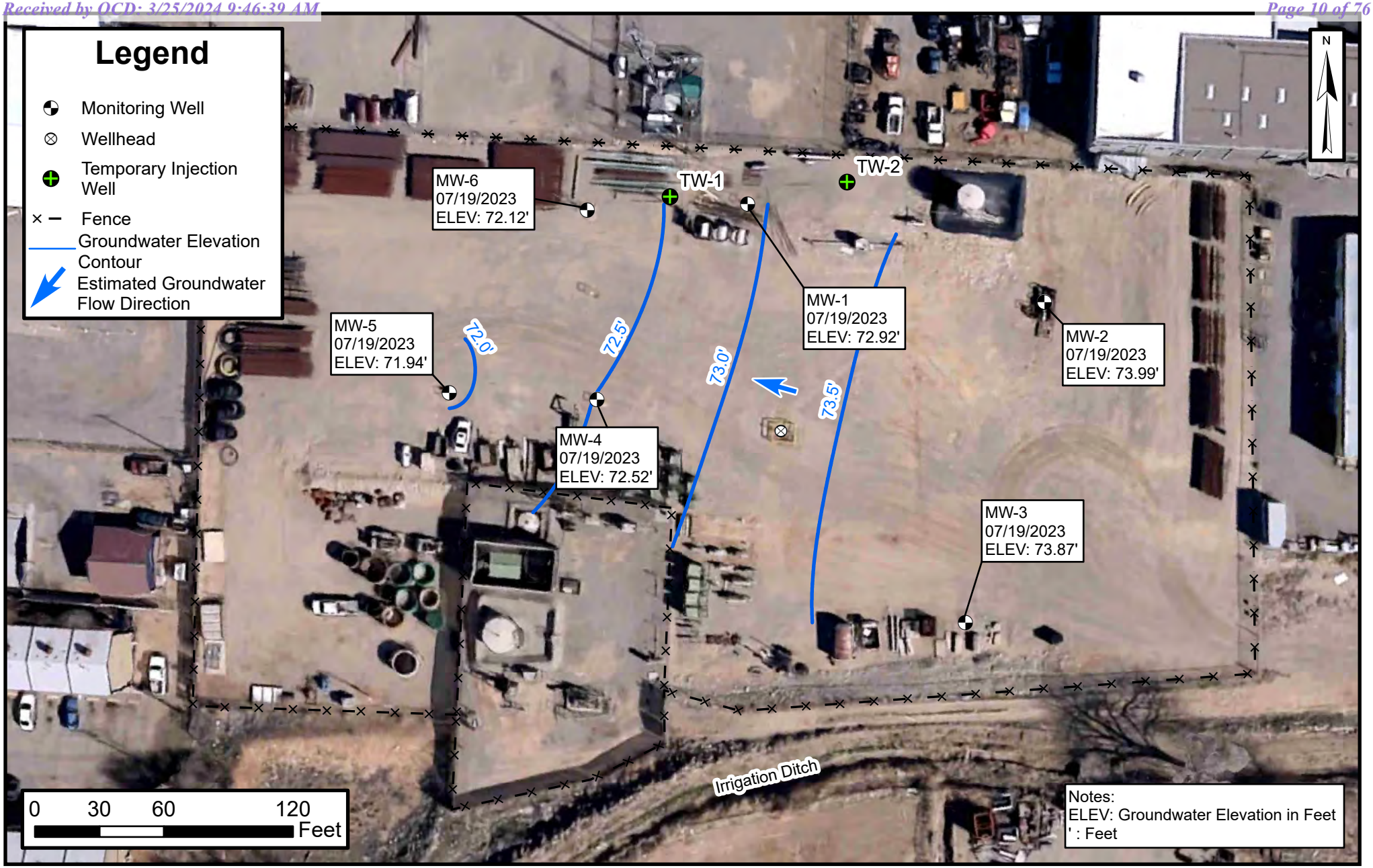
Q2 2023 Groundwater Elevation Contour Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
4

Sources: Google Earth



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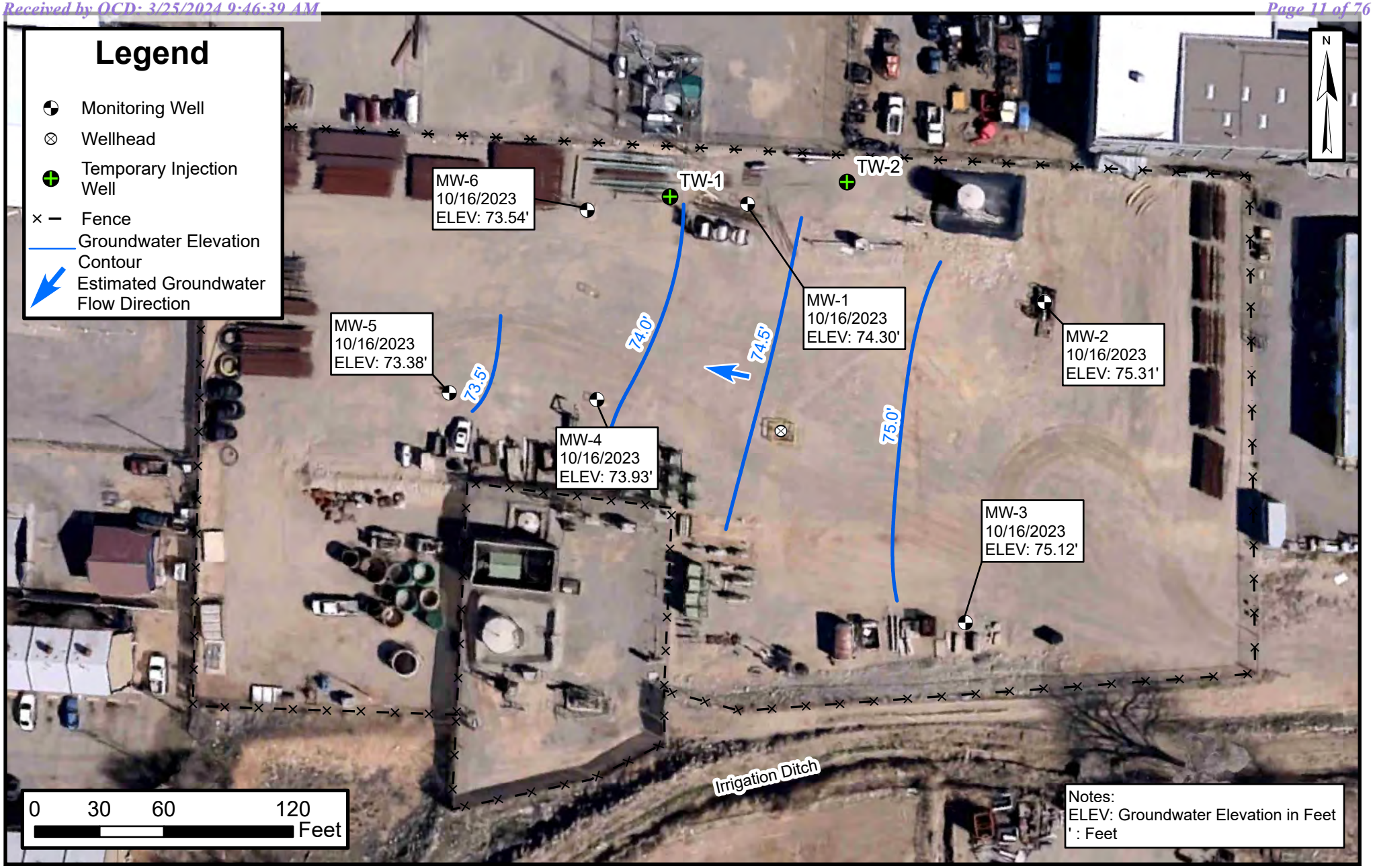
Q3 2023 Groundwater Elevation Contour Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
5

Sources: Google Earth



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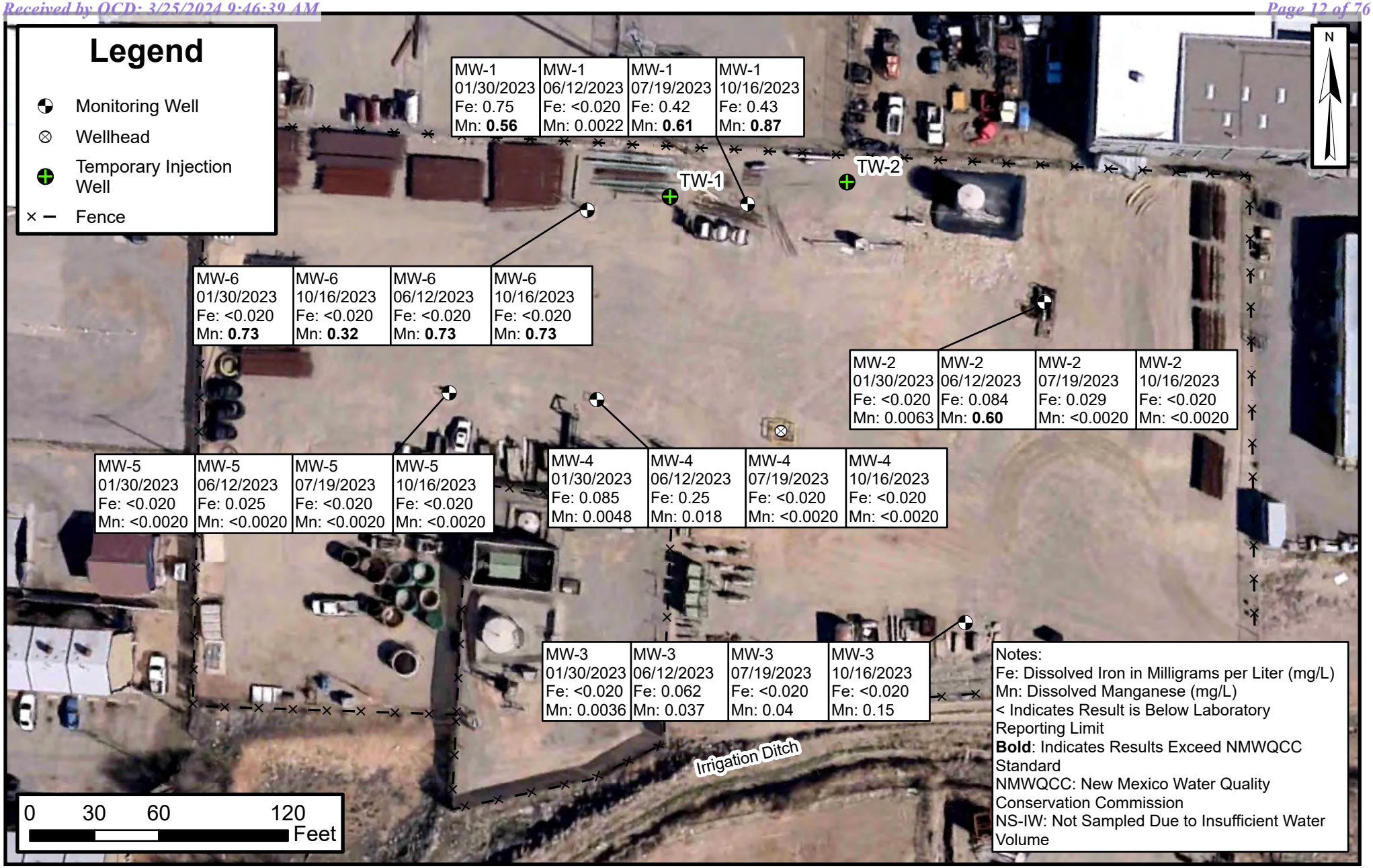
Q4 2023 Groundwater Elevation Contour Map

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
6

Sources: Google Earth



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2023 Groundwater Analytical Results

Farmington B Com #1E
Hilcorp Energy Company
36.72113, -108.19048
San Juan County, New Mexico

FIGURE
7

Sources: Google Earth

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TABLES

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TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-1	101.37	5/9/2005	Sheen	28.30	--	73.07
		7/6/2005	--	26.50	--	74.87
		10/19/2005	Sheen	25.12	--	76.25
		2/16/2006	--	28.23	--	73.14
		5/15/2006	--	27.02	--	74.35
		8/2/2006	--	24.37	--	77.00
		11/14/2006	Sheen	26.48	--	74.89
		2/20/2007	Sheen	29.03	--	72.34
		5/15/2007	--	26.97	--	74.40
		8/21/2007	Sheen	25.20	--	76.17
		11/7/2007	26.10	26.30	0.20	75.23
		1/16/2008	27.88	29.24	1.36	73.22
		3/18/2008	Sheen	29.27	--	72.10
		7/24/2008	Sheen	25.73	--	75.64
		10/22/2008	Sheen	25.35	--	76.02
		1/21/2009	27.90	28.25	0.35	73.40
		4/1/2009	--	29.47	--	71.90
		6/10/2009	--	26.75	--	74.62
		10/1/2009	--	23.14	--	78.23
		12/17/2009	--	26.31	--	75.06
		3/29/2010	28.68	28.71	0.03	72.68
		6/11/2010	Sheen	25.98	--	75.39
		9/24/2010	Sheen	25.26	--	76.11
		2/7/2011	Sheen	28.83	--	72.54
		3/18/2011	29.71	29.73	0.02	71.66
		6/20/2011	Sheen	27.00	--	74.37
		9/30/2011	Sheen	24.32	--	77.05
		12/15/2011	Sheen	26.90	--	74.47
		9/21/2012	Sheen	24.52	--	76.85
		4/4/2013	Sheen	29.74	--	71.63
		9/30/2013	Sheen	24.92	--	76.45
		9/26/2014	Sheen	25.92	--	75.45
		12/18/2014	--	27.81	--	73.56
		1/28/2015	Sheen	28.87	--	72.50
		6/18/2015	--	27.33	--	74.04
		9/23/2015	--	26.52	--	74.85
		12/3/2015	--	27.85	--	73.52
		3/28/2016	--	30.13	--	71.24
		6/22/2016	--	29.53	--	71.84
		9/6/2016	--	26.71	--	74.66
		11/28/2016	--	27.85	--	73.52
		3/6/2017	--	30.16	--	71.21
		6/12/2017	--	28.00	--	73.37
		10/27/2017	--	26.49	--	74.88
		12/6/2017	--	27.41	--	73.96

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GROUNDWATER ELEVATIONS
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Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-1	101.37	3/13/2018	--	30.13	--	71.24
		6/28/2018	--	26.35	--	75.02
		9/6/2018	--	25.60	--	75.77
		12/19/2018	--	26.85	--	74.52
		3/5/2019	--	28.93	--	72.44
		5/21/2019	--	27.94	--	73.43
		8/26/2019	--	26.58	--	74.79
		10/30/2019	--	26.42	--	74.95
		1/29/2020	--	28.98	--	72.39
		4/21/2020	--	29.19	--	72.18
		7/16/2020	--	25.28	--	76.09
		10/1/2020	--	25.00	--	76.37
		1/6/2021	--	27.71	--	73.66
		4/9/2021	--	29.80	--	71.57
		9/23/2021	--	26.50	--	74.87
		12/2/2021	--	27.25	--	74.12
		1/28/2022	--	28.90	--	72.47
		4/21/2022	--	29.27	--	72.10
		7/26/2022	--	26.64	--	74.73
		10/26/2022	--	27.29	--	74.08
		1/30/2023	--	29.55	--	71.82
		6/12/2023	--	28.43	--	72.94
		7/19/2023	--	28.45	--	72.92
		10/16/2023	--	27.07	--	74.30
MW-2	101.57	5/9/2005	--	27.28	--	74.29
		7/6/2005	--	25.52	--	76.05
		10/19/2005	--	24.30	--	77.27
		2/16/2006	--	27.38	--	74.19
		5/15/2006	--	25.62	--	75.95
		8/2/2006	--	23.51	--	78.06
		11/14/2006	--	26.08	--	75.49
		2/20/2007	--	28.13	--	73.44
		5/15/2007	--	25.86	--	75.71
		8/21/2007	--	24.45	--	77.12
		11/7/2007	--	25.31	--	76.26
		1/16/2008	--	27.27	--	74.30
		3/18/2008	--	28.68	--	72.89
		7/24/2008	--	24.77	--	76.80
		10/22/2008	--	24.55	--	77.02
		1/21/2009	--	27.23	--	74.34
		4/1/2009	--	28.76	--	72.81
		6/10/2009	--	25.76	--	75.81
		10/1/2009	--	22.22	--	79.35
		12/17/2009	--	25.62	--	75.95
		3/29/2010	--	27.96	--	73.61
		6/11/2010	--	24.99	--	76.58
		9/24/2010	--	24.54	--	77.03
		2/7/2011	--	28.22	--	73.35

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GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-2	101.57	3/18/2011	--	29.14	--	72.43
		6/20/2011	--	26.20	--	75.37
		9/30/2011	--	23.51	--	78.06
		12/15/2011	--	26.22	--	75.35
		9/21/2012	--	23.81	--	77.76
		4/4/2013	--	29.16	--	72.41
		9/30/2013	--	24.29	--	77.28
		9/26/2014	--	25.18	--	76.39
		12/18/2014	--	27.18	--	74.39
		1/28/2015	--	NM	--	--
		6/18/2015	--	27.73	--	73.84
		9/23/2015	--	25.74	--	75.83
		12/3/2015	--	27.23	--	74.34
		3/28/2016	--	29.67	--	71.90
		6/22/2016	--	27.20	--	74.37
		9/6/2016	--	25.96	--	75.61
		11/28/2016	--	27.20	--	74.37
		3/6/2017	--	29.45	--	72.12
		6/12/2017	--	27.11	--	74.46
		10/27/2017	--	25.81	--	75.76
		12/6/2017	--	26.79	--	74.78
		3/13/2018	--	29.53	--	72.04
		6/28/2018	--	25.45	--	76.12
		9/6/2018	--	24.79	--	76.78
		12/19/2018	--	26.21	--	75.36
		3/5/2019	--	28.35	--	73.22
		5/24/2019	--	27.07	--	74.50
		8/26/2019	--	25.79	--	75.78
		10/30/2019	--	25.70	--	75.87
		1/29/2020	--	28.39	--	73.18
		4/22/2020	--	27.89	--	73.68
		7/17/2020	--	24.48	--	77.09
		10/2/2020	--	24.37	--	77.20
		1/7/2021	--	27.08	--	74.49
		4/9/2021	--	29.09	--	72.48
		9/23/2021	--	25.30	--	76.27
		12/2/2021	--	26.59	--	74.98
		1/28/2022	--	28.30	--	73.27
		4/21/2022	--	28.19	--	73.38
		7/26/2022	--	25.76	--	75.81
		10/26/2022	--	26.53	--	75.04
		1/30/2023	--	28.93	--	72.64
		6/12/2023	--	29.27	--	72.30
		7/19/2023	--	27.58	--	73.99
		10/16/2023	--	26.26	--	75.31

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TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-3	102.1	5/9/2005	--	27.81	--	74.29
		7/6/2005	--	26.03	--	76.07
		10/19/2005	--	25.06	--	77.04
		2/16/2006	--	28.57	--	73.53
		5/15/2006	--	26.15	--	75.95
		8/2/2006	--	23.83	--	78.27
		11/14/2006	--	26.75	--	75.35
		2/20/2007	--	29.31	--	72.79
		5/15/2007	--	26.23	--	75.87
		8/21/2007	--	25.00	--	77.10
		11/7/2007	--	26.12	--	75.98
		1/16/2008	--	28.46	--	73.64
		3/18/2008	--	29.97	--	72.13
		7/24/2008	--	25.27	--	76.83
		10/22/2008	--	25.35	--	76.75
		1/21/2009	--	28.56	--	73.54
		4/1/2009	--	30.20	--	71.90
		6/10/2009	--	26.55	--	75.55
		10/1/2009	--	23.00	--	79.10
		12/17/2009	--	26.86	--	75.24
		3/29/2010	--	29.41	--	72.69
		6/11/2010	--	25.62	--	76.48
		9/24/2010	--	25.23	--	76.87
		2/7/2011	--	29.47	--	72.63
		3/18/2011	--	30.40	--	71.70
		6/20/2011	--	26.83	--	75.27
		9/30/2011	--	23.95	--	78.15
		12/15/2011	--	27.41	--	74.69
		9/21/2012	--	24.55	--	77.55
		4/4/2013	--	30.52	--	71.58
		9/30/2013	--	25.27	--	76.83
		9/26/2014	--	25.91	--	76.19
		12/18/2014	--	28.30	--	73.80
		1/28/2015	--	NM	--	--
		6/18/2015	--	27.53	--	74.57
		9/23/2015	--	26.33	--	75.77
		12/3/2015	--	28.33	--	73.77
		3/28/2016	--	30.99	--	71.11
		6/22/2016	--	27.88	--	74.22
		9/6/2016	--	26.66	--	75.44
		11/28/2016	--	28.32	--	73.78
		3/6/2017	--	30.78	--	71.32
		6/12/2017	--	27.71	--	74.39
		10/27/2017	--	26.66	--	75.44
		12/6/2017	--	27.89	--	74.21

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GROUNDWATER ELEVATIONS
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Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-3	102.1	3/13/2018	--	30.79	--	71.31
		6/28/2018	--	25.68	--	76.42
		9/6/2018	--	25.55	--	76.55
		12/19/2018	--	27.36	--	74.74
		3/5/2019	--	28.60	--	73.50
		5/21/2019	--	27.75	--	74.35
		8/26/2019	--	26.24	--	75.86
		10/30/2019	--	26.38	--	75.72
		1/29/2020	--	29.58	--	72.52
		4/22/2020	--	27.96	--	74.14
		7/17/2020	--	24.75	--	77.35
		10/2/2020	--	24.96	--	77.14
		1/7/2021	--	28.22	--	73.88
		4/9/2021	--	29.73	--	72.37
		9/22/2021	--	26.00	--	76.10
		12/2/2021	--	27.67	--	74.43
		1/28/2022	--	29.54	--	72.56
		4/21/2022	--	28.58	--	73.52
		7/26/2022	--	26.15	--	75.95
		10/26/2022	--	27.37	--	74.73
		1/30/2023	--	30.19	--	71.91
		6/12/2023	--	29.2	--	72.90
		7/19/2023	--	28.23	--	73.87
		10/16/2023	--	26.98	--	75.12
MW-4	101.4	5/9/2005	--	28.73	--	72.67
		7/6/2005	--	26.66	--	74.74
		10/19/2005	--	25.62	--	75.78
		2/16/2006	--	28.91	--	72.49
		5/15/2006	--	26.86	--	74.54
		8/2/2006	--	24.59	--	76.81
		11/14/2006	--	27.02	--	74.38
		2/20/2007	--	29.61	--	71.79
		5/15/2007	--	27.25	--	74.15
		8/21/2007	--	25.56	--	75.84
		11/7/2007	--	26.50	--	74.90
		1/16/2008	--	28.55	--	72.85
		3/18/2008	--	29.99	--	71.41
		7/24/2008	--	26.02	--	75.38
		10/22/2008	--	25.84	--	75.56
		1/21/2009	--	28.69	--	72.71
		4/1/2009	--	30.22	--	71.18
		6/10/2009	--	27.31	--	74.09
		10/1/2009	--	23.80	--	77.60
		12/17/2009	--	27.07	--	74.33
		3/29/2010	--	29.51	--	71.89
		6/11/2010	--	26.43	--	74.97
		9/24/2010	--	25.70	--	75.70

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-4	101.4	2/7/2011	--	29.49	--	71.91
		3/18/2011	--	30.38	--	71.02
		6/20/2011	--	27.34	--	74.06
		9/30/2011	--	24.68	--	76.72
		12/15/2011	--	27.58	--	73.82
		9/21/2012	--	25.01	--	76.39
		4/4/2013	--	30.46	--	70.94
		9/30/2013	--	25.55	--	75.85
		9/26/2014	--	26.27	--	75.13
		12/18/2014	--	28.38	--	73.02
		1/28/2015	--	NM	--	--
		6/18/2015	--	26.60	--	74.80
		9/23/2015	--	26.77	--	74.63
		12/3/2015	--	28.41	--	72.99
		3/28/2016	--	30.82	--	70.58
		6/22/2016	--	28.38	--	73.02
		9/6/2016	--	27.03	--	74.37
		11/28/2016	--	28.43	--	72.97
		3/6/2017	--	30.75	--	70.65
		6/12/2017	--	28.36	--	73.04
		10/27/2017	--	26.88	--	74.52
		12/6/2017	--	27.95	--	73.45
		3/13/2018	--	30.78	--	70.62
		6/28/2018	--	26.46	--	74.94
		9/6/2018	--	26.03	--	75.37
		12/19/2018	--	27.51	--	73.89
		3/5/2019	--	29.59	--	71.81
		5/24/2019	--	28.35	--	73.05
		8/26/2019	--	26.81	--	74.59
		10/29/2019	--	26.55	--	74.85
		1/28/2020	--	29.58	--	71.82
		4/21/2020	--	29.53	--	71.87
		7/16/2020	--	25.46	--	75.94
		10/1/2020	--	25.37	--	76.03
		1/6/2021	--	28.32	--	73.08
		4/8/2021	--	30.51	--	70.89
		9/23/2021	--	26.00	--	75.40
		12/1/2021	--	27.81	--	73.59
		1/27/2022	--	29.14	--	72.26
		4/21/2022	--	29.6	--	71.80
		7/26/2022	--	26.84	--	74.56
		10/26/2022	--	27.76	--	73.64
		1/30/2023	--	30.22	--	71.18
		6/12/2023	--	29.73	--	71.67
		7/19/2023	--	28.88	--	72.52
		10/16/2023	--	27.47	--	73.93

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-5	100.52	5/9/2005	--	28.50	--	72.02
		7/6/2005	--	26.32	--	74.20
		10/19/2005	--	25.30	--	75.22
		2/16/2006	--	28.62	--	71.90
		5/15/2006	--	26.55	--	73.97
		8/2/2006	--	24.23	--	76.29
		11/14/2006	--	27.67	--	72.85
		2/20/2007	--	29.34	--	71.18
		5/15/2007	--	27.04	--	73.48
		8/21/2007	--	25.21	--	75.31
		11/7/2007	--	26.13	--	74.39
		1/16/2008	--	28.18	--	72.34
		3/18/2008	--	29.65	--	70.87
		7/24/2008	--	25.73	--	74.79
		10/22/2008	--	25.49	--	75.03
		1/21/2009	--	28.38	--	72.14
		4/1/2009	--	29.92	--	70.60
		6/10/2009	--	27.09	--	73.43
		10/1/2009	--	23.50	--	77.02
		12/17/2009	--	26.77	--	73.75
		3/29/2010	--	29.21	--	71.31
		6/11/2010	--	26.16	--	74.36
		9/24/2010	--	25.31	--	75.21
		2/7/2011	--	29.13	--	71.39
		3/18/2011	--	30.10	--	70.42
		6/20/2011	--	27.03	--	73.49
		9/30/2011	--	24.35	--	76.17
		12/15/2011	--	27.25	--	73.27
		9/21/2012	--	24.65	--	75.87
		4/4/2013	--	30.10	--	70.42
		9/30/2013	--	25.16	--	75.36
		9/26/2014	--	25.88	--	74.64
		12/18/2014	--	27.98	--	72.54
		1/28/2015	--	NM	--	--
		6/18/2015	--	NM	--	--
		9/23/2015	--	26.41	--	74.11
		12/3/2015	--	28.00	--	72.52
		3/28/2016	--	30.41	--	70.11
		6/22/2016	--	28.03	--	72.49
		9/6/2016	--	22.66	--	77.86
		11/28/2016	--	28.03	--	72.49
		3/6/2017	--	30.39	--	70.13
		6/12/2017	--	28.06	--	72.46
		10/27/2017	--	26.50	--	74.02
		12/6/2017	--	27.58	--	72.94

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-5	100.52	3/13/2018	--	30.40	--	70.12
		6/28/2018	--	26.13	--	74.39
		9/6/2018	--	25.68	--	74.84
		12/19/2018	--	27.15	--	73.37
		3/5/2019	--	29.2	--	71.32
		5/24/2019	--	28.04	--	72.48
		8/26/2019	--	26.47	--	74.05
		10/29/2019	--	26.27	--	74.25
		1/28/2020	--	29.18	--	71.34
		4/21/2020	--	29.36	--	71.16
		7/16/2020	--	25.12	--	75.40
		10/1/2020	--	24.96	--	75.56
		1/6/2021	--	27.96	--	72.56
		4/8/2021	--	30.16	--	70.36
		9/23/2021	--	27.50	--	73.02
		12/1/2021	--	27.43	--	73.09
		1/27/2022	--	29.52	--	71.00
		4/21/2022	--	29.42	--	71.10
		7/26/2022	--	26.53	--	73.99
		10/26/2022	--	27.42	--	73.10
		1/30/2023	--	29.86	--	70.66
		6/12/2023	--	29.47	--	71.05
		7/19/2023	--	28.58	--	71.94
		10/16/2023	--	27.14	--	73.38
MW-6	102.14	5/9/2005	--	29.94	--	72.20
		7/6/2005	--	27.89	--	74.25
		10/19/2005	--	26.70	--	75.44
		2/16/2006	--	29.85	--	72.29
		5/15/2006	--	28.11	--	74.03
		8/2/2006	--	25.83	--	76.31
		11/14/2006	--	27.91	--	74.23
		2/20/2007	--	30.52	--	71.62
		5/15/2007	--	28.61	--	73.53
		8/21/2007	--	26.67	--	75.47
		11/7/2007	--	27.52	--	74.62
		1/16/2008	--	29.43	--	72.71
		3/18/2008	--	30.85	--	71.29
		7/24/2008	--	27.26	--	74.88
		10/22/2008	--	26.85	--	75.29
		1/21/2009	--	29.52	--	72.62
		4/1/2009	--	31.00	--	71.14
		6/10/2009	--	28.44	--	73.70
		10/1/2009	--	24.75	--	77.39
		12/17/2009	--	27.90	--	74.24
		3/29/2010	--	30.29	--	71.85
		6/11/2010	--	27.58	--	74.56
		9/24/2010	--	26.74	--	75.40
		2/7/2011	--	30.35	--	71.79

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-6	102.14	3/18/2011	--	31.21	--	70.93
		6/20/2011	--	28.50	--	73.64
		9/30/2011	--	25.85	--	76.29
		12/15/2011	--	28.41	--	73.73
		9/21/2012	--	26.03	--	76.11
		4/4/2013	--	31.24	--	70.90
		9/30/2013	--	25.43	--	76.71
		9/26/2014	--	27.38	--	74.76
		12/18/2014	--	29.28	--	72.86
		1/28/2015	--	30.33	--	71.81
		6/18/2015	--	28.73	--	73.41
		9/23/2015	--	27.91	--	74.23
		12/3/2015	--	29.31	--	72.83
		3/28/2016	--	31.52	--	70.62
		6/22/2016	--	28.00	--	74.14
		9/6/2016	--	28.21	--	73.93
		11/28/2016	--	29.33	--	72.81
		3/6/2017	--	31.54	--	70.60
		6/12/2017	--	29.55	--	72.59
		10/27/2017	--	27.92	--	74.22
		12/6/2017	--	28.87	--	73.27
		3/13/2018	--	31.59	--	70.55
		6/28/2018	--	27.8	--	74.34
		9/6/2018	--	27.12	--	75.02
		12/19/2018	--	28.36	--	73.78
		3/5/2019	--	30.39	--	71.75
		5/21/2019	--	29.51	--	72.63
		8/26/2019	--	28.00	--	74.14
		10/29/2019	--	27.73	--	74.41
		1/29/2020	--	30.46	--	71.68
		4/21/2020	--	30.85	--	71.29
		7/16/2020	--	26.73	--	75.41
		10/1/2020	--	26.45	--	75.69
		1/6/2021	--	29.19	--	72.95
		4/8/2021	--	31.38	--	70.76
		9/23/2021	--	26.00	--	76.14

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Top of Casing Elevation (1)	Sample Date	Depth to Product (feet BTOC)	Depth to Groundwater (feet BTOC)	Product Thickness (feet)	Adjusted Groundwater Elevation (2)
MW-6	102.14	12/1/2021	--	28.70	--	73.44
		1/28/2022	--	30.37	--	71.77
		4/21/2022	--	30.89	--	71.25
		7/26/2022	--	28.26	--	73.88
		10/26/2022	--	28.80	--	73.34
		1/30/2023	--	31.04	--	71.10
		6/12/2023	--	30.88	--	71.26
		7/19/2023	--	30.02	--	72.12
		10/16/2023	--	28.60	--	73.54

Notes:

(1): surface elevation based on an arbitrary datum of 100 feet

(2): groundwater elevation is adjusted using a density correction factor of 0.8 when product is present

bgs: below ground surface

BTOC: below top of casing

NM: Not measured

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	9/26/2014	18.30	7.17	0.824	1,268	1.60	-198.0	3.50
	12/18/2014	18.93	12.95	10.310	15,860	25.02	-166.1	2.00
	1/28/2015	18.78	11.91	4.202	6,495	10.54	-36.4	1.75
	6/18/2015	17.81	9.44	13.390	21,782	1.34	42.0	3.25
	9/23/2015	17.97	7.90	3.224	4,960	1.41	-127.6	2.50
	12/3/2015	17.97	7.92	1.311	2,016	2.45	-200.0	2.25
	3/28/2016	18.35	7.35	0.800	1,190	3.77	-101.0	2.00
	6/22/2016	16.70	7.30	--	2,620	0.50	-176.1	2.25
	9/7/2016	17.54	6.65	2.083	3,205	1.10	-127.8	3.50
	3/6/2017	15.98	8.72	1.564	2,398	0.86	-247.1	2.00
	6/12/2017	15.98	7.76	3.880	5,967	1.27	-103.8	2.75
	10/27/2017	18.65	7.22	0.783	1,273	5.27	-125.9	3.75
	12/6/2017	17.04	6.92	2.783	1,202	1.21	55.6	3.25
	3/13/2018	17.41	7.25	--	1,109	-0.05*	-125.4	1.80
	6/28/2018	17.65	7.03	--	1,593	1.07	-109.6	3.75
	9/6/2018	18.50	7.40	--	2,248	1.60	-116.7	4.00
	3/5/2019	16.90	7.46	--	1,090	--	-22.5	--
	5/21/2019	16.90	7.19	0.550	1,100	--	-19.8	2.75
	8/26/2019	21.70	7.13	0.640	1,270	--	-17.8	3.50
	10/30/2019	--	6.31	0.710	1,290	--	12.1	3.50
	1/29/2020	13.00	6.60	0.510	1,050	20.17*	-14.3	--
	4/21/2020	17.50	6.33	0.580	1,160	1.66	7.1	--
	7/16/2020	22.20	6.23	1.120	2,230	0.76	7.8	--
	10/1/2020	22.00	6.39	0.740	1,450	1.70	7.3	4.33
	1/6/2021	15.20	6.41	0.570	1,140	2.61	5.4	3.00
	4/9/2021	14.40	6.58	0.530	1,020	2.49	-0.3	2.00
	9/23/2021	20.00	7.00	--	3,040	--	--	2.46
	12/2/2021	14.30	6.39	--	1,040	--	--	3.25
	1/28/2022	10.80	6.63	--	940	--	--	2.50
	4/21/2022	18.60	6.35	0.490	990	--	--	2.25
	7/26/2022	19.50	6.27	0.640	1,280	--	--	3.50
	10/26/2022	18.50	6.61	0.480	950	--	--	3.00
	1/30/2023	14.80	6.99	0.440	890	--	--	2.00
	6/12/2023	18.70	6.86	0.400	790	--	--	2.50
	7/19/2023	34.28	7.52	0.760	1,163	1.12	-92.1	--
	10/16/2023	27.11	7.56	0.950	1,463.7	1.38	-93.2	3.25
MW-2	9/23/2015	18.01	7.11	0.782	1,204	2.86	0.9	3.50
	9/7/2016	17.45	6.95	0.703	1,081	3.89	5.7	4.00
	3/13/2018	17.86	7.23	--	1,046	2.50	48.5	1.80
	6/28/2018	17.19	7.02	--	1,142	3.47	45.1	4.50
	9/6/2018	23.70	7.30	--	1,199	2.63	-7.4	5.00
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	16.20	6.38	0.550	1,100	--	-28.5	4.25
	1/29/2020	14.90	6.55	0.590	1,180	13.5*	-30.5	--
	4/22/2020	15.10	6.52	0.500	1,010	3.09	-18.1	--
	7/17/2020	18.80	6.52	0.650	1,320	2.87	-11.6	--
	10/2/2020	15.50	6.54	0.550	1,090	4.64	-20.4	4.91
	1/7/2021	13.10	6.76	0.560	1,100	2.11	-19.5	3.59
	4/9/2021	15.70	6.43	0.470	950	3.01	-29.9	2.50
	9/23/2021	22.10	7.04	--	3,310	--	--	4.14
	12/2/2021	15.90	6.49	--	1,040	--	--	4.00
	1/28/2022	12.20	6.48	--	960	--	--	3.00
	4/21/2022	18.20	6.55	0.450	900	--	--	2.00
	7/26/2022	19.40	6.34	0.510	1,020	--	--	4.25
	10/26/2022	18.20	6.78	0.490	980	--	--	3.50
	1/30/2023	14.70	6.93	0.440	880	--	--	2.25
	6/12/2023	18.00	6.84	0.460	920	--	--	2.25
	7/19/2023	37.27	7.49	0.720	1,104	5.02	56.5	--
	10/16/2023	26.65	7.59	0.820	1,262.4	3.27	-56.2	3.50

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-3	9/23/2015	17.49	7.28	0.787	1,211	9.40	-45.2	3.25
	9/7/2016	16.37	6.81	0.673	1,035	3.54	17.5	3.50
	11/28/2016	16.68	7.92	--	1,072	4.09	62.3	3.50
	3/6/2017	15.38	7.65	0.782	1,202	3.26	-117.1	1.50
	6/12/2017	14.88	7.33	0.612	943	4.51	-95.6	3.00
	10/27/2017	17.27	7.37	--	800	6.11	35.0	3.75
	12/6/2017	16.08	7.01	0.596	918	3.42	-56.9	3.00
	3/13/2018	16.97	7.21	--	1,034	0.06	35.9	1.50
	6/28/2018	18.39	7.53	--	676	3.88	47.0	4.25
	9/6/2018	18.17	8.14	--	583	2.84	6.6	4.25
	3/5/2019	NA	7.47	0.530	1,050	NA	-24.6	--
	5/21/2019	16.30	7.25	0.310	560	--	-28.1	3.00
	8/26/2019	21.50	7.46	0.500	1,000	--	-28.7	3.75
	10/30/2019	17.40	6.60	0.990	990	--	-45.1	3.75
	1/29/2020	13.00	6.78	0.500	1,000	15.04*	-42.5	--
	4/22/2020	17.10	6.57	0.550	1,090	3.63	-23.3	--
	7/17/2020	18.60	6.85	0.300	600	2.97	-53.7	--
	10/2/2020	14.80	6.91	0.290	580	5.57	-44.0	4.44
	1/7/2021	14.10	6.70	0.360	720	2.29	-37.2	2.84
	4/9/2021	17.70	6.71	0.540	1,070	2.22	-29.2	2.00
	9/22/2021	18.60	7.00	--	1,148	--	--	3.30
	12/2/2021	16.20	6.59	--	850	--	--	3.00
	1/28/2022	14.10	6.77	--	940	--	--	2.00
	4/21/2022	17.90	6.60	0.450	890	--	--	2.75
	7/26/2022	18.10	6.83	0.380	760	--	--	4.00
	10/26/2022	15.90	6.44	0.420	840	--	--	2.50
	1/30/2023	16.90	6.88	0.450	900	--	--	1.25
	6/12/2023	17.70	6.60	0.440	900	--	--	1.75
	7/19/2023	31.11	7.42	0.690	1,057	4.37	131.7	--
	10/16/2023	32.00	7.55	0.710	1,092.9	3.89	231.1	2.75
MW-4	9/23/2015	17.73	7.52	0.411	632	10.50	-18.5	3.25
	9/7/2016	16.75	6.80	0.693	1,066	3.59	14.9	2.50
	11/28/2016	16.93	7.32	--	1,003	3.11	113.1	2.00
	3/13/2018	17.12	7.24	--	985	2.19	52.4	0.68
	6/28/2018	19.87	7.07	--	1,098	3.62	61.6	3.00
	9/6/2018	18.26	7.49	--	1,007	2.94	44.0	4.00
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	15.90	6.44	0.630	1,250	--	-24.6	2.75
	1/28/2020	14.30	6.63	0.530	1,050	11.56*	-25.7	--
	4/21/2020	18.30	6.28	0.540	1,080	4.51	-20.5	--
	7/16/2020	21.40	6.51	0.640	1,280	2.76	-19.9	--
	10/1/2020	17.90	6.61	0.510	1,020	4.82	-30.0	3.37
	1/6/2021	12.90	6.37	0.500	980	3.21	-21.5	1.93
	4/8/2021	17.70	6.41	0.520	1,030	6.72	-21.0	0.75
	9/23/2021	19.50	6.99	--	3,320	--	--	3.75
	12/1/2021	15.90	6.54	--	1,100	--	--	2.25
	1/27/2022	12.50	6.42	--	1,080	--	--	1.50
	4/21/2022	18.60	6.72	0.460	910	--	--	0.50
	7/26/2022	19.10	6.29	0.510	1,010	--	--	2.75
	10/26/2022	17.10	6.52	0.540	1,080	--	--	1.75
	1/30/2023	17.40	6.74	0.440	890	--	--	0.25
	6/12/2023	20.00	6.62	0.400	810	--	--	0.75
	7/19/2023	32.34	7.31	0.740	1,136	3.60	127.2	--
	10/16/2023	32.44	7.44	0.790	1,216.5	3.58	185.8	2.00
MW-5	9/23/2015	18.12	7.04	0.892	1,373	6.29	-109.5	2.75
	9/7/2016	16.82	6.90	0.931	1,433	6.49	41.1	4.50
	11/28/2016	17.58	7.37	--	1,141	6.64	104.1	2.00
	3/13/2018	16.60	7.23	--	1,033	1.80	51.1	0.81
	6/8/2018	16.38	7.12	--	1,097	6.17	70.5	3.00
	9/6/2018	17.90	7.28	--	1,023	7.28	51.6	3.25
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--

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TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	14.70	6.78	0.880	1,460	--	-26.3	2.75
	1/28/2020	12.50	6.92	0.520	1,080	6.61	-28.6	--
	4/21/2020	16.20	6.20	0.530	1,070	4.80	-25.0	--
MW-5	7/16/2020	20.70	6.40	0.650	1,320	4.34	-23.3	--
	10/1/2020	16.60	6.64	0.500	1,060	5.89	-37.6	3.48
	1/6/2021	11.80	6.63	0.460	880	6.28	-38.1	2.01
	4/8/2021	14.30	6.40	0.570	1,180	2.42	-25.1	1.00
	9/23/2021	18.10	7.01	--	3,350	--	--	3.00
	12/1/2021	15.90	6.55	--	1,040	--	--	2.25
	1/27/2022	15.30	6.37	--	1,000	--	--	1.00
	4/21/2022	18.60	6.94	0.460	910	--	--	1.50
	7/26/2022	18.80	6.35	0.470	980	--	--	2.75
	10/26/2022	17.10	6.80	0.510	1,020	--	--	2.25
	1/30/2023	16.60	6.90	0.460	920	--	--	1.00
	6/12/2023	18.70	6.68	0.400	800	--	--	1.25
	7/19/2023	33.54	7.47	0.690	1,068	5.14	149.4	--
	10/16/2023	30.25	7.63	0.020	26.57	5.72	216.9	2.50
MW-6	9/26/2014	17.65	7.22	0.712	1,096	1.38	-39.5	2.75
	12/18/2014	18.31	7.87	0.985	1,515	1.99	-161.7	2.25
	1/28/2015	17.73	7.52	0.868	1,335	4.17	-122.1	1.50
	6/18/2015	17.09	8.18	1.194	1,836	1.81	-89.5	2.50
	9/23/2015	17.98	8.10	1.014	1,559	2.45	-73.5	3.00
	12/3/2015	18.04	8.06	0.931	1,433	4.07	-177.6	2.25
	3/28/2016	18.05	7.04	0.600	1,000	5.16	-9.0	1.25
	6/22/2016	17.00	7.38	--	1,060	1.63	1.8	3.00
	9/7/2016	16.94	7.03	0.777	1,196	2.46	8.5	2.50
	11/28/2016	17.79	9.12	--	3,150	3.50	115.9	2.00
	3/6/2017	15.90	7.42	0.810	1,247	1.53	-160.6	1.50
	6/12/2017	15.22	7.42	0.763	1,174	2.56	-116.3	2.00
	10/27/2017	17.98	7.21	--	1,196	3.06	74.1	3.00
	12/6/2017	16.64	7.09	0.851	1,307	2.53	-63.8	2.50
	3/13/2018	17.05	7.23	--	1,043	0.15	14.6	1.14
	6/28/2018	17.56	7.08	--	1,198	1.28	60.1	3.00
	9/6/2018	18.06	7.43	--	1,395	1.31	51.6	3.50
	3/5/2019	14.20	7.56	--	1,370	--	-24.4	--
	5/21/2019	14.30	7.26	0.500	1,010	--	-29.6	2.00
	8/26/2019	19.10	7.05	0.580	1,170	--	-25.2	2.75
	10/29/2019	17.70	6.47	0.630	1,300	--	-25.6	3.00
	1/29/2020	12.20	6.80	0.540	1,070	6.75	-26.2	--
	4/21/2020	18.80	6.55	0.580	1,180	3.10	-20.0	--
	7/16/2020	22.30	6.37	0.770	1,550	2.17	-11.6	--
	10/1/2020	19.20	6.78	0.730	1,460	3.69	-22.2	3.64
	1/6/2021	12.20	6.57	0.530	1,080	2.44	-26.2	2.30
	4/8/2021	18.90	6.64	0.500	1,000	1.62	-17.4	1.25
	9/23/2021	19.00	7.10	--	2,780	--	--	2.93
	12/1/2021	16.90	6.65	--	1,030	--	--	2.50
	1/28/2022	9.10	6.80	--	950	--	--	1.75
	4/21/2022	**Insufficient water volume to sample**						
	7/26/2022	19.40	6.38	0.480	960	--	--	2.75
	10/26/2022	17.50	6.66	0.460	910	--	--	2.50
	1/30/2023	16.20	6.85	0.450	890	--	--	1.25
	6/12/2023	18.70	6.75	0.450	900	--	--	1.25
	7/19/2023	33.19	7.44	0.770	1,181	2.22	155.8	--
	10/16/2023	27.53	8.01	0.010	1,503	2.31	239.1	2.50
TMW-1	12/3/2015	17.12	8.23	2.072	3,188	7.40	-205.6	--
TMW-2	12/3/2015	17.54	9.40	5.043	7,761	2.47	-231.2	--

Notes:

°C: degrees Celcius
DO: dissolved oxygen
g/L: grams per liter
uS/cm: microsiemens per centimeter
mg/L: milligrams per liter

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
MW-1	2/19/1998	(orig)	--	--
	12/29/1998	(orig)	--	--
	5/9/2005	(orig)	--	--
	10/19/2005	(orig)	--	--
	11/14/2006	(orig)	--	--
	11/7/2007	(orig)	--	--
	7/24/2008	(orig)	--	--
	7/24/2008	(Duplicate)	--	--
	10/22/2008	(orig)	--	--
	10/22/2008	(Duplicate)	--	--
	1/21/2009	Free Product - Not Sampled		
	4/1/2009	(orig)	--	--
	6/10/2009	(orig)	--	--
	10/1/2009	(orig)	0.233	--
	12/17/2009	(orig)	0.521	--
	3/29/2010	(orig)	0.0803	--
	6/11/2010	(orig)	0.0217	--
	9/24/2010	(orig)	0.0285	--
	2/7/2011	(orig)	--	**0.459**
	3/18/2011	(orig)	< 0.02	**0.477**
	6/20/2011	(orig)	0.157	**0.424**
	6/20/2011	(Duplicate)	--	--
	9/30/2011	(orig)	**4.1**	**0.268**
	9/30/2011	(Duplicate)	--	--
	12/15/2011	(orig)	**1.91**	**0.35**
	12/15/2011	(Duplicate)	--	--
	9/21/2012	(orig)	**2.9**	**0.27**
	4/4/2013	(orig)	**1.8**	**0.47**
	9/30/2013	(orig)	**1.7**	**0.29**
	9/26/2014	(orig)	**2.3**	**0.34**
	11/5/2014	CHEMICAL OXIDATION INJECTION EVENT		
	12/18/2014	(orig)	0.0805	< 0.005
	1/28/2015	(orig)	< 0.050	< 0.005
	3/17/2015	CHEMICAL OXIDATION - 2nd INJECTION		
	6/18/2015	(orig)	< 0.5	< 0.05
	6/18/2015	(Duplicate)	< 0.5	< 0.05
	9/23/2015	(orig)	< 0.05	< 0.005
	9/23/2015	(Duplicate)	< 0.05	< 0.005
	12/3/2015	(orig)	0.678	**0.568**
	12/3/2015	(Duplicate)	0.776	**0.597**
	3/28/2016	(orig)	--	**0.454**
	3/28/2016	(Duplicate)	--	**0.445**
	6/22/2016	(orig)	**16.2**	**1.72**

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
MW-1	9/7/2016	(orig)	**7.66**	**1.63**
	9/7/2016	(Duplicate)	**10.2**	**1.77**
	10/18/2016	CHEMICAL OXIDATION - 3rd INJECTION		
	3/6/2017	(orig)	<0.05	0.022
	6/12/2017	(orig)	0.662	**0.839**
	10/27/2017	(orig)	**6.69**	**1.15**
	12/06/2017	(orig)	**4.89**	**1.02**
	3/13/2018	(orig)	**3.44**	**0.961**
	6/28/2018	(orig)	**8.15**	**1.14**
	9/6/2018	(orig)	**9.04**	**3.76**
	12/19/2018	(orig)	<0.10	**0.86**
	3/5/2019	(orig)	<0.10	**1.07**
	5/21/2019	(orig)	<0.10	**1.02**
	8/26/2019	(orig)	<0.10	**1.07**
	10/30/2019	(orig)	<0.10	**1.01**
	1/29/2020	(orig)	<0.10	**1.14**
	4/21/2020	(orig)	<0.10	**1.20**
	Q3	Invalid Sample due to laboratory complications		
	10/1/2020	(orig)	0.11	**2.91**
	1/6/2021	(orig)	<0.10	**1.10**
	4/9/2021	(orig)	<0.10	**1.00**
	9/23/2021	(orig)	**5.5**	**1.1**
	12/2/2021	(orig)	0.22	**0.72**
	1/28/2022	(orig)	<0.020	**0.66**
	4/21/2022	(orig)	**1.1**	**0.72**
	7/26/2022	(orig)	**2.7**	**1.2**
	10/26/2022	(orig)	**2.5**	**0.76**
	1/30/2023	(orig)	0.75	**0.56**
	6/12/2023	(orig)	<0.020	0.0022
	7/19/2023	(orig)	0.42	**0.61**
	10/16/2023	(orig)	0.43	**0.87**
MW-2	4/4/2013	(orig)	< 0.05	0.046
	9/30/2013	(orig)	< 0.05	0.0077
	9/23/2015	(orig)	< 0.05	< 0.005
	9/7/2016	(orig)	< 0.05	< 0.005
	3/13/2018	(orig)	< 0.05	0.0167
	6/28/2018	(orig)	< 0.05	< 0.005
	9/6/2018	(orig)	< 0.05	< 0.005
	12/19/2018	(orig)	< 0.10	< 0.010
	10/30/2019	(orig)	< 0.10	< 0.010
	1/29/2020	(orig)	< 0.10	< 0.010
	4/21/2020	(orig)	< 0.10	< 0.010
	Q3	Invalid Sample due to laboratory complications		
	10/2/2020	(orig)	< 0.10	< 0.010
	1/7/2021	(orig)	< 0.10	< 0.010
	4/9/2021	(orig)	< 0.020	0.013
	9/22/2021	(orig)	< 0.020	0.0026
	12/2/2021	(orig)	< 0.020	< 0.0020
	1/28/2022	(orig)	< 0.020	0.0030
	4/21/2022	(orig)	< 0.020	< 0.0020
	7/26/2022	(orig)	<0.020	<0.0020
	10/26/2022	(orig)	<0.020	<0.0020
	1/30/2023	(orig)	<0.020	0.0063
	6/12/2023	(orig)	0.084	**0.60**

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
	7/19/2023	(orig)	0.029	<0.0020
	10/16/2023	(orig)	<0.020	<0.0020
MW-3	12/15/2011	(orig)	0.246	0.112
	4/4/2013	(orig)	0.34	**0.28**
	9/30/2013	(orig)	< 0.05	0.047
	9/23/2015	(orig)	< 0.05	0.121
	9/7/2016	(orig)	< 0.05	**0.85**
	11/28/2016	(orig)	0.218	0.0959
	3/6/2017	(orig)	0.149	**0.211**
	6/12/2017	(orig)	0.0726	0.0604
	10/27/2017	(orig)	< 0.05	0.136
	12/06/2017	(orig)	< 0.05	0.0361
	3/13/2018	(orig)	< 0.05	0.084
	6/18/2018	(orig)	< 0.05	0.0336
	6/6/2018	(orig)	< 0.05	0.143
	12/19/2018	(orig)	< 0.10	0.157
	3/5/2019	(orig)	< 0.10	0.0341
	5/21/2019	(orig)	< 0.10	<0.01
	8/26/2019	(orig)	< 0.10	**0.249**
	10/30/2019	(orig)	< 0.10	0.145
	1/29/2020	(orig)	< 0.10	0.066
	4/21/2020	(orig)	< 0.10	0.0156
	Q3	Invalid Sample due to laboratory complications		
	10/2/2020	(orig)	<0.10	0.041
	1/7/2021	(orig)	<0.10	0.0243
	4/9/2021	(orig)	< 0.020	0.016
	9/22/2021	(orig)	< 0.020	0.13
	12/2/2021	(orig)	< 0.020	0.065
	1/28/2022	(orig)	0.029	0.0065
	4/21/2022	(orig)	< 0.020	0.038
	7/26/2022	(orig)	<0.020	0.11
	10/26/2022	(orig)	0.023	**0.35**
	1/30/2023	(orig)	<0.020	0.0036
	6/12/2023	(orig)	0.062	0.037
	7/19/2023	(orig)	<0.020	0.04
	10/16/2023	(orig)	<0.020	0.15
MW-4	4/4/2013	(orig)	< 0.05	0.069
	9/30/2013	(orig)	< 0.05	< 0.005
	9/23/2015	(orig)	< 0.05	< 0.005
	9/7/2016	(orig)	< 0.05	0.0094
	11/28/2016	(orig)	< 0.05	0.0066
	3/13/2018	(orig)	< 0.05	0.0063
	6/28/2018	(orig)	< 0.05	< 0.005
	9/6/2018	(orig)	< 0.05	< 0.005
	12/19/2018	(orig)	< 0.10	< 0.010
	10/29/2019	(orig)	< 0.10	< 0.010
	1/29/2020	(orig)	< 0.10	< 0.010
	4/21/2020	(orig)	< 0.10	< 0.010
	Q3	Invalid Sample due to laboratory complications		
	10/2/2020	(orig)	<0.10	<0.010
	1/6/2021	(orig)	<0.10	<0.010
	4/8/2021	(orig)	<0.020	<0.0020
	9/23/2021	(orig)	<0.020	<0.0020

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
MW-4	12/1/2021	(orig)	<0.020	<0.0020
	1/27/2022	(orig)	<0.020	<0.0020
	4/21/2022	(orig)	<0.020	<0.0020
	7/26/2022	(orig)	0.026	<0.0020
	10/26/2022	(orig)	<0.020	<0.0020
	1/30/2023	(orig)	0.085	0.0048
	6/12/2023	(orig)	0.25	0.018
	7/19/2023	(orig)	<0.020	<0.0020
	10/16/2023	(orig)	<0.020	<0.0020
MW-5	4/4/2013	(orig)	< 0.05	< 0.005
	4/4/2013	(Duplicate)	0.62	0.025
	9/30/2013	(orig)	< 0.05	< 0.005
	9/23/2015	(orig)	< 0.05	< 0.005
	9/7/2016	(orig)	< 0.05	< 0.005
	11/28/2016	(orig)	0.186	0.0083
	03/13/2018	(orig)	0.0668	< 0.05
	6/28/2018	(orig)	< 0.05	< 0.005
	9/6/2018	(orig)	< 0.05	< 0.005
	12/19/2018	(orig)	< 0.10	< 0.010
	10/29/2019	(orig)	< 0.10	< 0.010
	1/29/2020	(orig)	< 0.10	< 0.010
	4/21/2020	(orig)	< 0.10	< 0.010
	Q3	Invalid Sample due to laboratory complications		
	10/1/2020	(orig)	<0.10	0.0131
	1/6/2021	(orig)	<0.10	<0.01
	4/8/2021	(orig)	<0.020	<0.002
	9/23/2021	(orig)	<0.020	0.0037
	12/1/2021	(orig)	<0.020	<0.0020
	1/27/2022	(orig)	<0.020	<0.0020
	4/21/2022	(orig)	<0.020	<0.0020
	7/26/2022	(orig)	<0.020	<0.0020
	10/26/2022	(orig)	<0.020	<0.0020
	1/30/2023	(orig)	<0.020	<0.0020
	6/12/2023	(orig)	0.025	<0.0020
	7/19/2023	(orig)	<0.020	<0.0020
	10/16/2023	(orig)	<0.020	<0.0020
MW-6	9/15/1998	(orig)	--	--
	12/29/1998	(orig)	--	--
	3/3/1999	(orig)	--	--
	6/15/1999	(orig)	--	--
	9/15/1999	(orig)	--	--
	12/14/1999	(orig)	--	--
	1/22/2004	(orig)	--	--
	5/9/2005	(orig)	--	--
	10/19/2005	(orig)	--	--
	11/14/2006	(orig)	--	--
	11/7/2007	(orig)	--	--
	7/24/2008	(orig)	--	--
	10/22/2008	(orig)	--	--
	1/21/2009	(orig)	--	--
	4/1/2009	(orig)	--	--
	6/10/2009	(orig)	--	--
	10/1/2009	(orig)	< 0.02	--
	12/17/2009	(orig)	0.0511	--

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
	3/29/2010	(orig)	< 0.0200	--
	6/11/2010	(orig)	< 0.0200	--
	9/24/2010	(orig)	< 0.0200	--
	2/7/2011	(orig)	--	**0.543**
MW-6	3/18/2011	(orig)	< 0.02	0.0679
	6/20/2011	(orig)	< 0.1	**0.43**
	9/30/2011	(orig)	< 0.05	0.0261
	12/15/2011	(orig)	0.429	**1.06**
	9/21/2012	(orig)	< 0.05	0.058
	9/21/2012	(Duplicate)	< 0.06	0.055
	4/4/2013	(orig)	0.056	**0.33**
	9/30/2013	(orig)	< 0.05	0.17
	9/30/2013	(Duplicate)	< 0.05	0.17
	9/26/2014	(orig)	0.24	**0.44**
	9/26/2014	(Duplicate)	0.27	**0.41**
	11/5/2014	CHEMICAL OXIDATION INJECTION EVENT		
	12/18/2014	(orig)	**1.33**	**0.268**
	12/18/2014	(Duplicate)	**1.11**	**0.255**
	1/28/2015	(orig)	< 0.05	**0.402**
	3/17/2015	CHEMICAL OXIDATION - 2nd INJECTION		
	6/18/2015	(orig)	0.0636	**0.0225**
	9/23/2015	(orig)	< 0.05	0.0152
	12/3/2015	(orig)	0.0709	0.194
	3/28/2016	(orig)	--	**0.456**
	6/22/2016	(orig)	< 0.05	**0.463**
	9/7/2016	(orig)	< 0.05	**0.409**
	10/18/2016	CHEMICAL OXIDATION - 3rd INJECTION		
	11/28/2016	(orig)	< 0.05	0.0051
	3/6/2017	(orig)	0.0598	**0.428**
	6/12/2017	(orig)	0.0543	0.0618
	10/27/2017	(orig)	< 0.05	**0.218**
	12/06/2017	(orig)	< 0.05	**0.311**
	3/13/2018	(orig)	< 0.05	**0.925**
	6/28/2018	(orig)	< 0.05	**0.973**
	9/6/2018	(orig)	< 0.05	**0.848**
	12/19/2018	(orig)	< 0.10	**0.306**
	3/05/2019	(orig)	< 0.10	**0.617**
	5/21/2019	(orig)	< 0.10	**0.420**
	8/26/2019	(orig)	< 0.10	**0.357**
	10/29/2019	(orig)	< 0.10	**0.211**
	1/29/2020	(orig)	< 0.10	**0.524**
	4/21/2020	(orig)	< 0.10	**0.556**
	Q3	Invalid Sample due to laboratory complications		
	10/1/2020	(orig)	<0.10	<0.010
	1/6/2021	(orig)	< 0.10	**0.438**
	4/8/2021	(orig)	< 0.020	**0.51**

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Farmington B Com #1E
Hilcorp Energy Company
San Juan County, New Mexico

Well ID	Sample Date	Sample Type	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards			1.0	0.20
MW-6	9/22/2021	(orig)	< 0.020	**0.53**
	12/1/2021	(orig)	< 0.020	**0.80**
	1/28/2022	(orig)	< 0.020	**0.69**
	4/21/2022	Insufficient water volume to sample		
	7/26/2022	(orig)	< 0.020	**0.94**
	10/26/2022	(orig)	< 0.020	**0.85**
	1/30/2023	(orig)	<0.020	**0.73**
	6/12/2023	(orig)	<0.020	**0.32**
	7/19/2023	(orig)	<0.020	**0.40**
	10/16/2023	(orig)	<0.020	**0.68**

Notes:

mg/L: milligrams per liter

ND: not detected, practical quantitation limit unknown

NMWQCC: New Mexico Water Quality Control Commission

--: not analyzed

<0.037: indicates result less than the stated laboratory reporting limit (PQL)

*Concentrations in **bold** and shaded exceed the New Mexico Water Quality Control Commission Standards, 20.6.2 of the New Mexico Administrative Code*

ENSOLUM

APPENDIX A

Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

February 06, 2023

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Farmington B Com No 1E OrderNo.: 2301B33

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/31/2023 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-1
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 3:00:00 PM
Lab ID: 2301B33-001 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	0.75	0.020	*	mg/L	1	2/1/2023 3:26:29 PM
Manganese	0.56	0.0020	*	mg/L	1	2/1/2023 3:26:29 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-2
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 3:30:00 PM
Lab ID: 2301B33-002 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	ND	0.020		mg/L	1	2/1/2023 3:32:13 PM
Manganese	0.0063	0.0020		mg/L	1	2/1/2023 3:32:13 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-3
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 2:30:00 PM
Lab ID: 2301B33-003 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	ND	0.020		mg/L	1	2/1/2023 3:38:06 PM
Manganese	0.0036	0.0020		mg/L	1	2/1/2023 3:38:06 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-4
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 2:00:00 PM
Lab ID: 2301B33-004 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	0.085	0.020		mg/L	1	2/1/2023 3:56:57 PM
Manganese	0.0048	0.0020		mg/L	1	2/1/2023 3:56:57 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-5
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 2:20:00 PM
Lab ID: 2301B33-005 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	ND	0.020		mg/L	1	2/1/2023 4:02:57 PM
Manganese	ND	0.0020		mg/L	1	2/1/2023 4:02:57 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2301B33**
Date Reported: **2/6/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-6
Project: Farmington B Com No 1E
Collection Date: 1/30/2023 2:40:00 PM
Lab ID: 2301B33-006 **Matrix:** AQUEOUS **Received Date:** 1/31/2023 7:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **JRR**
Iron	ND	0.020		mg/L	1	2/1/2023 4:08:53 PM
Manganese	0.73	0.010	*	mg/L	5	2/1/2023 4:18:41 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2301B33**

06-Feb-23

Client: HILCORP ENERGY

Project: Farmington B Com No 1E

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407723** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID: **LLLCS-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407724** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.020	0.020	0.02000	0	102	50	150			
Manganese	ND	0.0020	0.002000	0	96.6	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407725** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	95.8	85	115			
Manganese	0.45	0.0020	0.5000	0	90.7	85	115			

Sample ID: **2301B33-006AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407787** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.37	0.020	0.5000	0	73.5	70	130			

Sample ID: **2301B33-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407788** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.45	0.020	0.5000	0	89.9	70	130	20.0	20	R

Sample ID: **2301B33-006AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407790** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	2.9	0.010	2.500	0.7300	87.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2301B33**
06-Feb-23

Client: HILCORP ENERGY
Project: Farmington B Com No 1E

Sample ID: **2301B33-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **B94342**	RunNo: **94342**
Prep Date:	Analysis Date: **2/1/2023**	SeqNo: **3407791** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	2.9	0.010	2.500	0.7300	86.5	70	130	1.11	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2301B33 RcptNo: 1

Received By: Juan Rojas 1/31/2023 7:05:00 AM

Completed By: Sean Livingston 1/31/2023 8:22:01 AM

Reviewed By: KRG 1-31-23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☐	No ☑	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☑	No ☐	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	HNO3 NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 6 (<2 or >12 unless noted)
Adjusted? YES
Checked by: JN 1/31/23

Special Handling (if applicable)

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

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

16. Additional remarks:

Filtered ~100mL from provided sample bottle and added ~0.4mL HNO3 (Chem #7051) to samples 001-006A for dissolved metal analysis, checked for proper pH<2 - JN 1/31/23 Used 6 Filters from Lot FG585

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.7	Good	Not Present	Morty		

JN 1/31/23

Chain-of-Custody Record

Client: Hilcorp Farmington NM

Mailing Address: 382 Road 3100 Aztec, NM 87410

Billing Address: PO Box 61529 Houston, TX 77208

Phone #: 505-486-9543

email or Fax#: Brandon.Sinclair@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Farmington B-Com No 1E

Project #:

Project Manager:

Mitch Killough

Sampler: Brandon Sinclair

On Ice: ~~☐ Yes~~ ☐ No

# of Coolers: 1 Marty

Cooler Temp(Including CF): 0.6+0.1=0.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2301833	Dissolved Mn and Fe
1-30	1500	Water	MW-1	500 ml Plastic	Cool	001	X
"	1530	Water	MW-2	500 ml Plastic	Cool	002	X
"	~~1540~~	Water	14:30 MW-3	500 ml Plastic	Cool	003	X
"	1400	Water	per conversation w/ Ian 1/31/23 MW-4	500 ml Plastic	Cool	004	X
"	1420	Water	MW-5	500 ml Plastic	Cool	005	X
"	1440	Water	MW-6	500 ml Plastic	Cool	006	X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1-30	1633				1/30/23	1633
1/30/23	1807			Courier	1/31/23	7:05

Remarks: *Dissolved Mn and Fe are to be filtered and preserved in the lab.
Special pricing, see Andy.

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 19, 2023

Kate Kaufman
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Farmington B Com No 1E OrderNo.: 2306615

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/13/2023 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-1
Project: Farmington B Com No 1E **Collection Date:** 6/12/2023 12:55:00 PM
Lab ID: 2306615-001 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	6/14/2023 8:47:06 AM
Manganese	0.0022	0.0020		mg/L	1	6/14/2023 8:47:06 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-2
Project: Farmington B Com No 1E
Collection Date: 6/12/2023 12:40:00 PM
Lab ID: 2306615-002 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.084	0.020		mg/L	1	6/14/2023 9:06:06 AM
Manganese	0.60	0.0020	*	mg/L	1	6/14/2023 9:06:06 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-3
Project: Farmington B Com No 1E **Collection Date:** 6/12/2023 11:15:00 AM
Lab ID: 2306615-003 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.062	0.020		mg/L	1	6/14/2023 9:10:16 AM
Manganese	0.037	0.0020		mg/L	1	6/14/2023 9:10:16 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-4
Project: Farmington B Com No 1E
Collection Date: 6/12/2023 11:50:00 AM
Lab ID: 2306615-004 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.25	0.020		mg/L	1	6/14/2023 9:14:34 AM
Manganese	0.018	0.0020		mg/L	1	6/14/2023 9:14:34 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-5
Project: Farmington B Com No 1E
Collection Date: 6/12/2023 12:05:00 PM
Lab ID: 2306615-005 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.025	0.020		mg/L	1	6/14/2023 9:18:52 AM
Manganese	ND	0.0020		mg/L	1	6/14/2023 9:18:52 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2306615**
Date Reported: **6/19/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-6
Project: Farmington B Com No 1E
Collection Date: 6/12/2023 12:25:00 PM
Lab ID: 2306615-006 **Matrix:** AQUEOUS **Received Date:** 6/13/2023 6:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	6/14/2023 9:23:10 AM
Manganese	0.32	0.0020	*	mg/L	1	6/14/2023 9:23:10 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2306615**

19-Jun-23

Client: HILCORP ENERGY

Project: Farmington B Com No 1E

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A97424**	RunNo: **97424**
Prep Date:	Analysis Date: **6/14/2023**	SeqNo: **3539477** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A97424**	RunNo: **97424**
Prep Date:	Analysis Date: **6/14/2023**	SeqNo: **3539478** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.023	0.020	0.02000	0	116	50	150			
Manganese	0.0021	0.0020	0.002000	0	107	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A97424**	RunNo: **97424**
Prep Date:	Analysis Date: **6/14/2023**	SeqNo: **3539479** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	97.1	85	115			
Manganese	0.49	0.0020	0.5000	0	98.0	85	115			

Sample ID: **2306615-001AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **A97424**	RunNo: **97424**
Prep Date:	Analysis Date: **6/14/2023**	SeqNo: **3539483** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.6	70	130			
Manganese	0.49	0.0020	0.5000	0.002192	97.7	70	130			

Sample ID: **2306615-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-1**	Batch ID: **A97424**	RunNo: **97424**
Prep Date:	Analysis Date: **6/14/2023**	SeqNo: **3539484** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.48	0.020	0.5000	0	96.3	70	130	0.300	20	
Manganese	0.49	0.0020	0.5000	0.002192	98.0	70	130	0.284	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2306615 RcptNo: 1

Received By: Tracy Casarrubias 6/13/2023 6:15:00 AM

Completed By: Tracy Casarrubias 6/13/2023 7:11:29 AM

Reviewed By: JN 6/13/23

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☑	No ☐	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	HNO3 NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 6 (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? YES
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: SCM 06/13/23

pH Lot # 538534

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

Filtered ~ 125mL from original volume provided for samples 001A-006A. (Filter Lot # FL0968) x 6. Proceeded to add ~ 0.4 mL of HNO3 samples to 001A-006A (Chem #7162) for proper pH- SM 06/13/23

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Hilcorp Farmington NM

Mailing Address: 382 Road 3100 Aztec, NM 87410

Billing Address: PO Box 61529 Houston, TX 77208

Phone #: 505-486-9543

email or Fax#: Brandon.Sinclair@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name: Farmington B-Com No 1E

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☑ Yes ☐ No 4091

# of Coolers: 1

Cooler Temp(including CF): 5.1 - 0 = 5.1 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2306615	Dissolved Mn and Fe
6-12	1255	Water	MW-1	500 ml Plastic	Cool	001	X
	1240	Water	MW-2	500 ml Plastic	Cool	002	X
	1115	Water	MW-3	500 ml Plastic	Cool	003	X
	1150	Water	MW-4	500 ml Plastic	Cool	004	X
	1205	Water	MW-5	500 ml Plastic	Cool	005	X
	1225	Water	MW-6	500 ml Plastic	Cool	006	X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6-12	1635				6/12/23	1635
6/12/23	1754			Courier	6/13/23	6:15

Remarks: *Dissolved Mn and Fe are to be filtered and preserved in the lab.
Special pricing, see Andy.

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 09, 2023

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Farmington B Com No 1E OrderNo.: 2307914

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/20/2023 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-1
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 11:30:00 AM
Lab ID: 2307914-001 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.42	0.020	*	mg/L	1	8/1/2023 9:18:22 AM
Manganese	0.61	0.0020	*	mg/L	1	8/1/2023 9:18:22 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-2
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 11:55:00 AM
Lab ID: 2307914-002 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.029	0.020		mg/L	1	8/1/2023 9:22:46 AM
Manganese	ND	0.0020		mg/L	1	8/1/2023 9:22:46 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-3
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 10:10:00 AM
Lab ID: 2307914-003 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	8/1/2023 9:27:05 AM
Manganese	0.040	0.0020		mg/L	1	8/1/2023 9:27:05 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-4
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 10:30:00 AM
Lab ID: 2307914-004 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	8/1/2023 9:31:10 AM
Manganese	ND	0.0020		mg/L	1	8/1/2023 9:31:10 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-5
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 10:47:00 AM
Lab ID: 2307914-005 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	8/1/2023 9:35:23 AM
Manganese	ND	0.0020		mg/L	1	8/1/2023 9:35:23 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2307914**
Date Reported: **8/9/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-6
Project: Farmington B Com No 1E
Collection Date: 7/19/2023 11:15:00 AM
Lab ID: 2307914-006 **Matrix:** AQUEOUS **Received Date:** 7/20/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	8/1/2023 9:46:27 AM
Manganese	0.40	0.0020	*	mg/L	1	8/1/2023 9:46:27 AM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2307914**

09-Aug-23

Client: HILCORP ENERGY

Project: Farmington B Com No 1E

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A98643**	RunNo: **98643**
Prep Date:	Analysis Date: **8/1/2023**	SeqNo: **3592514** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A98643**	RunNo: **98643**
Prep Date:	Analysis Date: **8/1/2023**	SeqNo: **3592515** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	99.9	50	150			
Manganese	0.0022	0.0020	0.002000	0	108	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A98643**	RunNo: **98643**
Prep Date:	Analysis Date: **8/1/2023**	SeqNo: **3592516** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.020	0.5000	0	102	85	115			
Manganese	0.52	0.0020	0.5000	0	104	85	115			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2307914 RcptNo: 1

Received By: Tracy Casarrubias 7/20/2023 6:30:00 AM

Completed By: Tracy Casarrubias 7/20/2023 8:14:34 AM

Reviewed By: JH 7-20-23

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ☐ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑ HNO3
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐ # of preserved bottles checked for pH: 6 (6) (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ Adjusted? YES
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by: JH 7/20/23

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

From original volume provided, poured off ~125mL and filtered (Filter Lot# 210968) for samples 001A-006A. Added ~0.4 mL of HNO3 (Chem#7162) for proper pH- JH 7/20/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Hilcorp Farmington NM

Mailing Address: 382 Road 3100 Aztec, NM 87410

Billing Address: PO Box 61529 Houston, TX 77208

Phone #: 505-486-9543

email or Fax#: Brandon.Sinclair@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other_____

☐ EDD (Type) _____

Turn-Around Time:

X Standard ☐ Rush_____

Project Name:

Farmington B-Com No 1E

Project #:

Project Manager:

Mitch Killough

Sampler: Brandon Sinclair

On Ice: ☒ Yes ☐ No 4093

# of Coolers: 1

Cooler Temp(including CF): 1.1 - 0 = 1.1°c

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 230794	Dissolved Mn and Fe
7-19	1130	Water	MW-1	500 ml Plastic	Cool	001	X
"	1155	Water	MW-2	500 ml Plastic	Cool	002	X
"	1010	Water	MW-3	500 ml Plastic	Cool	003	X
"	1030	Water	MW-4	500 ml Plastic	Cool	004	X
"	1047	Water	MW-5	500 ml Plastic	Cool	005	X
"	1115	Water	MW-6	500 ml Plastic	Cool	006	X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
7-19	1702				7/19/23	1702
7/19/23	1826			courier	7/20/23	6:30

Remarks: *Dissolved Mn and Fe are to be filtered and preserved in the lab.
Special pricing, see Andy.

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 24, 2023

Mitch Killough
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Farmington B Com no 1E OrderNo.: 2310878

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 6 sample(s) on 10/18/2023 for the analyses presented in the following report.

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

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

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-1
Project: Farmington B Com no 1E **Collection Date:** 10/16/2023 3:30:00 PM
Lab ID: 2310878-001 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	0.43	0.020	*	mg/L	1	10/20/2023 2:14:49 PM
Manganese	0.87	0.0020	*	mg/L	1	10/20/2023 2:14:49 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-2
Project: Farmington B Com no 1E
Collection Date: 10/16/2023 4:00:00 PM
Lab ID: 2310878-002 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	10/20/2023 2:19:08 PM
Manganese	ND	0.0020		mg/L	1	10/20/2023 2:19:08 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-3
Project: Farmington B Com no 1E
Collection Date: 10/16/2023 2:00:00 PM
Lab ID: 2310878-003 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	10/20/2023 2:23:29 PM
Manganese	0.15	0.0020	*	mg/L	1	10/20/2023 2:23:29 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-4
Project: Farmington B Com no 1E **Collection Date:** 10/16/2023 2:25:00 PM
Lab ID: 2310878-004 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	10/20/2023 2:27:50 PM
Manganese	ND	0.0020		mg/L	1	10/20/2023 2:27:50 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-5
Project: Farmington B Com no 1E
Collection Date: 10/16/2023 2:50:00 PM
Lab ID: 2310878-005 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	10/20/2023 2:32:16 PM
Manganese	ND	0.0020		mg/L	1	10/20/2023 2:32:16 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2310878**
Date Reported: **10/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-6
Project: Farmington B Com no 1E
Collection Date: 10/16/2023 3:10:00 PM
Lab ID: 2310878-006 **Matrix:** AQUEOUS **Received Date:** 10/18/2023 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	10/20/2023 2:54:15 PM
Manganese	0.68	0.010	*	mg/L	5	10/20/2023 3:00:55 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310878**

24-Oct-23

Client: HILCORP ENERGY

Project: Farmington B Com no 1E

Sample ID: **MB-A**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3688966** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								
Manganese	ND	0.0020								

Sample ID: **LCSLL-A**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3688967** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.022	0.020	0.02000	0	111	50	150			
Manganese	0.0024	0.0020	0.002000	0	122	50	150			

Sample ID: **LCS-A**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3688968** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.52	0.020	0.5000	0	104	85	115			
Manganese	0.52	0.0020	0.5000	0	105	85	115			

Sample ID: **2310878-005AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-5**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689212** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.6	70	130			
Manganese	0.50	0.0020	0.5000	0	99.5	70	130			

Sample ID: **2310878-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-5**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689217** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.50	0.020	0.5000	0	99.2	70	130	0.551	20	
Manganese	0.50	0.0020	0.5000	0	99.4	70	130	0.0689	20	

Sample ID: **2310878-006AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689222** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2310878**

24-Oct-23

Client: HILCORP ENERGY

Project: Farmington B Com no 1E

Sample ID: **2310878-006AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689222** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.8	70	130			

Sample ID: **2310878-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689223** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.49	0.020	0.5000	0	98.9	70	130	0.100	20	

Sample ID: **2310878-006AMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689225** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	3.2	0.010	2.500	0.6794	101	70	130			

Sample ID: **2310878-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-6**	Batch ID: **A100619**	RunNo: **100619**
Prep Date:	Analysis Date: **10/20/2023**	SeqNo: **3689229** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	3.2	0.010	2.500	0.6794	101	70	130	0.0240	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.
B	Analyte detected in the associated Method Blank
E	Above Quantitation Range/Estimated Value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY Work Order Number: 2310878 RcptNo: 1

Received By: Tracy Casarrubias 10/18/2023 6:30:00 AM

Completed By: Tracy Casarrubias 10/18/2023 11:49:52 AM

Reviewed By: SCM 10/18/23

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☑ No ☐ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑ HNO3
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐ # of preserved bottles checked for pH: 6
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐ (<2 or >12 unless noted) Adjusted? Yes
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐ Checked by: JM 10/18/23

Special Handling (if applicable)

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

Person Notified: ____ Date: ____

By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: ____

Client Instructions: ____

16. Additional remarks:

From original volume provided for samples 001A-006A, ~125mL was poured off and filtered (Lot # F30298 x 7). After being filtered, ~.40mL of HNO3 (Chem#7281) was added to samples 001A-006A for proper pH- JM 10/18/23

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.0	Good	Yes	Morty		

Chain-of-Custody Record

Client: Hilcorp Farmington NM

Mailing Address: 382 Road 3100 Aztec, NM 87410

Billing Address: PO Box 61529 Houston, TX 77208

Phone #: 505-486-9543

email or Fax#: Brandon.Sinclair@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

X Standard ☐ Rush

Project Name:

Farmington B-Com No 1E

Project #:

Project Manager:

Mitch Killough

Sampler: Brandon Sinclair

On Ice: ☒ Yes ☐ No Marty

# of Coolers: 1

Cooler Temp(including CF): 5.0 - 0 = 5.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2310878	Dissolved Mn and Fe
10-16	1530	Water	MW-1	500 ml Plastic	Cool	001	X
	1600	Water	MW-2	500 ml Plastic	Cool	002	X
	1400	Water	MW-3	500 ml Plastic	Cool	003	X
	1425	Water	MW-4	500 ml Plastic	Cool	004	X
	1450	Water	MW-5	500 ml Plastic	Cool	005	X
	1510	Water	MW-6	500 ml Plastic	Cool	006	X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-17	1438				10/17/23	1438
10/17/23	1748			courier	10/18/23	6:30

Remarks: *Dissolved Mn and Fe are to be filtered and preserved in the lab.
Special pricing, see Andy.

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
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

Action 326297

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 326297
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2023 Annual Groundwater Monitoring Report for Farmington B Com #1E: Content Satisfactory 1. Quarterly sampling may be suspended in MW-4 and MW-5 as COCs have been well below allowable concentrations. 2. Sampling frequency may be reduced to an annual basis in wells: MW-1, MW-2, MW-3 and MW-6 until allowable concentrations per the WQCC are conveyed. 3. Continue to sample for iron in MW-1, the remaining wells may have iron removed as an analyte. 4. Submit the 2024 Annual Report to OCD by April of 2025.	5/29/2024