REVIEWED
By Mike Buchanan at 11:08 am, Apr 23, 2025

Review of the 2024 Annual Groundwater Monitoring Report for Nell Hall #1: content satisfactory
1. Continue to collect groundwater samples at MW-6, MW-7, MW-8 on a semi-annual basis for BTEX and dissolved iron as prescribed in report.
2. As monitored natural attenuation has demonstrated to achieve remediation and only residual concentrations remain, continue as prescribed in this report.
3. Please submit the status update and 2025 Annual Groundwater Monitoring Report to OCD no later than April 1, 2026.

ENSOLUM

March 12, 2025

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

Re: 2024 Annual Groundwater Monitoring Report
Nell Hall #1
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NAUTOFAB000417
NMOCD Administrative Order: 3RP-090

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company, has prepared this *2024 Annual Groundwater Monitoring Report* to the New Mexico Oil Conservation Division (NMOCD) to document groundwater monitoring activities conducted at the Nell Hall #1 natural gas production site (Site) during 2024. The Site is located on private land, approximately 2 miles west of Aztec, New Mexico in Section 7, Township 30 North, Range 11 West, San Juan County, New Mexico (Figure 1).

SITE BACKGROUND

Petroleum-impacted soil was first discovered at the Site during the closure of an unlined dehydrator pit in 1994 by Conoco, Inc. (operator of the Site at the time and later ConocoPhillips Company). At the time of discovery, three monitoring wells, MW-1, MW-2, and MW-3, were installed at the Site to assess groundwater conditions and determine if groundwater had been impacted by the release. Conoco, Inc. also installed eight air-sparge wells (SP-1 through SP-8, see Figure 2) to introduce air into the water-bearing zone and enhance the volatilization and biodegradation of petroleum hydrocarbons in groundwater; however, no information or data in the historical Site reports indicated whether the air sparge wells were ever operated as intended.

Drought conditions in the 1990s and early 2000s resulted in a water table decline to an elevation below the screened intervals of the monitoring wells. As such, these wells have not been sampled since the early 2000s. In response, monitoring wells MW-4, MW-5, and MW-6 were installed in 2004 with 30 to 35 feet of slotted screen to accommodate significant water table fluctuations caused by seasonal variation and/or nearby irrigation. To further evaluate subsurface soil and groundwater quality downgradient of MW-6, two additional wells (MW-7 and MW-8) were installed in 2015.

Hilcorp acquired the Site from ConocoPhillips Company in August 2017 and continued quarterly gauging and sampling of the monitoring network. Following recommendations presented in the *2021 Annual Groundwater Monitoring Report*, the NMOCD approved reducing the sampling frequency to semiannual for wells MW-6 through MW-8, effective in 2024, until all constituents of concern meet applicable standards. Additionally, based on recommendations presented in the *2022 Annual Groundwater Monitoring Report*, on May 21, 2024, the NMOCD further approved

the plugging and abandonment of air sparge wells SP-1 through SP-8 and monitoring wells MW-1 through MW-5, which were subsequently plugged and abandoned in June 2024.

SITE GROUNDWATER CLEANUP STANDARDS

The NMOCD requires groundwater quality standards be met as presented by the New Mexico Water Quality Control Commission (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 the constituents of concern (COCs) at the Site in milligrams per liter (mg/L).

- Benzene: 0.005 mg/L
- Toluene: 1.0 mg/L
- Ethylbenzene: 0.70 mg/L
- Total Xylenes: 0.62 mg/L
- Dissolved Iron: 1.0 mg/L

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

Groundwater level measurements and samples were collected in January 2024 from wells MW-4 through MW-8. In October 2024, groundwater measurements and samples were collected from MW-6 through MW-8, in accordance with NMOCD approvals received on May 21, 2024. Static groundwater levels were recorded using a Keck oil/water interface probe. The probe was decontaminated with Alconox® soap and rinsed with distilled water prior to each measurement to prevent cross-contamination.

Based on semiannual measurements, groundwater elevations fluctuate seasonally and generally increase during the summer and fall months, likely due to nearby field irrigation. This pattern is evident in the October 2024 groundwater elevations, which are approximately 10 feet higher than those recorded in January 2024. Measured depths-to-groundwater and calculated groundwater elevations are presented in Table 1. The inferred groundwater flow direction has historically varied throughout the year. In January 2024 (Figure 3), groundwater flowed predominantly toward the southeast, while in October 2024 (Figure 4), the flow shifted slightly to the southwest. These seasonal variations in both elevation and flow direction are consistent with irrigation-related recharge and localized hydrologic influences.

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, including temperature, pH, electrical conductivity, and total dissolved solids were collected during the purging process and are presented in Table 2.

Following well purging, groundwater samples were placed 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. Containers were immediately sealed and packed on ice to preserve samples. Samples were submitted to Eurofins Environmental Testing Laboratory (Eurofins) in Albuquerque, New Mexico, for analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) following United State Environmental Protection Agency (EPA) Method 8260B, and dissolved iron following 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

During the January 2024 semiannual groundwater monitoring event, well MW-4 was dry and could not be sampled. Well MW-6 purged dry during sampling and did not recharge sufficiently for sample collection. Groundwater samples were successfully collected from wells MW-5, MW-7, and MW-8. In October 2024, samples were collected from wells MW-6, MW-7, and MW-8.

Benzene was detected in MW-6 during the October 2024 sampling event at a concentration of 0.019 mg/L, exceeding the NMWQCC groundwater standard of 0.005 mg/L. Ethylbenzene was also detected in MW-6 at a concentration of 0.0094 mg/L, but remained below the 0.70 mg/L standard. Toluene and total xylenes were not detected above method reporting limits in any sampled wells during 2024.

Dissolved iron exceeded the NMWQCC secondary standard of 1.0 mg/L in MW-6, with a concentration of 3.8 mg/L in October 2024. Dissolved iron was not detected above the standard in MW-7 or MW-8 during either sampling event.

These results indicate a localized exceedance of benzene and secondary parameters in MW-6, while all other samples remained below the NMWQCC groundwater standards. Analytical results are summarized in Table 3 and depicted on Figure 5. Complete laboratory reports are provided in Appendix A.

CONCLUSIONS

Overall, BTEX concentrations in groundwater have decreased over time at the Site. BTEX compounds have not been detected above laboratory reporting limits in wells MW-7 and MW-8 in more than seven years. In 2024, no BTEX constituents were detected above reporting limits in these wells. Well MW-6 continues to exhibit benzene concentrations exceeding NMWQCC standards; however, concentrations have steadily declined in this well since 2013. In October 2024, benzene was detected in MW-6 at 0.019 mg/L, above the 0.005 mg/L NMWQCC standard, but remains significantly lower than historical peak concentrations.

Dissolved iron concentrations have consistently exceeded the NMWQCC standard in groundwater from well MW-6 since it was first analyzed in 2009. Similar to benzene, dissolved iron concentrations in MW-6 have steadily declined since 2013. The elevated concentrations are likely a result of low-oxygen, reducing groundwater conditions in this area, which are commonly associated with petroleum hydrocarbon degradation. This is further evidenced by the absence of elevated iron concentrations in wells outside the source area and plume extent. As groundwater conditions at the Site gradually return to natural aerobic conditions, dissolved iron is expected to precipitate and decrease in concentration over time.

Lastly, groundwater downgradient of MW-6 continues to exhibit BTEX and dissolved iron concentrations below NMWQCC standards, indicating the groundwater plume remains stable, localized to the vicinity of MW-6, and has not migrated downgradient. Overall, Site conditions demonstrate a continued decrease in the magnitude of the petroleum-hydrocarbon plume, supporting natural attenuation as an effective and appropriate long-term remedial strategy.

RECOMMENDATIONS

Based on historical data, dissolved phase petroleum hydrocarbon constituents have been reduced at the Site and are currently only present in well MW-6 at concentrations exceeding NMWQCC standards. Based on Site data, it is believed monitored natural attenuation remains an

appropriate remedial action to manage the residual benzene and iron concentrations present in well MW-6.

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

- Collect groundwater sample from wells MW-6, MW-7, and MW-8 on a semiannual basis for BTEX and dissolved iron constituents. Wells MW-7 and MW-8 will serve as points of compliance at the Site to ensure benzene and dissolved iron concentrations are not migrating off-Site. Once concentrations are compliant with NMWQCC standards, sampling frequency will be increased to quarterly until eight consecutive quarters are below 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

Wes Weichert, PG (licensed in WY)
Project Geologist
(816) 266-8732
wweichert@ensolum.com

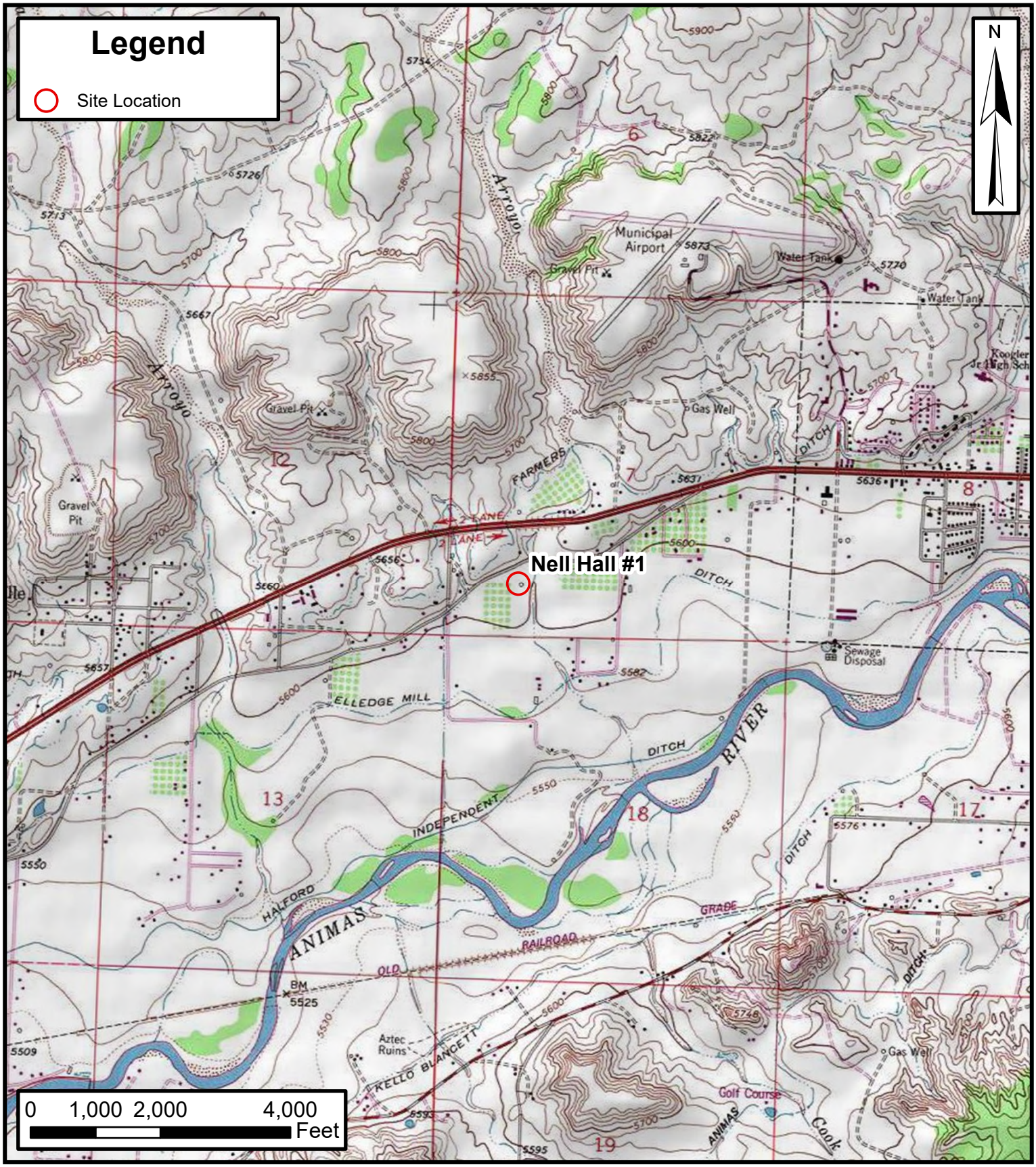
Stuart Hyde, PG (licensed in TX & WA)
Senior Geologist
(970) 903-1607
shyde@ensolum.com

Attachments:

Figure 1	Site Location Map
Figure 2	Site Map
Figure 3	January 2024 Groundwater Elevation Map
Figure 4	October 2024 Groundwater Elevation Map
Figure 5	2024 Groundwater Analytical Results
Table 1	Groundwater Elevation Summary
Table 2	Groundwater Quality Measurement
Table 3	Groundwater Analytical Results
Appendix A	Laboratory Analytical Reports

ENSOLUM

FIGURES



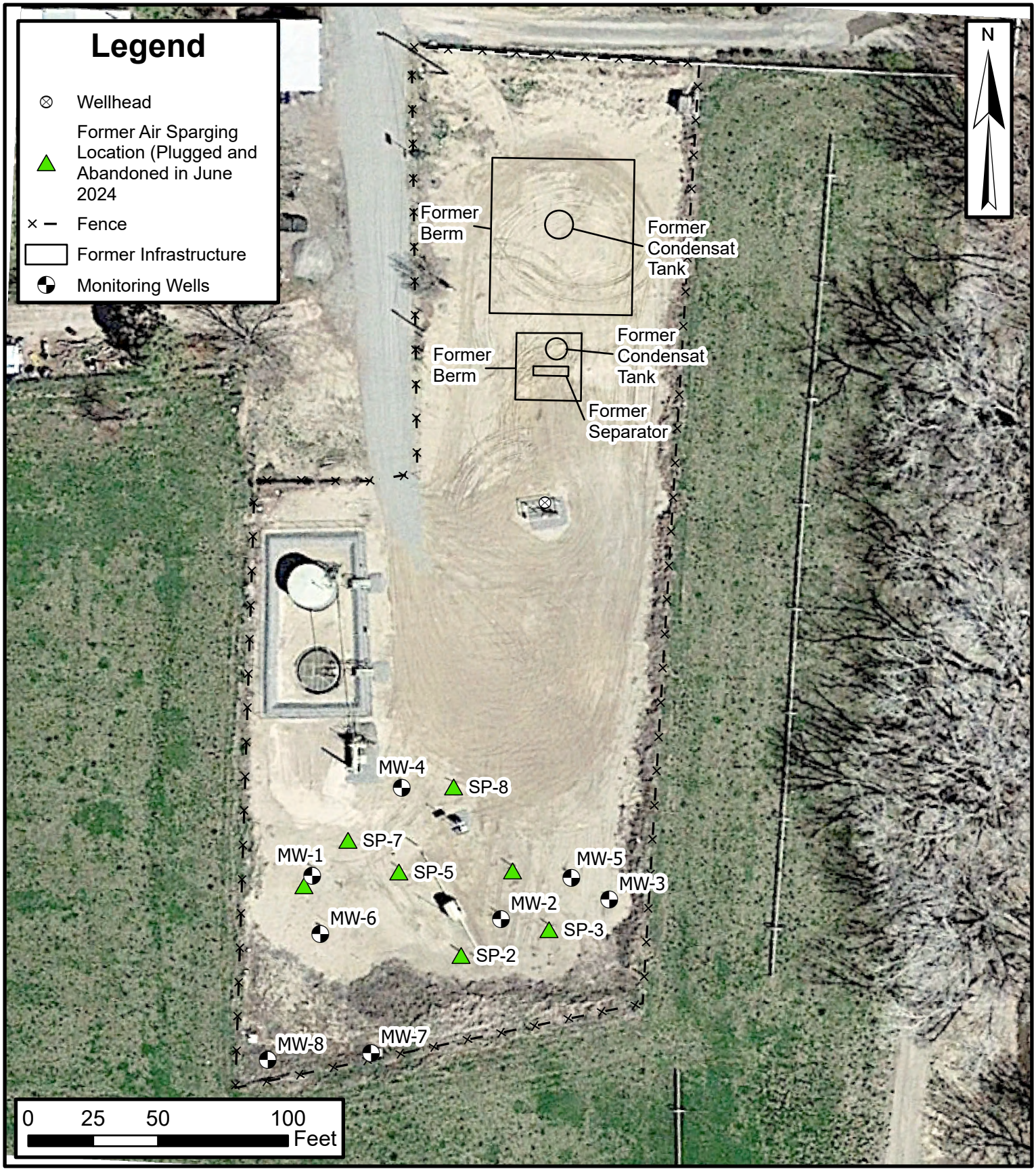
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Location Map

Nell Hall #1
Hilcorp Energy Company
36.821616, -108.037375
Sec 7, T30N, R11W
San Juan County, New Mexico

FIGURE
1

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



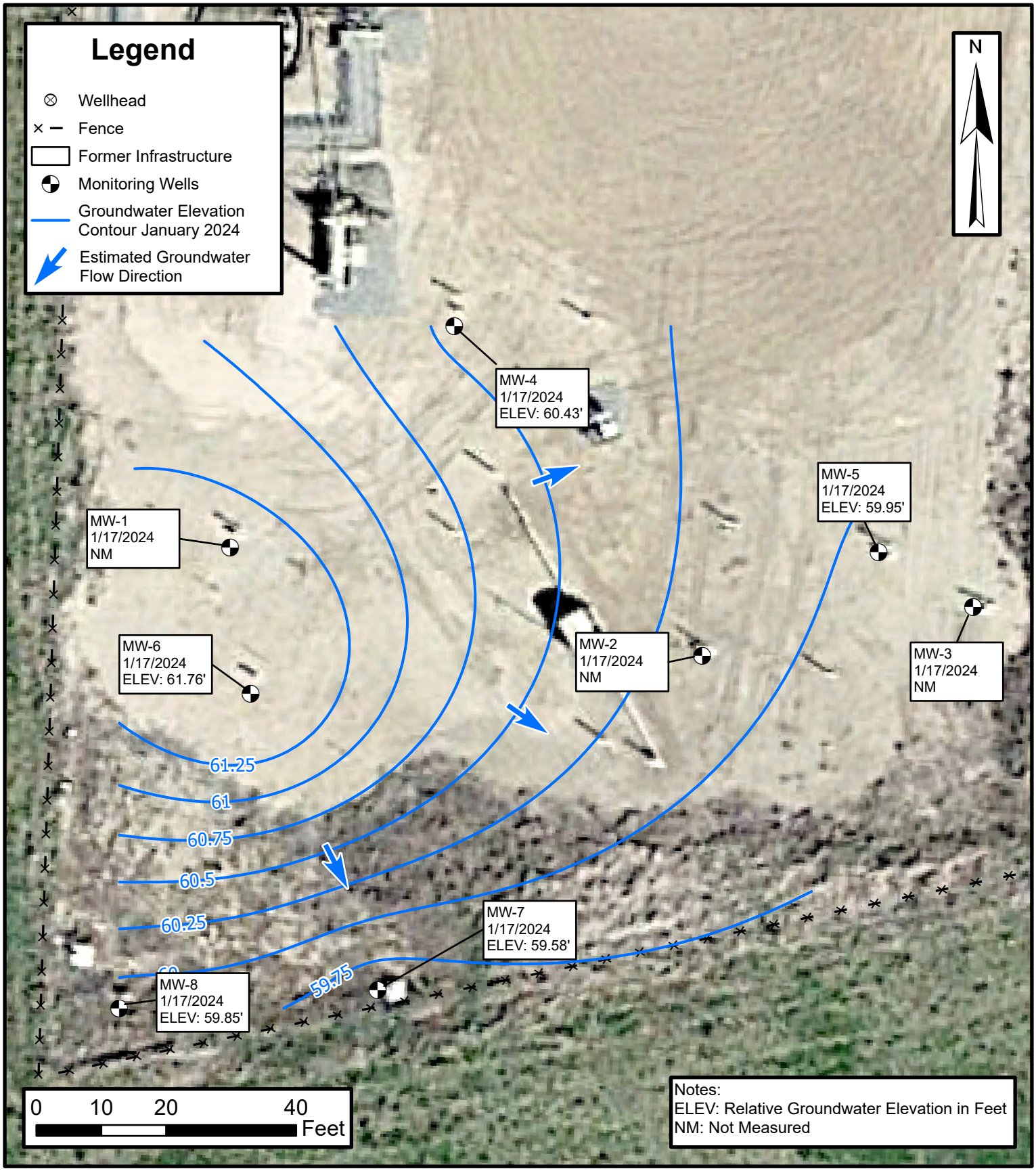
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

Site Map

Nell Hall #1
Hilcorp Energy Company
36.821616, -108.037375
Sec 7, T30N, R11W
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth



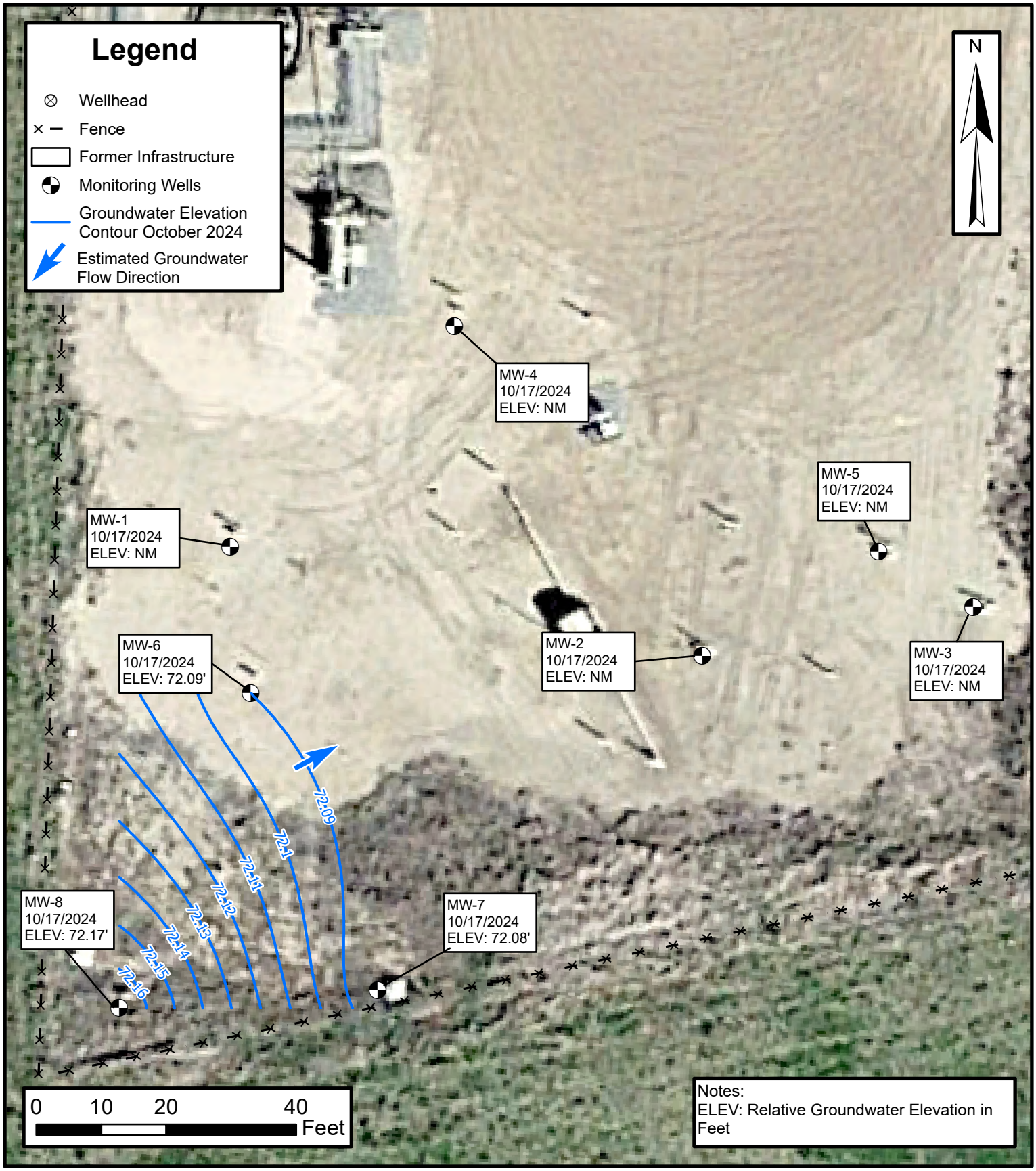
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

January 2024 Groundwater Elevation Map

Nell Hall #1
Hilcorp Energy Company
36.821616, -108.037375
Sec 7, T30N, R11W
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth



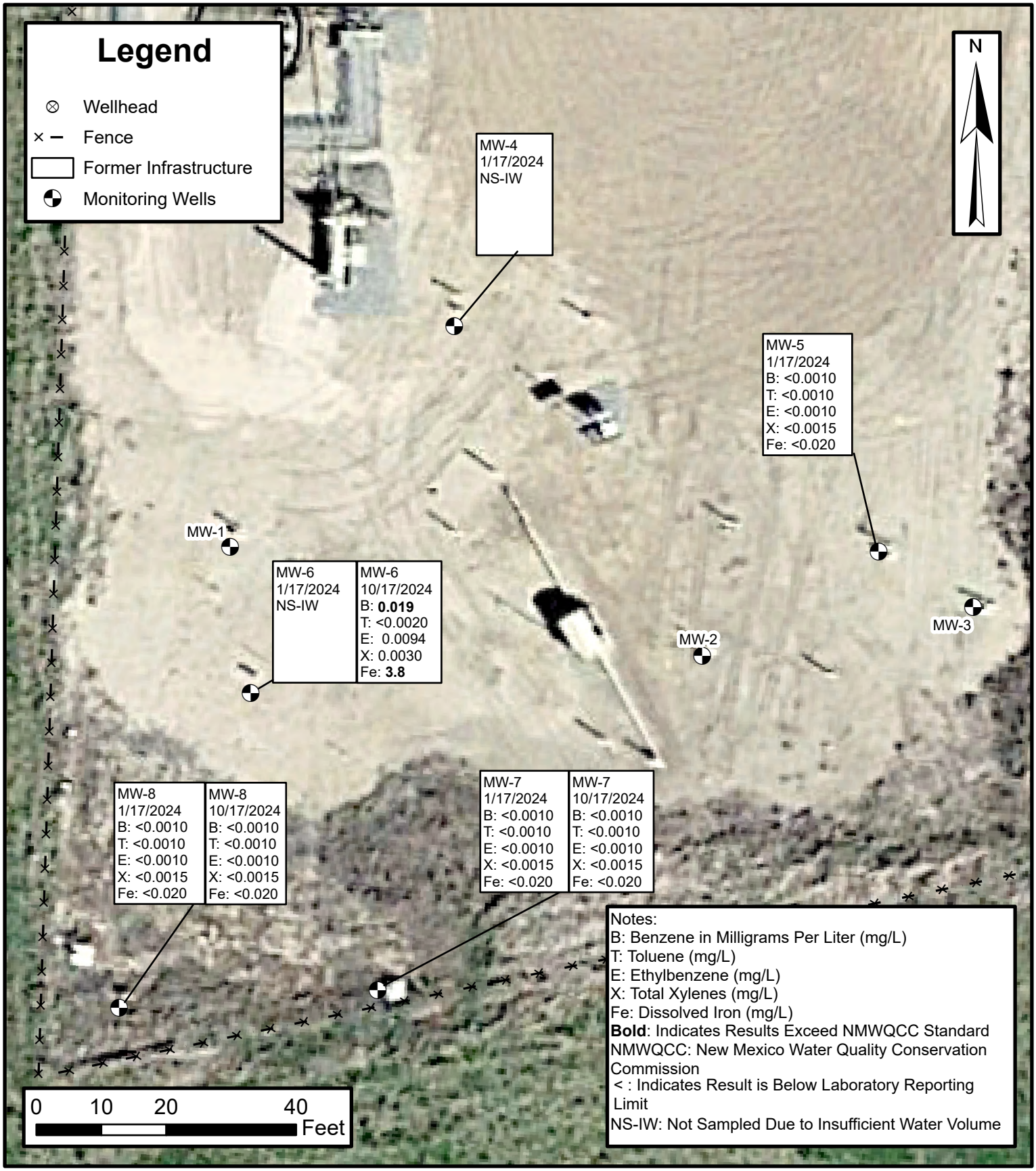
ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

October 2024 Groundwater Elevation Map

Nell Hall #1
Hilcorp Energy Company
36.821616, -108.037375
Sec 7, T30N, R11W
San Juan County, New Mexico

FIGURE
4

Sources: Google Earth



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

2024 Groundwater Analytical Results

Nell Hall #1
Hilcorp Energy Company
36.821616, -108.037375
Sec 7, T30N, R11W
San Juan County, New Mexico

FIGURE
7

Sources: Google Earth

ENSOLUM

TABLES

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-1	97.95	5/10/2005	DRY	--
		10/20/2005	19.25	78.70
		11/22/2005	24.15	73.80
		5/17/2006	--	--
		11/15/2006	21.40	76.55
		2/19/2007	DRY	--
		5/14/2007	24.85	73.10
		8/22/2007	24.61	73.34
		11/6/2007	20.87	77.08
		3/17/2008	DRY	--
		10/22/2008	19.38	78.57
		3/30/2009	28.25	69.70
		9/30/2009	16.56	81.39
		3/31/2010	DRY	--
		6/9/2010	24.16	73.79
		9/27/2010	20.00	77.95
		3/16/2011	DRY	--
		6/21/2011	26.80	71.15
		9/27/2011	17.85	80.10
		12/13/2011	25.39	72.56
		3/7/2012	DRY	--
		6/4/2012	26.40	71.55
		9/20/2012	17.57	80.38
		12/28/2012	DRY	--
		3/28/2013	DRY	--
		6/12/2013	24.33	73.62
		9/11/2013	17.59	80.36
		12/13/2013	27.45	70.50
		3/20/2014	DRY	--
		6/18/2014	25.18	72.77
		9/15/2014	18.68	79.27
		12/15/2014	DRY	--
		3/16/2015	DRY	--
		6/15/2015	27.85	70.10
		9/16/2015	21.71	76.24

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-1	97.95	11/30/2015	26.14	71.81
		3/30/2016	DRY	--
		9/8/2016	18.46	79.49
		11/29/2016	25.21	72.74
		6/14/2017	25.05	72.90
		9/25/2017	19.44	78.51
		12/5/2017	27.29	70.66
		3/15/2018	28.36	69.59
		6/27/2018	24.84	73.11
		3/14/2019	28.24	69.71
		5/24/2019	28.24	69.71
		8/27/2019	DRY	--
		12/17/2019	27.80	70.15
		2/19/2020	28.25	69.70
		4/28/2020	28.26	69.69
		8/25/2020	25.17	72.78
		10/28/2020	22.34	75.61
		3/24/2021	28.24	69.71
		6/28/2021	DRY	--
		9/22/2021	DRY	--
		11/15/2021	26.79	71.16
		2/9/2022	NM	--
		4/12/2022	NM	--
		7/27/2022	NM	--
		10/13/2022	NM	--
MW-2	97.16	5/10/2005	DRY	--
		10/20/2005	18.81	78.35
		11/22/2005	23.74	73.42
		5/17/2006	22.06	75.10
		11/15/2006	21.01	76.15
		2/19/2007	DRY	--
		5/14/2007	DRY	--
		8/22/2007	18.03	79.13
		11/6/2007	20.43	76.73
		3/17/2008	DRY	--

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-2	97.16	10/22/2008	18.83	78.33
		3/30/2009	27.15	70.01
		9/30/2009	16.01	81.15
		3/31/2010	DRY	--
		6/9/2010	23.36	73.80
		9/27/2010	19.42	77.74
		3/16/2011	DRY	--
		6/21/2011	26.43	70.73
		9/27/2011	17.28	79.88
		12/13/2011	25.10	72.06
		3/7/2012	DRY	--
		6/4/2012	25.17	71.99
		9/20/2012	17.30	79.86
		12/28/2012	DRY	--
		3/28/2013	DRY	--
		6/12/2013	23.78	73.38
		9/11/2013	17.22	79.94
		12/13/2013	27.00	70.16
		3/20/2014	DRY	--
		6/18/2014	24.78	72.38
		9/15/2014	18.18	78.98
		12/15/2014	DRY	--
		3/16/2015	DRY	--
		6/15/2015	26.65	70.51
		9/16/2015	21.37	75.79
		11/30/2015	26.04	71.12
		3/30/2016	27.31	69.85
		6/22/2016	25.45	71.71
		9/8/2016	18.09	79.07
		11/29/2016	24.94	72.22
		6/14/2017	24.85	72.31
		9/25/2017	18.96	78.20
		12/5/2017	27.04	70.12
		3/15/2018	DRY	--
		6/27/2018	24.61	72.55

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-2	97.16	3/14/2019	27.16	70.00
		5/24/2019	27.21	69.95
		8/27/2019	24.74	72.42
		12/17/2019	27.05	70.11
		2/19/2020	27.14	70.02
		4/28/2020	27.20	69.96
		8/24/2020	24.61	72.55
		10/28/2020	21.89	75.27
		3/24/2021	27.18	69.98
		6/28/2021	DRY	--
		9/22/2021	DRY	--
		11/15/2021	26.86	70.30
		2/9/2022	NM	--
		4/12/2022	NM	--
		7/27/2022	NM	--
		10/13/2022	NM	--
MW-3	97.77	5/10/2005	DRY	--
		10/20/2005	19.36	78.41
		11/22/2005	24.24	73.53
		5/17/2006	22.82	74.95
		11/15/2006	21.53	76.24
		2/19/2007	DRY	--
		5/14/2007	DRY	--
		8/22/2007	18.36	79.41
		11/6/2007	20.95	76.82
		3/17/2008	DRY	--
		10/22/2008	19.34	78.43
		3/30/2009	DRY	--
		9/30/2009	DRY	--
		3/31/2010	DRY	--
		6/9/2010	23.87	73.90
		9/27/2010	19.93	77.84
		3/16/2011	DRY	--
		6/21/2011	27.06	70.71
		9/27/2011	17.82	79.95

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-3	97.77	12/13/2011	25.66	72.11
		3/7/2012	DRY	--
		6/4/2012	25.53	72.24
		9/20/2012	17.97	79.80
		12/28/2012	DRY	--
		3/28/2013	DRY	--
		6/12/2013	24.36	73.41
		9/11/2013	17.84	79.93
		12/13/2013	DRY	--
		3/20/2014	DRY	--
		6/18/2014	25.36	72.41
		9/15/2014	18.79	78.98
		12/15/2014	DRY	--
		3/16/2015	DRY	--
		6/15/2015	27.20	70.57
		9/16/2015	22.05	75.72
		11/30/2015	26.68	71.09
		3/30/2016	DRY	--
		9/8/2016	18.75	79.02
		11/29/2016	25.53	72.24
		6/14/2017	25.52	72.25
		9/25/2017	19.62	78.15
		12/5/2017	27.31	70.46
		3/15/2018	DRY	--
		6/27/2018	25.27	72.50
		3/14/2019	27.40	70.37
		5/24/2019	DRY	--
		8/27/2019	25.42	72.35
		12/17/2019	27.30	70.47
		2/19/2020	27.37	70.40
		4/28/2020	DRY	--
		8/24/2020	25.20	72.57
		10/28/2020	22.49	75.28
		3/24/2021	DRY	--
		6/28/2021	DRY	--

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-3	97.77	9/22/2021	DRY	--
		11/15/2021	27.24	70.53
		2/9/2022	NM	--
		4/12/2022	NM	--
		7/27/2022	NM	--
		10/13/2022	NM	--
MW-4	97.75	3/8/2004	36.04	61.71
		7/19/2004	8.44	89.31
		10/27/2004	19.69	78.06
		12/27/2004	27.58	70.17
		5/10/2005	DRY	--
		10/20/2005	18.87	78.88
		11/22/2005	23.93	73.82
		5/17/2006	--	--
		11/15/2006	21.02	76.73
		2/19/2007	34.40	63.35
		5/14/2007	27.56	70.19
		8/22/2007	18.18	79.57
		11/6/2007	20.48	77.27
		3/17/2008	36.08	61.67
		10/22/2008	18.96	78.79
		3/30/2009	37.36	60.39
		9/30/2009	16.15	81.60
		3/31/2010	DRY	--
		6/9/2010	23.61	74.14
		9/27/2010	19.61	78.14
		3/16/2011	DRY	--
		6/21/2011	26.79	70.96
		9/27/2011	17.47	80.28
		12/13/2011	25.35	72.40
		3/7/2012	35.73	62.02
		6/4/2012	25.39	72.36
		9/20/2012	17.43	80.32
		12/28/2012	28.02	69.73
		3/28/2013	DRY	--

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-4	97.75	6/12/2013	24.06	73.69
		9/11/2013	17.40	80.35
		12/13/2013	27.90	69.85
		3/20/2014	DRY	--
		6/18/2014	25.10	72.65
		9/15/2014	18.43	79.32
		12/15/2014	28.01	69.74
		3/16/2015	DRY	--
		6/15/2015	26.91	70.84
		9/16/2015	21.62	76.13
		11/30/2015	26.28	71.47
		3/30/2016	37.54	60.21
		6/22/2016	25.59	72.16
		9/8/2016	18.29	79.46
		11/29/2016	25.31	72.44
		6/14/2017	25.17	72.58
		9/25/2017	19.24	78.51
		12/5/2017	27.64	70.11
		3/15/2018	37.54	60.21
		6/27/2018	24.84	72.91
		10/10/2018	22.70	75.05
		12/12/2018	29.98	67.77
		3/14/2019	37.43	60.32
		5/23/2019	33.96	63.79
		8/27/2019	25.17	72.58
		12/16/2019	29.15	68.60
		2/20/2020	36.64	61.11
		4/29/2020	DRY	--
		8/25/2020	24.74	73.01
		10/29/2020	22.13	75.62
		3/24/2021	37.40	60.35
		6/28/2021	26.33	71.42
		9/22/2021	23.45	74.30
		11/15/2021	26.77	70.98
		2/9/2022	37.37	60.38

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-4	97.75	4/12/2022	DRY	--
		7/27/2022	24.58	73.17
		10/13/2022	25.15	72.60
		1/31/2023	37.35	60.40
		5/11/2023	37.39	60.36
		7/18/2023	33.74	64.01
		10/19/2023	28.46	69.29
		1/17/2024	37.32	60.43
MW-5	98.81	3/8/2004	37.19	61.62
		7/19/2004	9.38	89.43
		10/27/2004	21.07	77.74
		12/27/2004	28.99	69.82
		5/10/2005	39.79	59.02
		10/20/2005	20.34	78.47
		11/22/2005	25.23	73.58
		5/17/2006	23.80	75.01
		11/15/2006	22.51	76.30
		2/19/2007	35.31	63.50
		5/14/2007	27.59	71.22
		8/22/2007	19.45	79.36
		11/6/2007	21.94	76.87
		3/17/2008	37.33	61.48
		10/22/2008	19.30	79.51
		3/30/2009	38.68	60.13
		9/30/2009	17.54	81.27
		3/31/2010	39.05	59.76
		6/9/2010	24.91	73.90
		9/27/2010	20.92	77.89
		3/16/2011	39.25	59.56
		6/21/2011	28.02	70.79
		9/27/2011	18.79	80.02
		12/13/2011	26.62	72.19
		3/7/2012	37.00	61.81
		6/4/2012	26.57	72.24

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-5	98.81	9/20/2012	18.92	79.89
		12/28/2012	29.37	69.44
		3/28/2013	DRY	--
		6/12/2013	25.39	73.42
		9/11/2013	18.84	79.97
		12/13/2013	29.20	69.61
		3/20/2014	39.83	58.98
		6/18/2014	26.35	72.46
		9/15/2014	19.76	79.05
		12/15/2014	29.37	69.44
		3/16/2015	39.55	59.26
		6/15/2015	28.22	70.59
		9/16/2015	23.02	75.79
		11/30/2015	27.61	71.20
		3/30/2016	41.26	57.55
		6/22/2016	26.91	71.90
		9/8/2016	19.72	79.09
		11/29/2016	26.48	72.33
		6/14/2017	26.48	72.33
		9/25/2017	20.58	78.23
		12/5/2017	29.09	69.72
		3/15/2018	40.67	58.14
		6/27/2018	26.24	72.57
		10/10/2018	23.44	75.37
		12/12/2018	31.25	67.56
		3/14/2019	41.70	57.11
		5/24/2019	34.36	64.45
		8/28/2019	26.41	72.40
		12/17/2019	30.58	68.23
		2/21/2020	38.03	60.78
		4/29/2020	39.43	59.38
		8/25/2020	26.17	72.64
		10/29/2020	23.49	75.32
		3/24/2021	41.78	57.03
		6/28/2021	27.68	71.13

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-5	98.81	9/22/2021	24.80	74.01
		11/15/2021	28.50	70.31
		2/9/2022	38.95	59.86
		4/12/2022	42.47	56.34
		7/27/2022	25.56	73.25
		10/13/2022	26.63	72.18
		1/31/2023	38.87	59.94
		5/11/2023	42.47	56.34
		7/18/2023	33.23	65.58
		10/19/2023	29.80	69.01
		1/17/2024	38.86	59.95
MW-6	98.41	3/8/2004	36.27	62.14
		7/19/2004	9.43	88.98
		10/27/2004	19.33	79.08
		12/27/2004	28.62	69.79
		5/10/2005	DRY	--
		10/20/2005	19.94	78.47
		11/22/2005	25.02	73.39
		5/17/2006	--	--
		11/15/2006	21.12	77.29
		2/19/2007	34.82	63.59
		5/14/2007	26.12	72.29
		8/22/2007	19.41	79.00
		11/6/2007	21.51	76.90
		3/17/2008	36.34	62.07
		10/22/2008	19.99	78.42
		3/30/2009	37.04	61.37
		9/30/2009	17.26	81.15
		3/31/2010	37.24	61.17
		6/9/2010	24.43	73.98
		9/27/2010	20.79	77.62
		3/16/2011	DRY	--
		6/21/2011	27.56	70.85
		9/27/2011	18.58	79.83

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-6	98.41	12/13/2011	26.32	72.09
		3/7/2012	36.01	62.40
		6/4/2012	26.55	71.86
		9/20/2012	18.25	80.16
		12/28/2012	29.11	69.30
		3/28/2013	DRY	--
		6/12/2013	24.78	73.63
		9/11/2013	18.26	80.15
		12/13/2013	28.84	69.57
		3/20/2014	37.47	60.94
		6/18/2014	25.93	72.48
		9/15/2014	19.35	79.06
		12/15/2014	29.02	69.39
		3/16/2015	37.37	61.04
		6/15/2015	27.92	70.49
		9/16/2015	22.40	76.01
		11/30/2015	27.22	71.19
		3/30/2016	37.81	60.60
		6/22/2016	26.75	71.66
		9/8/2016	19.27	79.14
		11/29/2016	26.20	72.21
		6/14/2017	25.97	72.44
		9/25/2017	20.04	78.37
		12/5/2017	28.63	69.78
		3/15/2018	37.76	60.65
		6/27/2018	25.67	72.74
		10/10/2018	22.97	75.44
		12/12/2018	31.12	67.29
		3/14/2019	37.84	60.57
		5/23/2019	35.26	63.15
		8/27/2019	25.83	72.58
		12/16/2019	29.41	69.00
		2/20/2020	36.41	62.00
		4/29/2020	DRY	--
		8/25/2020	25.70	72.71

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-6	98.41	10/28/2020	22.85	75.56
		3/24/2021	34.74	63.67
		6/28/2021	27.08	71.33
		9/22/2021	24.30	74.11
		11/15/2021	27.63	70.78
		2/9/2022	36.93	61.48
		4/12/2022	37.86	60.55
		7/27/2022	25.38	73.03
		10/13/2022	26.03	72.38
		1/31/2023	36.78	61.63
		5/11/2023	37.88	60.53
		7/18/2023	35.26	63.15
		10/19/2023	29.43	68.98
		1/17/2024	36.65	61.76
		10/17/2024	26.32	72.09
MW-7	97.60	9/16/2015	21.70	75.90
		11/30/2015	26.78	70.82
		3/30/2016	40.46	57.14
		6/22/2016	25.98	71.62
		9/8/2016	18.55	79.05
		11/29/2016	25.73	71.87
		6/14/2017	25.35	72.25
		9/25/2017	19.44	78.16
		12/5/2017	28.21	69.39
		3/15/2018	39.85	57.75
		6/27/2018	25.06	72.54
		10/10/2018	22.26	75.34
		12/12/2018	30.25	67.35
		3/14/2019	40.81	56.79
		5/23/2019	33.75	63.85
		8/28/2019	25.00	72.60
		12/16/2019	29.41	68.19
		2/19/2020	37.10	60.50
		4/29/2020	37.87	59.73

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-7	97.60	8/24/2020	25.17	72.43
		10/28/2020	22.25	75.35
		3/24/2021	40.91	56.69
		6/28/2021	26.38	71.22
		9/22/2021	23.60	74.00
		11/15/2021	27.09	70.51
		2/8/2022	38.32	59.28
		4/12/2022	42.56	55.04
		7/27/2022	24.51	73.09
		10/13/2022	25.34	72.26
		1/31/2023	37.99	59.61
		5/11/2023	42.55	55.05
		7/18/2023	33.59	64.01
		10/19/2023	28.88	68.72
		1/17/2024	38.02	59.58
		10/17/2024	25.52	72.08
MW-8	98.87	9/16/2015	22.74	76.13
		11/30/2015	27.97	70.90
		3/30/2016	41.65	57.22
		6/22/2016	27.11	71.76
		9/8/2016	19.52	79.35
		11/29/2016	26.82	72.05
		6/14/2017	26.30	72.57
		9/25/2017	20.52	78.35
		12/5/2017	29.30	69.57
		3/15/2018	41.03	57.84
		6/27/2018	26.00	72.87
		10/10/2018	23.27	75.60
		12/12/2018	31.34	67.53
		3/14/2019	42.00	56.87
		5/23/2019	35.12	63.75
		8/28/2019	26.03	72.84
		12/17/2019	30.42	68.45
		2/19/2020	38.11	60.76

ENSOLUM

TABLE 1
GROUNDWATER ELEVATIONS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Top of Casing Elevation (feet) (1)	Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (1)
MW-8	98.87	4/29/2020	38.32	60.55
		8/25/2020	26.32	72.55
		10/28/2020	23.41	75.46
		3/24/2021	42.00	56.87
		6/28/2021	27.30	71.57
		9/22/2021	24.60	74.27
		11/15/2021	28.58	70.29
		2/8/2022	39.11	59.76
		4/12/2022	42.05	56.82
		7/27/2022	25.67	73.20
		10/13/2022	26.28	72.59
		1/31/2023	39.08	59.79
		5/11/2023	42.42	56.45
		7/18/2023	34.88	63.99
		10/19/2023	29.93	68.94
		1/17/2024	39.02	59.85
		10/17/2024	26.70	72.17

Notes:

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

bgs: below ground surface

BTOC: below top of casing

NM: not measured

--: indicates no GWEL or PSH measured

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Hilcorp Energy Company - Nell Hall #1
San Juan County, New Mexico

Ensolum Project No. 07A1988012

Well Identification	Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)
MW-4	3/17/2015	Not sampled					
	6/15/2015	16.01	6.78	0.635	977	2.74	-113.9
	9/16/2015	16.48	7.00	0.619	953	4.24	-83.1
	11/30/2015	15.59	7.01	0.680	1,046	2.60	-54.0
	3/30/2016	Not sampled					
	6/22/2016	16.00	6.65	--	1,090	1.10	-109.0
	9/8/2016	16.55	7.35	0.627	965	5.03	66.3
	11/29/2016	14.79	7.34	--	935	3.87	46.0
	6/14/2017	14.81	7.02	0.688	1,043	2.14	-135.6
	9/25/2017	16.08	6.90	--	800	--	--
	12/5/2017	14.31	6.84	0.658	1,013	1.32	-153.5
	3/15/2018	No parameter or samples collected due to low well volume					
	6/27/2018	16.51	6.77	--	1,060	--	-102.5
	3/14/2019	No parameter or samples collected due to low well volume					
	5/23/2019	14.40	7.10	0.510	980	--	-4.6
	8/27/2019	19.60	7.16	0.620	1,230	--	-3.2
	12/16/2019	8.40	6.40	0.590	1,200	2.68	13.5
	2/20/2020	15.80	6.36	0.650	1,300	8.19	-2.6
	4/29/2020	No parameter or samples collected due to low well volume					
	8/25/2020	22.40	6.18	0.640	1,290	1.04	16.2
	10/29/2020	17.20	6.59	0.570	1,140	4.63	-13.1
	3/24/2021	No parameter or samples collected due to low well volume					
	6/28/2021	No parameters collected due to equipment failure					
	9/22/2021	17.90	6.96	--	2,950	--	--
	11/15/2021	16.90	6.35	--	1,090	--	--
	2/9/2022	No parameter or samples collected due to low well volume					
	4/28/2022	No parameter or samples collected due to low well volume					
	7/27/2022	19.30	6.18	0.550	1,090	--	--
	10/13/2022	18.10	6.63	0.470	1,020	--	--
	1/31/2023	No parameter or samples collected due to low well volume					
	5/11/2023	No parameter or samples collected due to low well volume					
	7/18/2023	36.12	7.10	0.900	1,385	1.61	-94.80
	10/19/2023	25.66	7.25	1.030	1,580.8	1.73	-67.60
MW-5	3/17/2015	No parameters or sample collected due to low well volume.					
	6/15/2015	15.28	7.08	0.576	886	6.83	10.2
	9/16/2015	15.99	6.72	0.598	920	7.33	34.9
	11/30/2015	16.24	6.84	1.118	1,721	5.52	-50.5
	3/30/2016	No parameter or samples collected due to low well volume					
	6/22/2016	15.70	7.02	--	1,120	5.87	2.0
	9/8/2016	15.78	7.82	0.550	846	7.91	54.3
	11/29/2016	15.47	7.17	--	1,198	8.96	74.8
	6/14/2017	14.22	7.05	0.914	1,406	6.88	-80.1
	9/25/2017	15.60	6.83	--	947	--	--

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Hilcorp Energy Company - Nell Hall #1
San Juan County, New Mexico

Ensolum Project No. 07A1988012

Well Identification	Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)
MW-5	12/5/2017	15.16	7.05	0.888	1,367	4.66	-82.9
	3/15/2018	15.53	7.13	--	1,301	1.23	78.4
	6/27/2018	15.84	7.11	--	1,098	6.80	65.6
	3/14/2019	14.40	7.20	0.670	1,340	--	-15.6
	5/24/2019	14.40	7.17	0.560	1,130	--	-22.6
	8/28/2019	19.10	7.02	0.680	1,360	--	-20.2
	12/17/2019	10.20	6.57	0.640	1,250	7.16	-31.7
	2/21/2020	12.40	6.50	0.570	1,210	--	-30.5
	4/29/2020	20.70	6.71	0.530	1,060	4.04	-19.9
	8/25/2020	23.40	6.86	0.600	1,180	2.71	-15.6
	10/28/2020	17.50	6.54	0.670	1,330	4.46	-8.6
	3/24/2021	13.00	6.68	0.580	1,190	--	-21.7
	6/28/2021	**No parameters collected due to equipment failure**					
	9/22/2021	19.70	7.07	--	3,820	--	--
	11/15/2021	17.70	6.27	--	1,230	--	--
	2/9/2022	13.90	6.78	--	1,000	--	--
	4/28/2022	**No parameter or samples collected due to low well volume**					
	7/27/2022	18.40	6.64	0.510	1,020	--	--
	10/13/2022	17.90	6.79	0.470	1,090	--	--
	1/31/2023	12.60	7.32	0.490	960	--	--
	5/11/2023	**No parameter or samples collected due to low well volume**					
	7/18/2023	38.56	7.56	0.790	1,219	6.38	-49.9
	10/19/2023	24.92	7.68	0.860	1,318.6	6.87	-79.5
	1/17/2024	7.74	8.07	0.630	970.62	4.94	234.6
MW-6	3/17/2015	**Not sampled.**					
	6/15/2015	15.34	6.50	0.730	1,124	4.15	-95.9
	9/16/2015	15.69	6.13	0.846	1,302	2.92	-121.5
	11/30/2015	15.36	6.57	0.793	1,221	4.82	-72.4
	3/30/2016	**Not sampled**					
	6/22/2016	15.30	6.50	--	1,220	1.42	-91.4
	9/8/2016	15.51	7.43	0.849	1,307	1.86	-138.7
	11/29/2016	15.29	6.86	--	1,132	2.57	-86.1
	6/14/2014	14.10	6.73	0.775	1,192	2.02	-115.1
	9/25/2017	14.86	6.30	--	1,342	--	--
	12/5/2017	13.91	6.68	0.794	1,222	0.80	-155.0
	3/15/2018	15.21	6.78	--	1,553	--	-139.2
	6/27/2018	16.31	6.91	--	1,195	0.52	-125
	3/14/2019	**No parameter or samples collected due to low well volume**					
	5/23/2019	**No parameter or samples collected due to low well volume**					
	8/27/2019	20.60	6.73	0.580	1,160	--	13.7
	12/16/2019	9.50	6.13	0.590	1,150	5.15	12.2
	2/20/2020	15.40	6.04	0.670	1,340	--	11.1
	4/29/2020	**No parameter or samples collected due to low well volume**					

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Hilcorp Energy Company - Nell Hall #1
San Juan County, New Mexico

Ensolum Project No. 07A1988012

Well Identification	Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)
MW-6	8/25/2020	25.70	6.25	0.660	1,330	1.32	25.8
	10/28/2020	15.50	6.22	0.790	1,590	5.49	15.3
	3/24/2021	No parameter or samples collected due to low well volume					
	6/28/2021	No parameters collected due to equipment failure					
	9/22/2021	18.10	6.98	--	3,980	--	--
	11/15/2021	16.80	5.83	--	1,200	--	--
	2/9/2022	9.50	6.27	--	1,150	--	--
	4/28/2022	No parameter or samples collected due to low well volume					
	7/27/2022	18.20	5.97	0.550	1,110	--	--
	10/13/2022	17.30	6.18	0.620	1,250	--	--
	1/31/2023	8.60	6.85	0.650	1,290	--	--
	5/11/2023	No parameter or samples collected due to low well volume					
	7/18/2023	No parameter or samples collected due to low well volume					
	10/19/2023	24.10	7.24	0.930	1,435.8	2.37	-71.4
	10/17/2024	23.24	7.96	0.020	26.61	1.32	-138.6
MW-7	9/16/2015	15.07	6.52	0.581	893	7.15	72.8
	11/30/2015	15.01	6.69	1.067	1,641	4.99	21.0
	3/30/2016	16.77	6.91	0.800	1,250	6.03	40.0
	6/22/2016	15.30	6.93	--	1,090	1.22	53.5
	9/8/2016	16.29	7.62	0.441	679	7.49	5.6
	11/29/2016	14.11	7.07	--	1,006	6.35	85.7
	6/14/2017	13.95	6.82	0.809	1,245	4.88	-78.6
	9/25/2017	13.87	6.91	--	808	--	--
	12/5/2017	14.11	6.93	0.615	946	3.11	-82.8
	3/15/2018	15.26	6.91	--	1,037	1.09	77.1
	6/27/2018	15.07	6.95	--	887	5.60	42.5
	3/14/2019	12.20	7.40	0.510	--	--	-5.3
	5/23/2019	15.50	7.15	0.490	1,550	--	-8.8
	8/28/2019	18.00	7.08	0.440	880	--	-17.8
	12/16/2019	8.20	6.41	0.520	1,050	2.85	-39.1
	2/19/2020	14.70	6.46	0.570	1,120	9.25	-10.6
	4/29/2020	13.00	6.42	0.530	1,070	2.96	-6.5
	8/24/2020	19.80	6.51	0.510	1,020	2.17	-6.1
	10/28/2020	10.90	6.55	0.650	1,290	5.21	-12.4
	3/24/2021	10.90	6.55	0.650	1,290	5.21	-12.4
	6/28/2021	No parameters collected due to equipment failure					
	9/22/2021	20.30	7.13	--	2,590	--	--
	11/15/2021	16.60	6.11	--	1,410	--	--
	2/8/2022	14.50	6.24	--	1,040	--	--
	4/28/2022	No parameter or samples collected due to low well volume					
	7/27/2022	16.70	6.47	0.390	790	--	--
	10/13/2022	15.30	6.62	0.420	840	--	--
	1/31/2023	10.40	6.77	0.450	900	--	--

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Hilcorp Energy Company - Nell Hall #1
San Juan County, New Mexico

Ensolum Project No. 07A1988012

Well Identification	Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)
MW-7	5/11/2023	No parameter or samples collected due to low well volume					
	7/18/2023	35.77	7.14	0.790	1,218	2.37	54.6
	10/19/2023	24.05	7.46	0.890	1,376.4	6.14	289.7
	1/17/2024	8.02	7.95	0.010	11.98	2.60	212
	10/17/2024	22.24	8.00	0.00	3.19	5.30	136.3
MW-8	9/16/2015	14.18	6.65	0.534	821	6.37	73.2
	11/30/2015	13.85	7.20	0.565	869	4.59	-13.8
	3/30/2016	No parameter or samples collected due to low well volume					
	6/22/2016	14.70	7.04	--	970	0.66	-22.6
	9/8/2016	13.99	7.82	0.550	847	7.95	15.0
	11/29/2016	13.71	7.24	--	883	8.81	89.1
	6/14/2017	13.36	7.43	0.549	844	7.71	-71.9
	9/25/2017	12.78	6.73	--	823	--	--
	12/5/2017	12.36	7.09	0.509	783	2.53	-83.5
	3/15/2018	14.52	7.12	--	915	0.00	-135.0
	6/27/2018	14.48	7.14	--	748	5.57	62.2
	3/14/2019	No parameter or samples collected due to low well levels					
	5/23/2019	18.40	7.47	0.470	910	--	-30.3
	8/28/2019	18.40	7.07	0.480	960	--	-15.4
	12/17/2019	6.60	6.80	0.400	800	--	-36.6
	2/19/2020	15.30	6.21	0.440	880	9.57	-18.0
	4/29/2020	15.30	6.46	0.420	850	2.61	-10.1
	8/25/2020	23.00	6.62	0.480	970	2.04	-14
	10/28/2020	13.40	6.59	0.460	910	4.72	-19.8
	3/24/2021	No parameter or samples collected due to low well levels					
	6/28/2021	No parameters collected due to equipment failure					
	9/22/2021	17.10	7.14	--	2,650	--	--
	11/15/2021	13.10	6.24	--	890	--	--
	2/8/2022	14.70	6.53	--	940	--	--
	4/28/2022	No parameter or samples collected due to low well volume					
	7/27/2022	16.70	6.47	0.390	790	--	--
	10/13/2022	15.40	6.71	0.420	840	--	--
	1/31/2023	6.80	7.12	0.430	830	--	--
	5/11/2023	No parameter or samples collected due to low well volume					
	7/18/2023	36.27	7.14	0.740	1,140	2.34	-63.8
	10/19/2023	21.57	7.67	0.560	862.18	5.42	283.9
	1/17/2024	8.04	7.91	0.080	116.87	3.44	192.2
	10/17/2024	21.12	8.43	0.500	762.58	3.77	94.4

ENSOLUM

TABLE 2
GROUNDWATER QUALITY MEASUREMENTS
Hilcorp Energy Company - Nell Hall #1
San Juan County, New Mexico

Ensolum Project No. 07A1988012

Well Identification	Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)

Notes:

°C: degrees Celcius
DO: dissolved oxygen
g/L: grams per liter
uS/cm: microsiemens per centimeter
mg/L: milligrams per liter
mV: millivolts
ORP: oxidation-reduction potential
TDS: total dissolved solids
--: data not collected

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-4	3/8/2004	**0.013**	0.012	0.064	**1.4**	--
	7/19/2004	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--
	10/27/2004	**0.011**	0.008	0.021	0.13	--
	12/27/2004	< 0.0025	< 0.0025	< 0.0025	< 0.0005	--
	11/22/2005	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/15/2006	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	2/21/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	8/22/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/6/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	3/17/2008	< 0.005	< 0.005	< 0.005	< 0.005	--
	10/22/2008	< 0.005	< 0.005	< 0.005	< 0.005	--
	9/30/2009	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	6/9/2010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	9/27/2010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	6/21/2011	< 0.001	< 0.001	< 0.001	< 0.003	**1.21**
	9/27/2011	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/13/2011	< 0.001	< 0.001	< 0.001	< 0.003	0.201
	3/7/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.25
	6/4/2012	< 0.001	< 0.001	< 0.001	< 0.003	**1.17**
	9/20/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.25
	12/28/2012	< 0.001	< 0.001	< 0.001	< 0.003	0.748
	6/12/2013	< 0.001	< 0.001	< 0.001	< 0.003	**1.46**
	9/11/2013	< 0.001	< 0.001	< 0.001	< 0.003	<0.050
	12/13/2013	< 0.001	< 0.001	< 0.001	< 0.003	0.758
	6/18/2014	< 0.001	< 0.001	< 0.001	< 0.003	**1.83**
	9/15/2014	< 0.001	< 0.001	< 0.001	< 0.003	0.0544
	12/15/2014	< 0.001	< 0.001	< 0.001	< 0.003	0.456
	6/15/2015	< 0.001	< 0.001	< 0.001	< 0.003	**1.78**
	9/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	0.225
	11/30/2015	< 0.001	< 0.001	< 0.001	< 0.003	0.58
	3/30/2016	**No samples collected due to low well levels**				
	06/22/2016	< 0.001	< 0.001	< 0.001	< 0.003	**2.07**
	09/08/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/29/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	06/14/2017	< 0.001	< 0.001	< 0.001	< 0.003	**1.03**
	9/25/2017	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/05/2017	< 0.001	< 0.001	< 0.001	< 0.003	0.564
	3/15/2018	**No samples collected due to low well levels**				
	6/27/2018	< 0.001	< 0.001	< 0.001	< 0.003	**1.39**
	10/10/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	12/12/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/14/2019	**No samples collected due to low well levels**				
	5/23/2019	--	--	--	--	<0.10
	8/27/2019	--	--	--	--	<0.10
	12/16/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	2/19/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	4/29/2020	**No samples collected due to low well levels**				
	8/25/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-4	10/29/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/24/2021	**No samples collected due to low well levels**				
	6/28/2021	< 0.0025	< 0.0025	< 0.0025	< 0.005	**1.9**
	9/22/2021	< 0.001	< 0.001	< 0.001	< 0.002	< 0.02
	11/12/2021	< 0.001	< 0.001	< 0.001	< 0.0015	< 0.02
	2/9/2022	**No samples collected due to low well levels**				
	4/12/2022	**No samples collected due to low well levels**				
	7/27/2022	<0.001	<0.001	<0.001	<0.0015	**2.7**
	10/13/2022	<0.001	<0.001	<0.001	<0.0015	0.34
	1/31/2023	**No samples collected due to low well levels**				
	5/11/2023.	**No samples collected due to low well levels**				
	7/18/2023	<0.0010	<0.0010	<0.0010	<0.0015	**2.7**
	10/19/2023	<0.0010	<0.0010	<0.0010	<0.0015	**1.1**
MW-5	3/8/2004	0.0011	< 0.0005	0.001	0.017	--
	7/19/2004	< 0.0005	0.00055	< 0.0005	0.00072	--
	10/27/2004	< 0.0005	< 0.0005	< 0.0005	< 0.001	--
	12/27/2004	< 0.0005	< 0.0005	< 0.0005	< 0.001	--
	5/11/2005	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/22/2005	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/15/2006	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	2/21/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	8/22/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/6/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	3/17/2008	< 0.005	< 0.005	< 0.005	< 0.005	--
	10/22/2008	< 0.005	< 0.005	< 0.005	< 0.005	--
	3/30/2009	< 0.005	< 0.005	< 0.005	< 0.005	--
	9/30/2009	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	3/31/2010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	6/9/2010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	9/27/2010	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	3/16/2011	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02
	6/21/2011	< 0.001	< 0.001	< 0.001	< 0.003	< 0.1
	9/27/2011	< 0.001	< 0.001	< 0.001	< 0.003	0.0835
	12/13/2011	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	3/7/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	6/4/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	9/20/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/28/2012	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	6/12/2013	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	9/11/2013	< 0.001	< 0.001	< 0.001	< 0.003	0.0723
	12/13/2013	< 0.001	< 0.001	< 0.001	< 0.003	0.076
	3/21/2014	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	6/18/2014	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	9/15/2014	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/15/2014	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	3/17/2015	< 0.001	< 0.001	< 0.001	< 0.003	--
	6/15/2015	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-5	9/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/30/2015	< 0.001	< 0.001	< 0.001	< 0.003	0.0684
	3/30/2016	< 0.001	< 0.001	< 0.001	< 0.003	--
	6/22/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	09/08/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/29/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	06/14/2017	< 0.001	< 0.001	< 0.001	< 0.003	0.133
	9/25/2017	**0.147**	< 0.001	0.0264	0.0135	0.0568
	12/05/2017	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	3/15/2018	< 0.001	< 0.001	< 0.001	< 0.003	0.0795
	6/27/2018	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	10/10/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	12/12/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/14/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	5/24/2019	--	--	--	--	<0.10
	8/28/2019	--	--	--	--	<0.10
	12/17/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	2/21/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	4/29/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	8/25/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	10/29/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/24/2021	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	6/28/2021	< 0.0025	< 0.0025	< 0.0025	< 0.005	< 0.02
	9/22/2021	< 0.001	< 0.001	< 0.001	< 0.002	< 0.02
	11/15/2021	< 0.001	< 0.001	< 0.001	< 0.0015	< 0.02
	2/9/2022	<0.001	<0.001	<0.001	<0.0015	0.032
	4/12/2022	**No samples collected due to low well levels**				
	7/27/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	10/13/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	1/31/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	5/11/2023	**No samples collected due to low well levels**				
	7/18/2023	<0.0010	<0.0010	<0.0010	<0.0015	0.069
	10/19/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.10
	1/17/2024	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
MW-6	3/8/2004	**2.5**	0.014	**1.6**	**21.031**	--
	7/19/2004	< 0.0005	< 0.0005	0.00098	0.0026	--
	10/27/2004	0.0004	0.0003	0.0005	0.0021	--
	12/27/2004	**0.045**	0.0068	0.014	0.0717	--
	11/22/2005	**0.01**	0.0007	0.016	0.15	--
	11/15/2006	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	2/21/2007	**0.54**	< 0.001	0.076	**0.81**	--
	8/22/2007	< 0.0005	< 0.0007	< 0.0008	< 0.0008	--
	11/6/2007	**0.015**	< 0.0007	0.047	0.39	--
	3/18/2008	**0.16**	< 0.005	< 0.005	0.033	--
	10/22/2008	< 0.005	< 0.005	< 0.005	< 0.005	--
	3/30/2009	**0.042**	< 0.005	< 0.005	0.01	--
	9/30/2009	**0.096**	0.0047	0.062	0.12	**1.06**

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-6	4/1/2010	**0.48**	< 0.001	0.078	0.2	--
	6/9/2010	**0.71**	< 0.001	0.42	0.52	**11.4**
	9/27/2010	**0.30**	< 0.001	0.25	0.41	0.676
	3/16/2011	**0.18**	< 0.001	0.044	0.072	**8.66**
	6/21/2011	**0.461**	0.00048	0.454	**0.677**	**9.45**
	9/27/2011	**0.237**	< 0.005	0.197	0.225	**19.6**
	12/13/2011	**0.298**	0.0083	0.154	0.141	**11.6**
	3/7/2012	**0.0477**	< 0.001	0.0073	0.0192	**22.5**
	6/4/2012	**0.649**	< 0.01	0.309	0.314	**19.2**
	9/20/2012	**0.266**	< 0.005	0.065	0.0355	**9.53**
	12/28/2012	**0.319**	< 0.005	0.0764	0.0452	**8.06**
	6/12/2013	**0.442**	< 0.005	0.159	0.209	**16.6**
	9/11/2013	**0.109**	< 0.001	0.0208	0.0123	**2.26**
	12/13/2013	**0.467**	< 0.001	0.101	0.0537	**5.9**
	6/18/2014	**0.384**	< 0.005	0.152	0.177	**15.5**
	9/15/2014	**0.502**	< 0.001	0.101	0.064	**7.75**
	12/15/2014	**0.333**	< 0.001	0.0758	0.0249	**5.45**
	6/15/2015	**0.354**	< 0.005	0.167	0.222	**13.1**
	9/16/2015	**0.294**	< 0.005	0.134	0.0615	**11**
	11/30/2015	**0.413**	< 0.01	0.0642	< 0.03	**7.35**
	3/30/2016	**No samples collected due to low well levels**				
	6/22/2016	**0.419**	< 0.010	0.0718	0.0435	**16.2**
	09/08/2016	**0.209**	< 0.005	0.0339	< 0.015	**6.07**
	11/29/2016	**0.257**	< 0.005	0.0649	0.0203	**6.32**
	06/14/2017	**0.309**	< 0.005	0.103	0.0916	**10.6**
	9/25/2017	**0.157**	< 0.001	0.0286	0.0145	**5.73**
	12/05/2017	**0.236**	< 0.001	0.0243	0.007	**7.58**
	3/15/2018	**0.389**	< 0.001	0.0544	0.0376	--
	6/27/2018	**0.389**	< 0.001	0.0683	0.0427	**10.00**
	10/10/2018	**0.0125**	< 0.001	0.0038	< 0.003	**1.68**
	12/12/2018	**0.146**	< 0.001	0.00285	< 0.003	**1.66**
	3/14/2019	**No samples collected due to low well levels**				
	5/23/2019	**0.164**	< 0.001	0.0926	0.0377	**3.05**
	8/27/2019	**0.187**	< 0.001	0.0479	0.00321	**3.54**
	12/16/2019	**0.222**	< 0.001	0.0149	< 0.003	0.344
	2/20/2020	**0.121**	< 0.001	0.0046	< 0.003	**1.65**
	4/29/2020	**No samples collected due to low well levels**				
	8/25/2020	**0.295**	< 0.001	0.0123	< 0.003	**2.8**
	10/28/2020	**0.112**	< 0.001	< 0.001	< 0.003	**1.55**
	3/24/2021	**No samples collected due to low well levels**				
	6/28/2021	**0.073**	< 0.0025	0.065	< 0.005	**12**
	9/22/2021	0.0033	< 0.001	0.0054	< 0.002	**2.5**
	11/12/2021	**0.140**	< 0.001	0.0047	< 0.0015	0.99
	2/9/2022	**0.180**	<0.001	0.0081	<0.0015	--
	4/12/2022	**No samples collected due to low well levels**				
	7/27/2022	**0.0052**	<0.001	0.011	0.0016	**13**
	10/13/2022	**0.020**	<0.001	0.0044	<0.0015	**4.0**

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-6	1/31/2023	**0.029**	<0.0020	<0.0020	<0.0030	0.36
	5/11/2023	**No samples collected due to low well levels**				
	7/18/2023	<0.0010	<0.0010	<0.0010	<0.0015	0.54
	10/19/2023	**0.017**	<0.0020	0.0074	0.0034	**2.8**
	1/17/2024	**No samples collected due to low well levels**				
	10/17/2024	**0.019**	<0.0020	0.0094	<0.0030	**3.8**
MW-7	9/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/30/2015	< 0.001	< 0.001	< 0.001	< 0.003	0.0637
	3/30/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.50
	6/22/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.50
	09/08/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/29/2016	< 0.001	< 0.001	< 0.001	< 0.003	<0.05
	06/14/2017	< 0.001	< 0.001	< 0.001	< 0.003	<0.05
	9/25/2017	< 0.001	< 0.001	< 0.001	< 0.003	<0.05
	12/05/2017	< 0.001	< 0.001	< 0.001	< 0.003	<0.05
	3/15/2018	< 0.001	< 0.001	< 0.001	< 0.003	0.0936
	6/27/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.05
	10/10/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	12/11/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/14/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	5/23/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	8/28/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	12/16/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	2/19/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	4/29/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	8/24/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	10/28/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/24/2021	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	6/28/2021	< 0.0025	< 0.0025	< 0.0025	< 0.005	< 0.020
	9/22/2021	< 0.001	< 0.001	< 0.001	< 0.002	<0.020
	11/12/2021	< 0.001	< 0.001	< 0.001	< 0.0015	<0.020
	2/9/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	4/12/2022	**No samples collected due to low well levels**				
	7/27/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	10/13/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	1/31/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	5/11/2023	**No samples collected due to low well levels**				
	7/18/2023	<0.0010	<0.0010	<0.0010	<0.0015	0.54
	10/19/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	1/17/2024	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	10/17/2024	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
MW-8	9/16/2015	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/30/2015	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	3/30/2016	< 0.001	< 0.001	< 0.001	< 0.003	0.412
	6/22/2016	< 0.001	< 0.001	< 0.001	< 0.003	0.0753
	09/08/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	11/29/2016	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05

ENSOLUM

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
Nell Hall #1
Hilcorp Energy Company
San Juan County, New Mexico

Well Identification	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylenes (mg/L)	Dissolved Iron (mg/L)
NMWQCC Standards		**0.005**	**1.0**	**0.70**	**0.62**	**1.0**
MW-8	06/14/2017	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	9/25/2017	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/5/2017	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	3/15/2018	< 0.001	< 0.001	< 0.001	< 0.003	0.237
	6/27/2018	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	10/10/2018	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05
	12/11/2018	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/14/2019	**No samples collected due to low well levels**				
	5/23/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	8/28/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	12/17/2019	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	2/19/2020	< 0.001	< 0.001	< 0.001	< 0.003	0.126
	4/29/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	8/24/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	10/28/2020	< 0.001	< 0.001	< 0.001	< 0.003	<0.10
	3/24/2021	**No samples collected due to low well levels**				
	6/28/2021	< 0.0025	< 0.0025	< 0.0025	< 0.005	<0.020
	9/22/2021	< 0.001	< 0.001	< 0.001	< 0.002	<0.020
	11/15/2021	< 0.001	< 0.001	< 0.001	< 0.0015	<0.020
	2/9/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	4/12/2022	**No samples collected due to low well levels**				
	7/27/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	10/13/2022	<0.001	<0.001	<0.001	<0.0015	<0.020
	1/31/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	5/11/2023	**No samples collected due to low well levels**				
	7/18/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	10/19/2023	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	1/17/2024	<0.0010	<0.0010	<0.0010	<0.0015	<0.020
	10/17/2024	<0.0010	<0.0010	<0.0010	<0.0015	<0.020

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

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kate Kaufman
Hilcorp Energy
PO BOX 4700
Farmington, New Mexico 87499

Generated 10/22/2024 2:53:15 PM

JOB DESCRIPTION

Nell Hall #1

JOB NUMBER

885-13935-1

Eurofins Albuquerque
4901 Hawkins NE
Albuquerque NM 87109

See page two for job notes and contact information.

my EOL

Eurofins Albuquerque

Job Notes

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization

Generated
10/22/2024 2:53:15 PM

Authorized for release by
Michelle Garcia, Project Manager
michelle.garcia@et.eurofinsus.com
(505)345-3975

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Laboratory Job ID: 885-13935-1

Table of Contents

Definitions/Glossary

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

Client: Hilcorp Energy
Project: Nell Hall #1

Job ID: 885-13935-1

Job ID: 885-13935-1 Eurofins Albuquerque

Job Narrative
885-13935-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 10/18/2024 7:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.2°C.

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

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

Client Sample Results

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Client Sample ID: MW-6

Lab Sample ID: 885-13935-1

Date Collected: 10/17/24 14:00
Matrix: Water
Date Received: 10/18/24 07:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**19**		2.0		ug/L			10/21/24 21:59	2
Ethylbenzene	**9.4**		2.0		ug/L			10/21/24 21:59	2
Toluene	ND		2.0		ug/L			10/21/24 21:59	2
Xylenes, Total	ND		3.0		ug/L			10/21/24 21:59	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 130*		*10/21/24 21:59*	*2*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*10/21/24 21:59*	*2*
Dibromofluoromethane (Surr)	*106*		*70 - 130*		*10/21/24 21:59*	*2*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/21/24 21:59*	*2*

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.8**		0.20		mg/L			10/21/24 14:45	10

Client Sample Results

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Client Sample ID: MW-7

Date Collected: 10/17/24 12:55
Date Received: 10/18/24 07:00

Lab Sample ID: 885-13935-2

Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 21:02	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 21:02	1
Toluene	ND		1.0		ug/L			10/18/24 21:02	1
Xylenes, Total	ND		1.5		ug/L			10/18/24 21:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*10/18/24 21:02*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*10/18/24 21:02*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*10/18/24 21:02*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*10/18/24 21:02*	*1*

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.020		mg/L			10/21/24 14:48	1

Client Sample Results

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Client Sample ID: MW-8

Lab Sample ID: 885-13935-3

Date Collected: 10/17/24 12:00
Matrix: Water
Date Received: 10/18/24 07:00

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 21:29	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 21:29	1
Toluene	ND		1.0		ug/L			10/18/24 21:29	1
Xylenes, Total	ND		1.5		ug/L			10/18/24 21:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*10/18/24 21:29*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*10/18/24 21:29*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*10/18/24 21:29*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/18/24 21:29*	*1*

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.020		mg/L			10/21/24 14:52	1

QC Sample Results

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

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

Lab Sample ID: MB 885-14528/5
Matrix: Water
Analysis Batch: 14528

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/18/24 11:28	1
Ethylbenzene	ND		1.0		ug/L			10/18/24 11:28	1
Toluene	ND		1.0		ug/L			10/18/24 11:28	1
Xylenes, Total	ND		1.5		ug/L			10/18/24 11:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*		*10/18/24 11:28*	*1*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*		*10/18/24 11:28*	*1*
Dibromofluoromethane (Surr)	*98*		*70 - 130*		*10/18/24 11:28*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*10/18/24 11:28*	*1*

Lab Sample ID: LCS 885-14528/4
Matrix: Water
Analysis Batch: 14528

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.1	20.3		ug/L		101	70 - 130		
Toluene			20.2	20.5		ug/L		102	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*
Dibromofluoromethane (Surr)	*97*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: MB 885-14587/5
Matrix: Water
Analysis Batch: 14587

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

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0		ug/L			10/21/24 11:58	1
Ethylbenzene	ND		1.0		ug/L			10/21/24 11:58	1
Toluene	ND		1.0		ug/L			10/21/24 11:58	1
Xylenes, Total	ND		1.5		ug/L			10/21/24 11:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*70 - 130*		*10/21/24 11:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*10/21/24 11:58*	*1*
Dibromofluoromethane (Surr)	*100*		*70 - 130*		*10/21/24 11:58*	*1*
Toluene-d8 (Surr)	*102*		*70 - 130*		*10/21/24 11:58*	*1*

Lab Sample ID: LCS 885-14587/4
Matrix: Water
Analysis Batch: 14587

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.1	20.1		ug/L		100	70 - 130		
Toluene			20.2	20.2		ug/L		100	70 - 130		

QC Sample Results

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 130*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MRL 885-14659/16
Matrix: Water
Analysis Batch: 14659

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

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			0.0200	0.0169	J	mg/L		84	50 - 150		

QC Association Summary

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

GC/MS VOA

Analysis Batch: 14528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-13935-2	MW-7	Total/NA	Water	8260B	
885-13935-3	MW-8	Total/NA	Water	8260B	
MB 885-14528/5	Method Blank	Total/NA	Water	8260B	
LCS 885-14528/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 14587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-13935-1	MW-6	Total/NA	Water	8260B	
MB 885-14587/5	Method Blank	Total/NA	Water	8260B	
LCS 885-14587/4	Lab Control Sample	Total/NA	Water	8260B	

Metals

Filtration Batch: 14530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-13935-1	MW-6	Dissolved	Water	Filtration	
885-13935-2	MW-7	Dissolved	Water	Filtration	
885-13935-3	MW-8	Dissolved	Water	Filtration	

Analysis Batch: 14659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
885-13935-1	MW-6	Dissolved	Water	200.7 Rev 4.4	14530
885-13935-2	MW-7	Dissolved	Water	200.7 Rev 4.4	14530
885-13935-3	MW-8	Dissolved	Water	200.7 Rev 4.4	14530
MRL 885-14659/16	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	

Lab Chronicle

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Client Sample ID: MW-6
Lab Sample ID: 885-13935-1
Date Collected: 10/17/24 14:00
Matrix: Water
Date Received: 10/18/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		2	14587	JR	EET ALB	10/21/24 21:59
Dissolved	Filtration	Filtration			14530	TC	EET ALB	10/18/24 09:17
Dissolved	Analysis	200.7 Rev 4.4		10	14659	VP	EET ALB	10/21/24 14:45

Client Sample ID: MW-7
Lab Sample ID: 885-13935-2
Date Collected: 10/17/24 12:55
Matrix: Water
Date Received: 10/18/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	14528	JR	EET ALB	10/18/24 21:02
Dissolved	Filtration	Filtration			14530	TC	EET ALB	10/18/24 09:17
Dissolved	Analysis	200.7 Rev 4.4		1	14659	VP	EET ALB	10/21/24 14:48

Client Sample ID: MW-8
Lab Sample ID: 885-13935-3
Date Collected: 10/17/24 12:00
Matrix: Water
Date Received: 10/18/24 07:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	14528	JR	EET ALB	10/18/24 21:29
Dissolved	Filtration	Filtration			14530	TC	EET ALB	10/18/24 09:17
Dissolved	Analysis	200.7 Rev 4.4		1	14659	VP	EET ALB	10/21/24 14:52

Laboratory References:

EET ALB = Eurofins Albuquerque, 4901 Hawkins NE, Albuquerque, NM 87109, TEL (505)345-3975

Accreditation/Certification Summary

Client: Hilcorp Energy
Project/Site: Nell Hall #1

Job ID: 885-13935-1

Laboratory: Eurofins Albuquerque

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
New Mexico	State	NM9425, NM0901	02-26-25

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.7 Rev 4.4		Water	Iron
8260B		Water	Benzene
8260B		Water	Ethylbenzene
8260B		Water	Toluene
8260B		Water	Xylenes, Total

Oregon	NELAP	NM100001	02-26-25

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: Nell Hall #1

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☑ Yes ☐ No mgp

# of Coolers: 1

Cooler Temp(including CF): 2.0 +0.2 = 2.2 °C

HALL ENVIRONMENTAL ANALYSIS LABOR
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 871(
Tel. 505-345-3975 Fax 505-345-4107

885-13935 COC

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	Dissolved Fe 500ml HDPE *	BTEX 8260 40ml VOA HCl
10-17	1400	Water	MW-6	Various	Various		X	X
"	1255	Water	MW-7	Various	Various		X	X
"	1200	Water	MW-8	Various	Various		X	X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/17/24	1613				10/17/24	1613
10/17/24	1717			Courier	10/18/24	7:00

Remarks: *Dissolved Fe is to be filterd 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.

Login Sample Receipt Checklist

Client: Hilcorp Energy Job Number: 885-13935-1

Login Number: 13935 **List Source: Eurofins Albuquerque**
List Number: 1
Creator: Casarrubias, Tracy

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

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 03, 2024

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

RE: Nell Hall 1 OrderNo.: 2401846

Dear Mitch Killough:

Eurofins Environment Testing South Central, LLC received 3 sample(s) on 1/20/2024 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 do not hesitate to contact Eurofins Albuquerque 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 **2401846**
Date Reported: **2/3/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-5
Project: Nell Hall 1
Collection Date: 1/17/2024 11:45:00 AM
Lab ID: 2401846-001 **Matrix:** AQUEOUS **Received Date:** 1/20/2024 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	1/25/2024 5:43:06 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	ND	1.0		µg/L	1	1/23/2024 2:09:00 PM
Toluene	ND	1.0		µg/L	1	1/23/2024 2:09:00 PM
Ethylbenzene	ND	1.0		µg/L	1	1/23/2024 2:09:00 PM
Xylenes, Total	ND	1.5		µg/L	1	1/23/2024 2:09:00 PM
Surr: 4-Bromofluorobenzene	130	70-130		%Rec	1	1/23/2024 2:09:00 PM
Surr: Toluene-d8	102	70-130		%Rec	1	1/23/2024 2:09:00 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 **2401846**
Date Reported: **2/3/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-7
Project: Nell Hall 1
Collection Date: 1/17/2024 11:25:00 AM
Lab ID: 2401846-002 **Matrix:** AQUEOUS **Received Date:** 1/20/2024 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	1/25/2024 5:50:04 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	ND	1.0		µg/L	1	1/23/2024 3:23:00 PM
Toluene	ND	1.0		µg/L	1	1/23/2024 3:23:00 PM
Ethylbenzene	ND	1.0		µg/L	1	1/23/2024 3:23:00 PM
Xylenes, Total	ND	1.5		µg/L	1	1/23/2024 3:23:00 PM
Surr: 4-Bromofluorobenzene	122	70-130		%Rec	1	1/23/2024 3:23:00 PM
Surr: Toluene-d8	100	70-130		%Rec	1	1/23/2024 3:23:00 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 **2401846**
Date Reported: **2/3/2024**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW-8
Project: Nell Hall 1
Collection Date: 1/17/2024 11:00:00 AM
Lab ID: 2401846-003 **Matrix:** AQUEOUS **Received Date:** 1/20/2024 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **VP**
Iron	ND	0.020		mg/L	1	1/25/2024 6:01:42 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **CCM**
Benzene	ND	1.0		µg/L	1	1/23/2024 3:48:00 PM
Toluene	ND	1.0		µg/L	1	1/23/2024 3:48:00 PM
Ethylbenzene	ND	1.0		µg/L	1	1/23/2024 3:48:00 PM
Xylenes, Total	ND	1.5		µg/L	1	1/23/2024 3:48:00 PM
Surr: 4-Bromofluorobenzene	124	70-130		%Rec	1	1/23/2024 3:48:00 PM
Surr: Toluene-d8	102	70-130		%Rec	1	1/23/2024 3:48:00 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#: **2401846**

03-Feb-24

Client: HILCORP ENERGY

Project: Nell Hall 1

Sample ID: **MB-B**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793034** Units: **mg/L**

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

Sample ID: **LCSLL-B**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793035** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020	0.02000	0	98.6	50	150			

Sample ID: **LCS-B**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793036** 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	101	85	115			

Sample ID: **2401846-002BMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-7**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793822** 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	101	70	130			

Sample ID: **2401846-002BMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-7**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793823** 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	100	70	130	1.12	20	

Sample ID: **2401846-003BMS**	SampType: **MS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-8**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793828** 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	98.1	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#: **2401846**

03-Feb-24

Client: HILCORP ENERGY

Project: Nell Hall 1

Sample ID: **2401846-003BMSD**	SampType: **MSD**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **MW-8**	Batch ID: **B102671**	RunNo: **102671**
Prep Date:	Analysis Date: **1/25/2024**	SeqNo: **3793829** 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	99.0	70	130	0.899	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2401846**

03-Feb-24

Client: HILCORP ENERGY

Project: Nell Hall 1

Sample ID: **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSW**	Batch ID: **SL102628**	RunNo: **102628**
Prep Date:	Analysis Date: **1/23/2024**	SeqNo: **3791695** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	116	70	130			
Toluene	19	1.0	20.00	0	95.8	70	130			
Surr: 1,2-Dichloroethane-d4	13		10.00		131	70	130			S
Surr: 4-Bromofluorobenzene	12		10.00		122	70	130			
Surr: Dibromofluoromethane	12		10.00		118	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBW**	Batch ID: **SL102628**	RunNo: **102628**
Prep Date:	Analysis Date: **1/23/2024**	SeqNo: **3791707** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	13		10.00		131	70	130			S
Surr: 4-Bromofluorobenzene	12		10.00		120	70	130			
Surr: Dibromofluoromethane	12		10.00		116	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **2401846-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **MW-5**	Batch ID: **SL102628**	RunNo: **102628**
Prep Date:	Analysis Date: **1/23/2024**	SeqNo: **3791781** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	115	70	130			
Toluene	20	1.0	20.00	0	98.5	70	130			
Surr: 1,2-Dichloroethane-d4	13		10.00		133	70	130			S
Surr: 4-Bromofluorobenzene	12		10.00		123	70	130			
Surr: Dibromofluoromethane	12		10.00		118	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID: **2401846-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **MW-5**	Batch ID: **SL102628**	RunNo: **102628**
Prep Date:	Analysis Date: **1/23/2024**	SeqNo: **3791782** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	109	70	130	5.61	20	
Toluene	19	1.0	20.00	0	94.2	70	130	4.47	20	

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#: **2401846**

03-Feb-24

Client: HILCORP ENERGY

Project: Nell Hall 1

Sample ID: **2401846-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **MW-5**	Batch ID: **SL102628**	RunNo: **102628**
Prep Date:	Analysis Date: **1/23/2024**	SeqNo: **3791782** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	13		10.00		130	70	130	0	0	
Surr: 4-Bromofluorobenzene	13		10.00		130	70	130	0	0	
Surr: Dibromofluoromethane	12		10.00		116	70	130	0	0	
Surr: Toluene-d8	10		10.00		102	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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.		

eurofins | Environment Testing

Eurofins Environment Testing South Central, LLC
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: 2401846   RcptNo: 1

Received By: Cheyenne Cason   1/20/2024 8:05:00 AM   [signature]

Completed By: Cheyenne Cason   1/20/2024 8:43:47 AM   [signature]

Reviewed By: [signature]   1/22/24

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 ☐
   Samples not frozen
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 ☐ HNO3
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☑ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? Yes ☑ No ☐
    (Note discrepancies on chain of custody)
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? Yes ☑ No ☐
    (If no, notify customer for authorization.)

# of preserved bottles checked for pH: 3
(<2 or >12 unless noted)
Adjusted? yes
Checked by: CMC 1/22/24

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:

Poured off and Filered from unpreserved volume for all samples (Lot # 17866106) and added ~0.4mls HNO3 (Chem # 7342) to all samples - CMC 1/22/24

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	-0.4	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: Nell Hall #1

Project #:

Project Manager: Mitch Killough

Sampler: Brandon Sinclair

On Ice: ☒ Yes ☐ No Yogi

# of Coolers: 1

Cooler Temp(including CF): -0.4 - 0 = -0.4

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. 2401846	Dissolved Fe 500ml HDPE *	BTEX 8260 40ml VOA HCl
		~~Water~~	~~MW-4~~	~~Various~~	~~Various~~		~~X~~	~~X~~
1-17	1145	Water	MW-5	Various	Various	001	X	X
		~~Water~~	~~MW-6~~	~~Various~~	~~Various~~		~~X~~	~~X~~
1-17	1125	Water	MW-7	Various	Various	002	X	X
1-17	1100	Water	MW-8	Various	Various	003	X	X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
1-19	1710	[signature]	[signature]		1/19/24	1710
1/19/24	1750	[signature]	[signature]	Courier	1/20/2	0805

Remarks: *Dissolved Fe is to be filterd and preserved in the lab. Special pricing, see Andy.
Samples not frozen [initials] 1/20/24

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.

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 442044
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2024 Annual Groundwater Monitoring Report for Nell Hall #1: content satisfactory 1. Continue to collect groundwater samples at MW-6, MW-7, MW-8 on a semi-annual basis for BTEX and dissolved iron as prescribed in report. 2. As monitored natural attenuation has demonstrated to achieve remediation and only residual concentrations remain, continue as prescribed in this report. 3. Please submit the status update and 2025 Annual Groundwater Monitoring Report to OCD no later than April 1, 2026.	4/23/2025