REVIEWED
By Mike Buchanan at 8:54 am, May 14, 2024

March 7, 2022

New Mexico Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division
1000 Rio Brazos
Aztec, New Mexico 87410

Review of the 2021 Annual Groundwater Monitoring Report for Flora Vista #1: Content Satisfactory
1. Reduce sampling frequency to semi-annual in MWs: MW-1 through MW-5 for BTEX, dissolved iron, and dissolved manganese.
2. Increase sampling frequency to eight (8) consecutive quarterly monitoring events when COCs have been reduced to below the allowable concentrations in the NM WQCC.
3. Sampling wells DW-1 and DW-2 may be suspended at this time; however, a variance may need to be requested since the eight (8) consecutive quarterly sample events has not been able to be achieved.
4. Continue groundwater monitoring events as prescribed, and submit the 2022 and 2023 reports if they have not already been submitted through the online portal.

Subject: **2021 Annual Groundwater Monitoring Report**
Flora Vista #1
San Juan County, New Mexico
NMOCD Incident Number: nCS1907338841
NMOCD Administrative Order: 3R-173

To Whom it May Concern:

WSP USA Inc. (WSP), on behalf of Hilcorp Energy Company (Hilcorp), presents this 2021 Annual Groundwater Monitoring Report to the New Mexico Oil Conservation Division (NMOCD) to document groundwater monitoring activities conducted at the Flora Vista #1 natural gas production well (Site) during 2021. The Site is located on private property in Unit Letter P, Section 22, Township 30N, Range 12W, of San Juan County, New Mexico (Figure 1). Currently, there are five groundwater monitoring wells onsite which are monitored for groundwater elevations and sampled quarterly. Two additional domestic wells are also sampled annually as part of Site monitoring activities.

SITE BACKGROUND

Several historical releases have occurred at the Site. An earthen dehydrator pit was closed through the online portal and subsequently remediated between 1994 and 1996 by a previous operator. Reports documenting these activities were submitted to the NMOCD, which issued a letter to the operator on January 24, 1997 approving pit closure and remediation. Additionally, Burlington Resources (Burlington) encountered historical hydrocarbon-impacted soil during Site construction activities in 2003. Burlington ultimately excavated 9,443 cubic yards of impacted soil in attempts to remediate the Site. Burlington was unable to remove all impacted soil from the Site and impacted soils were left in place. Groundwater was encountered in the excavation at a depth of approximately 25 feet below ground surface (bgs). In order to address the remaining impacts, Burlington sprayed approximately 80 barrels (bbls) of potassium permanganate into the excavation prior to backfilling in hopes of enhancing degradation of the petroleum hydrocarbon impacts.

After completion of the excavation, monitoring well MW-1 was installed in 2003 at a down gradient location from the center of the excavation (Figure 2). Groundwater monitoring included analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), as well as total petroleum hydrocarbons (TPH), with analytical results indicating the presence of benzene and total xylenes above regulatory standards. At the request of the NMOCD, monitoring wells MW-2, MW-3, and MW-4 were installed at the Site in August 2008. Additionally, two domestic water wells located downgradient of the Site (DW-1 and DW-2 shown on Figure 2) were included in yearly sampling events to ensure impacted groundwater was not migrating off-Site and onto adjacent properties.

Based on the presence of dissolved-phase hydrocarbons in the groundwater, a mobile-dual phase extraction event was conducted in August 2013 and removed approximately 1,300 gallons of impacted groundwater. In order to assess potential soil and groundwater impacts originating from the on-Site above ground storage tanks (shown on Figure 2), monitoring well MW-5 was installed in September 2015. Groundwater analytical data from MW-5 indicated that there were petroleum hydrocarbon constituents exceeding regulatory standards in this area. In order to further enhance remediation of residual petroleum hydrocarbons at the Site, GHD (former environmental consultant for the Site) conducted an in-situ chemical oxidation (ISCO) event in October of 2016. GHD injected a 15 percent (%) PersulfOx® oxidant solution into wells MW-1 and MW-5 to promote oxidation of soluble metals and hydrocarbons in the groundwater. Since 2016, groundwater at the Site has been continually gauged and monitored for BTEX, dissolved iron, and dissolved manganese constituents.

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SITE GROUNDWATER CLEANUP STANDARDS

NMOCD requires groundwater-quality standards presented by the New Mexico Water Quality Control Commission (NMWQCC) in 20.6.2.3103 of the New Mexico Administrative Code (NMAC) be met. The following standards are presented for the constituents of concern at the Site in milligrams per liter (mg/L).

ANALYTE	LIMIT
Benzene	0.005 mg/L
Toluene	1.0 mg/L
Ethylbenzene	0.70 mg/L
Total Xylenes	0.62 mg/L
Iron	1.0 mg/L
Manganese	0.20 mg/L

GROUNDWATER SAMPLING ACTIVITIES AND RESULTS

Groundwater-level measurements and samples were collected in February, June, September, and November 2021 from wells MW-1 through MW-5. Samples were not collected for laboratory analysis from MW-1 in September 2021 due to insufficient water volume in the well. In addition, domestic water well DW-1 was sampled in June 2021; however, no sample was collected from DW-2 during this event due to a malfunctioning well pump. The following sections summarize the sampling procedures and results gathered during these events.

GROUNDWATER-LEVEL MEASUREMENTS

Static groundwater-level monitoring included recording depth-to-groundwater measurements of each monitoring well 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. Groundwater elevations measured in monitoring wells during the 2021 sampling events are presented in Table 1 and were used to develop groundwater potentiometric surface maps (Figures 3, 4, 5, and 6). The inferred groundwater flow direction is to the south-southeast.

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, turbidity, electrical conductivity, dissolved oxygen, and oxidation-reduction potential, were collected during the purging process and are presented in Table 2. Following well purging, groundwater samples were placed directly into laboratory-provided vials and labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. They were immediately sealed with zero headspace and packed on ice to preserve samples. Samples from February 2021 were submitted to Pace Analytical for analysis of BTEX by Environmental Protection Agency (EPA) Method 8260B, and dissolved manganese and iron by EPA Method 6010B. Samples from June, September, and November 2021 were submitted to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico, for analysis of BTEX by EPA method 8260, and dissolved manganese and iron by EPA method 200.7. Proper chain-of-custody (COC) 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. Analytical laboratory reports from the sampling events are included as Enclosure A.

GROUNDWATER ANALYTICAL RESULTS

Benzene concentrations in groundwater exceeded the NMWQCC standard during one or more quarters from wells MW-1 and MW-5. Total xylenes concentrations also exceeded NMWQCC standards in well MW-5 during the June and November 2021 sampling events. Dissolved iron concentrations exceeded NMWQCC standards in wells MW-1, MW-3, MW-4, and MW-5 during one or more sampling events. Lastly, dissolved manganese concentrations exceeded NMWQCC standards in wells MW1, MW-2, MW4, and MW-5 during one or more sampling events. Toluene and ethylbenzene were not detected above the NMWQCC standards in any of the sampled wells during 2021 quarterly sampling events.

A summary of analytical results are presented in Table 3 and on Figure 7.

CONCLUSIONS

Overall, the presence of BTEX concentrations in groundwater have decreased over time at the Site. BTEX concentrations in groundwater have not been detected above NMWQCC standards in well MW-4 since 2019. Benzene concentrations in wells MW-1 and MW-5 have been greatly reduced and have fluctuated above and below the NMWQCC standard for the last several years. Data collected at the Site suggests that the petroleum-hydrocarbon plume is stable and overall reducing in size and magnitude through natural attenuation.

Concentrations of dissolved iron and manganese continue to be detected above NMWQCC standards in MW-1, MW-4, and MW-5. Elevated dissolved iron and manganese concentrations are often a biproduct of petroleum degradation. Biodegradation of petroleum hydrocarbons can often create anaerobic and reducing conditions in groundwater, which can result in the dissolution of iron and manganese from the surrounding soil and rock strata and consequently elevate concentrations of these inorganic constituents. Analytical data collected at the Site indicates dissolved iron and manganese are present in groundwater in the same wells with elevated BTEX concentrations, demonstrating these constituents are related to the degradation of the hydrocarbon plume. As groundwater conditions at the Site continue to equilibrate and dissolved oxygen increases, groundwater conditions will become increasingly aerobic. As this happens, dissolved iron and manganese have the ability to precipitate out of solution leading to decreased concentrations in groundwater.

Additionally, no detectable concentrations of BTEX, dissolved manganese, and/or dissolved iron are present in domestic water wells DW-1 and DW-2, located downgradient of the Site. This data indicates that the plume is confined to the Site.

RECOMMENDATIONS

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

- Reduce sampling frequency to semi-annually for wells MW-1 through MW-5 for BTEX, dissolved iron, and dissolved manganese. Once concentrations decrease to below NMQWCC standards, sampling frequency will be increased to quarterly until eight consecutive quarters show compliance with applicable standards.
- Eliminate sampling of wells DW-1 and DW-2. Constituents of concern have not been present in these wells above NMQCC standards since they were first sampled in 2009/2010, indicating that the Site groundwater plume has not migrated significantly away from the release location.

WSP appreciates the opportunity to provide these environmental services to Hilcorp. Please contact either of the undersigned with any questions at (970) 385-1096.

Kind regards,

Stuart Hyde, L.G.
Senior Geologist

Daniel Moir, P.G.
Sr. Lead Consultant, Geologist

Enclosed:

Figure 1: Site Location Map
Figure 2: Site Map
Figure 3: 2021 Q1 Groundwater Elevation Map
Figure 4: 2021 Q2 Groundwater Elevation Map
Figure 5: 2021 Q3 Groundwater Elevation Map
Figure 6: 2021 Q4 Groundwater Elevation Map
Figure 7: 2021 Annual Groundwater Analytical Results

Table 1: Well Construction Information and Groundwater Elevations
Table 2: Field Parameter Results
Table 3: Petroleum Hydrocarbon Groundwater Analytical Results

Enclosure A: Analytical Laboratory Reports

FIGURES

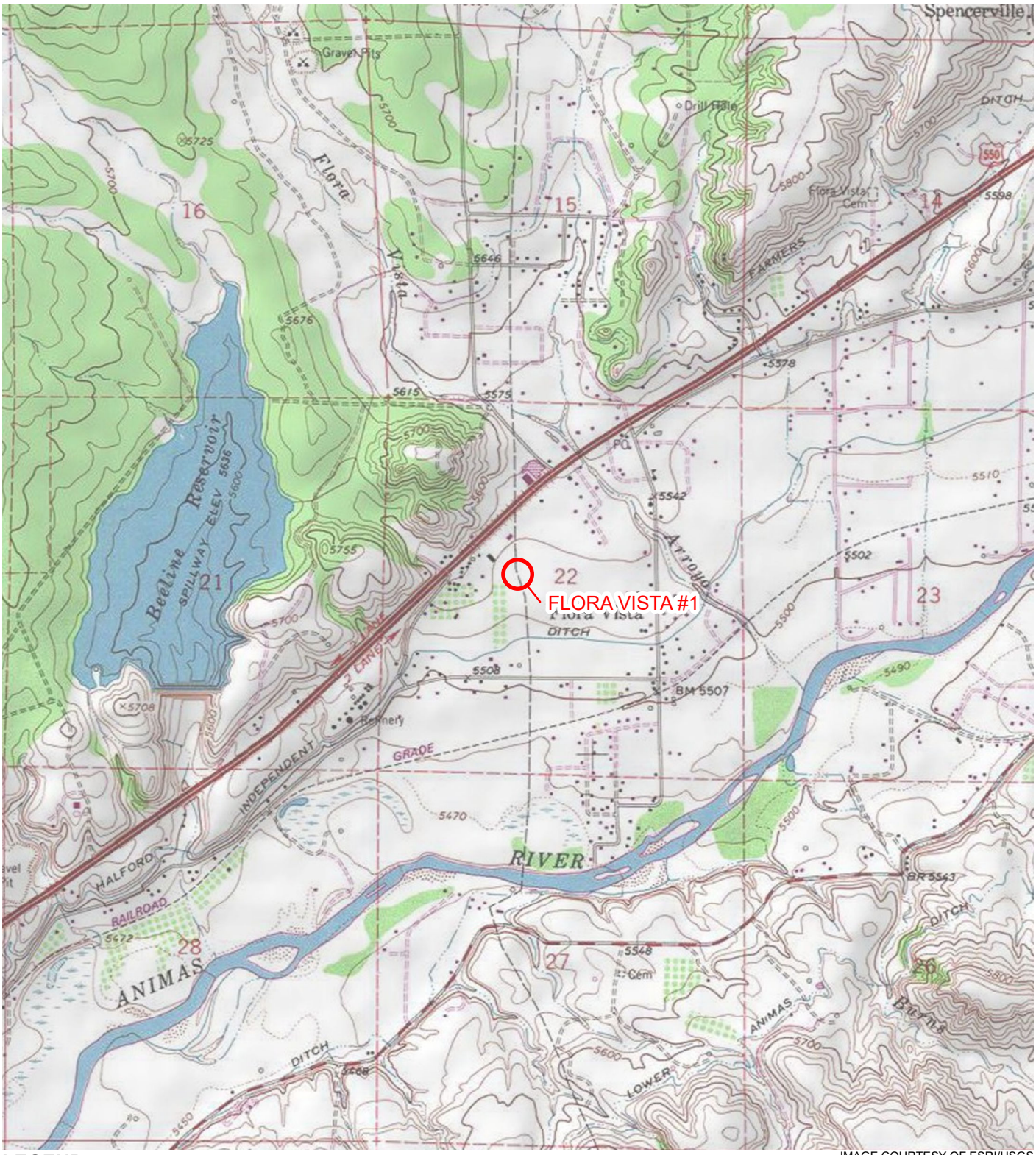

IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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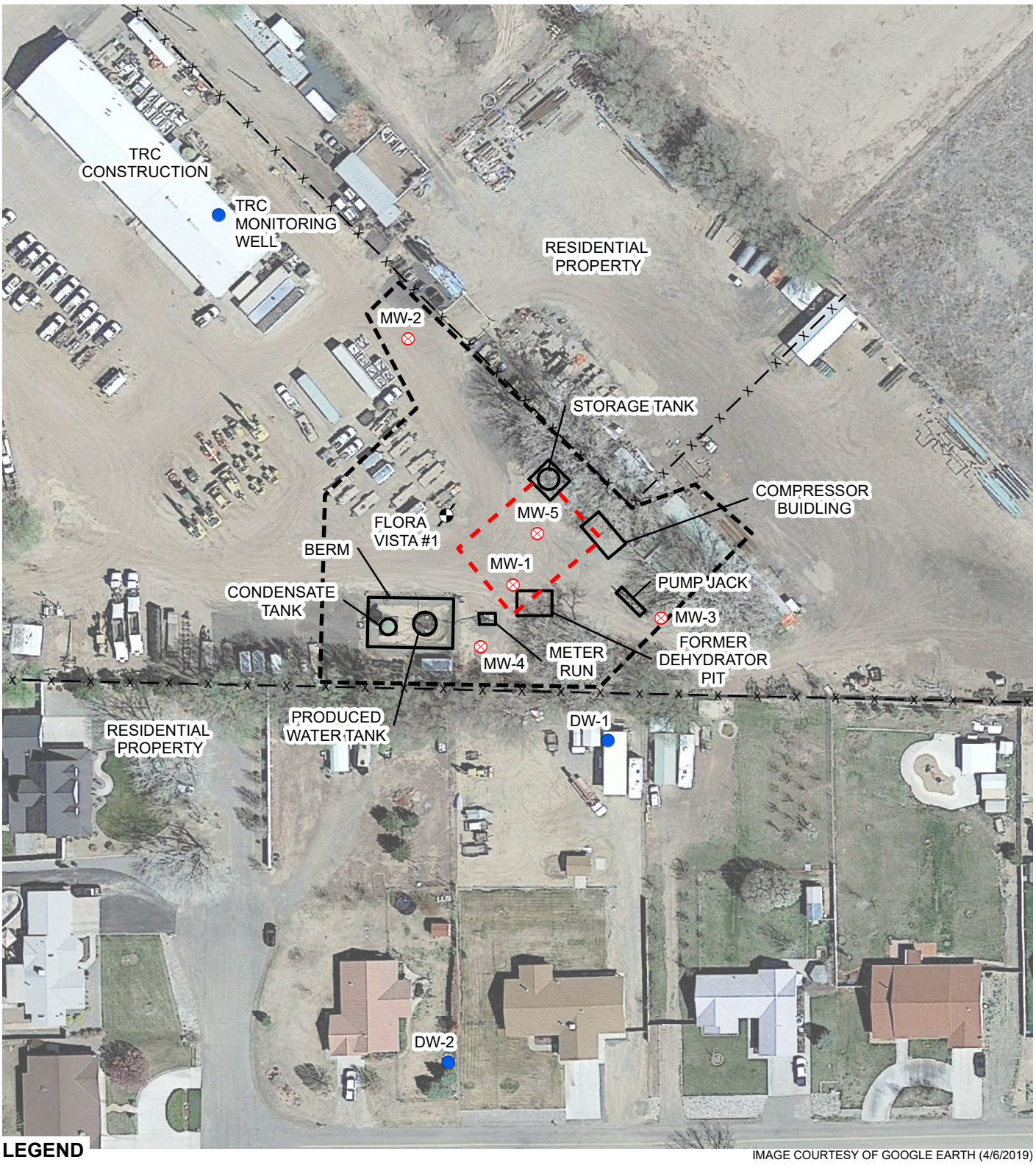

IMAGE COURTESY OF GOOGLE EARTH (4/6/2019)

LEGEND

- MONITORING WELL
- NATURAL GAS WELLHEAD
- DOMESTIC WELL LOCATION
- x — x FENCE
- EXCAVATION EXTENT 2003
- TRC BONE YARD

0 100 200
Feet

N

FIGURE 2
SITE MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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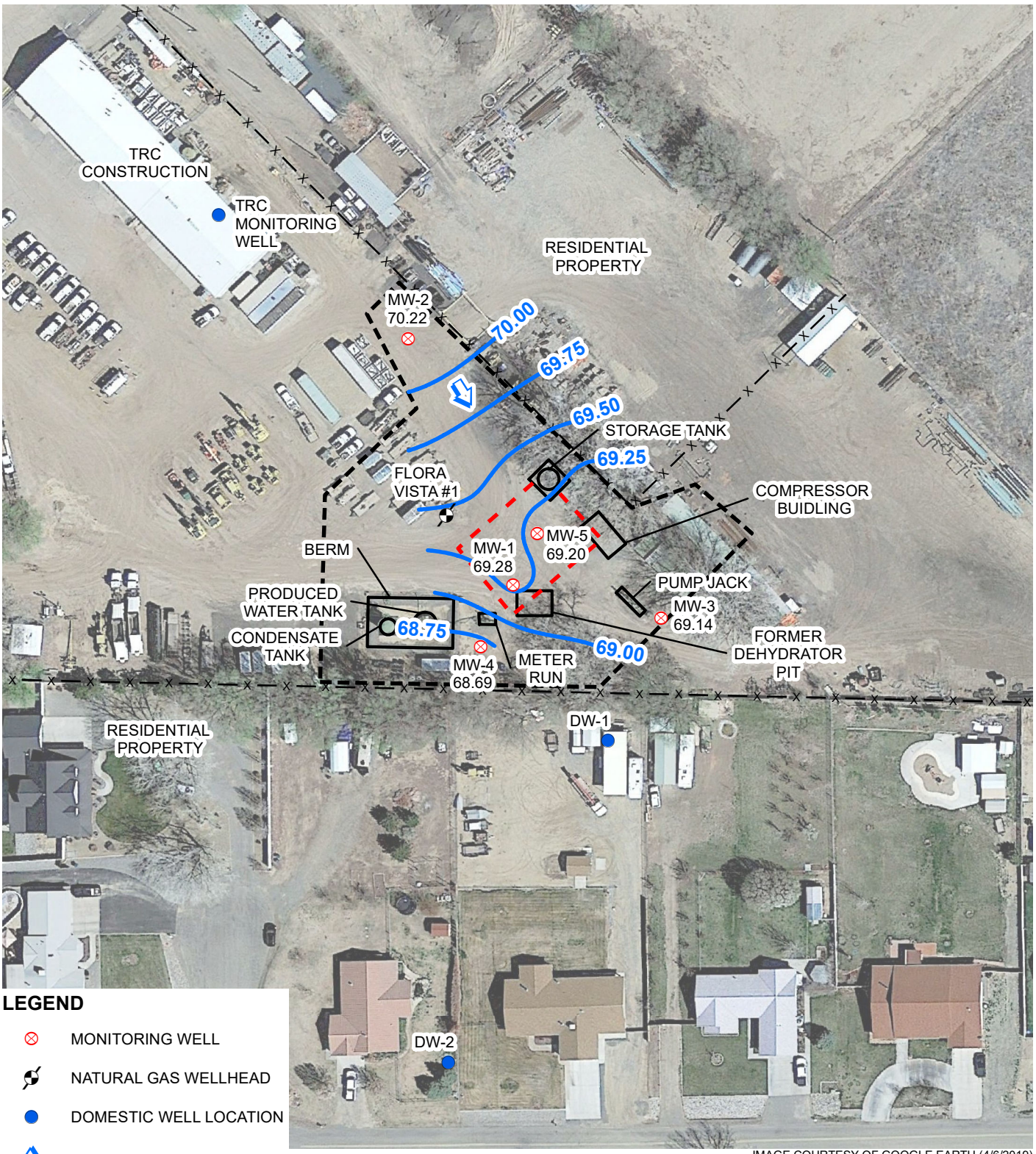

FIGURE 3
2021 Q1 GROUNDWATER ELEVATION MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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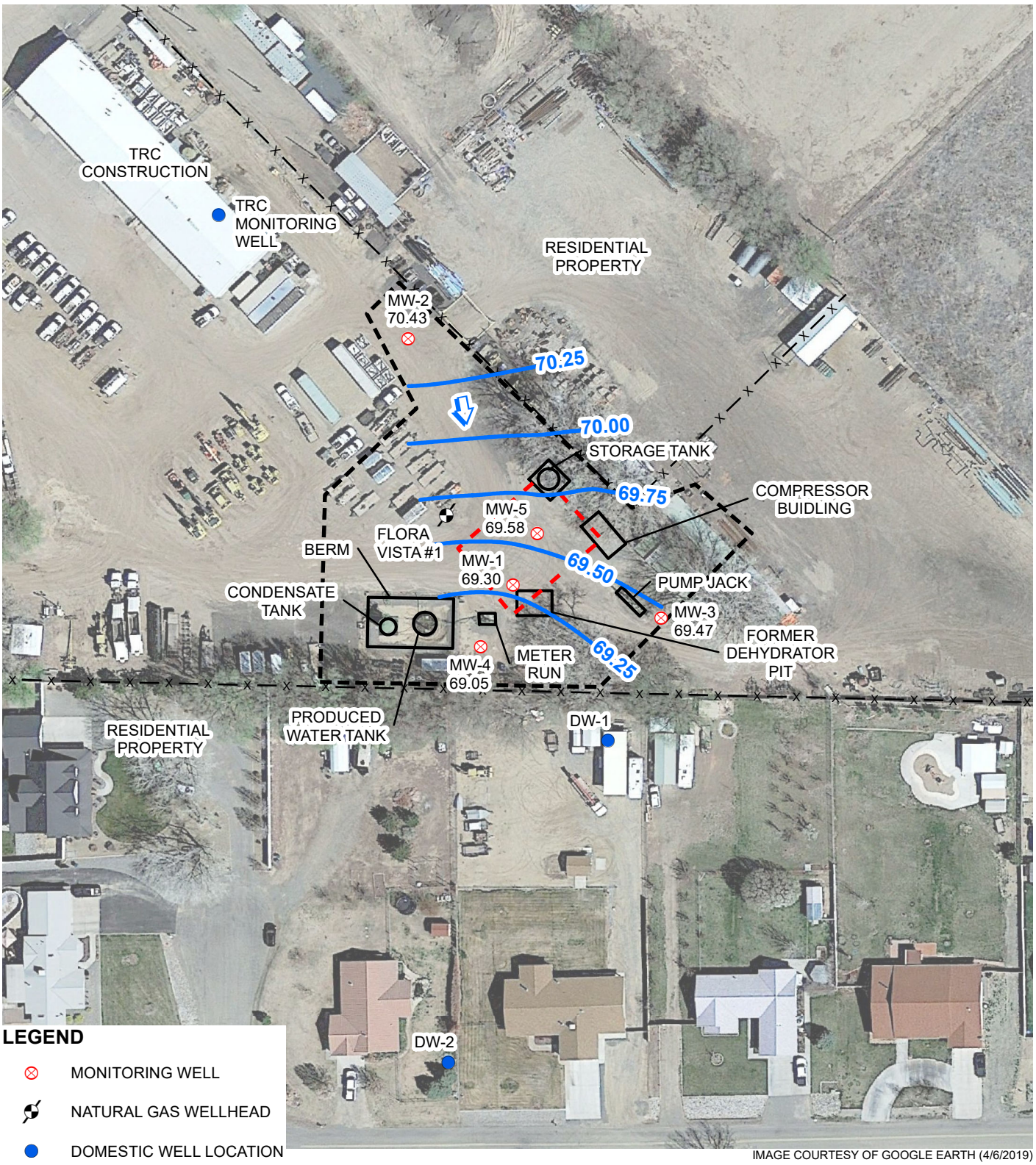

FIGURE 4
2021 Q2 GROUNDWATER ELEVATION MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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FIGURE 5
2021 Q3 GROUNDWATER ELEVATION MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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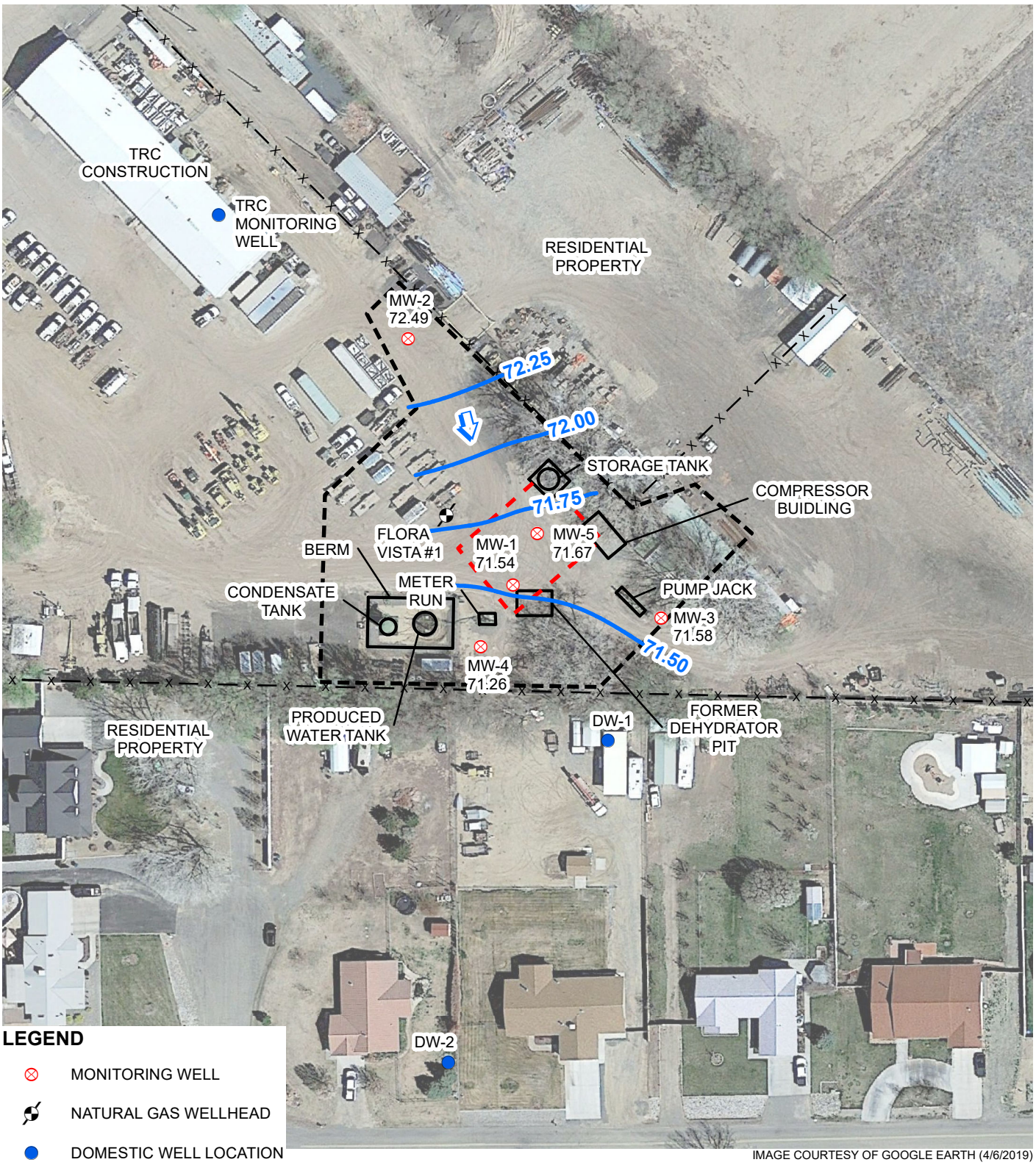

LEGEND

- MONITORING WELL
- NATURAL GAS WELLHEAD
- DOMESTIC WELL LOCATION
- ESTIMATED GROUNDWATER FLOW DIRECTION
- x — x FENCE
- EXCAVATION EXTENT 2003
- TRC BONE YARD
- RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 0.25 FEET

GROUNDWATER ELEVATIONS WERE MEASURED ON NOVEMBER 4 & 5, 2021.

IMAGE COURTESY OF GOOGLE EARTH (4/6/2019)

0 100 200
Feet

N

FIGURE 6
2021 Q4 GROUNDWATER ELEVATION MAP
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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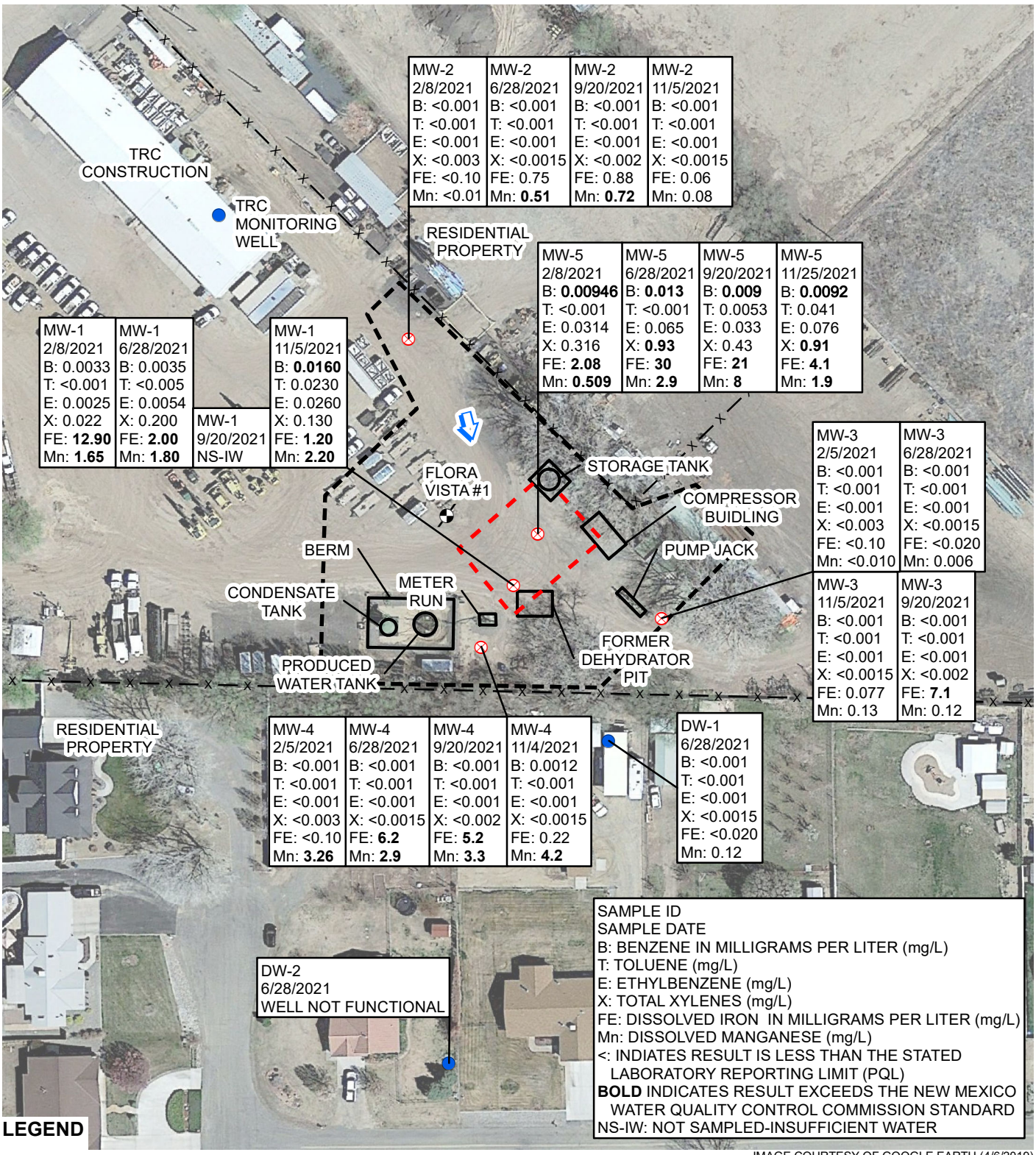

FIGURE 7
ANNUAL GROUNDWATER ANALYTICAL RESULTS
FLORA VISTA #1
SENW SEC 22-T30N-R12W
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

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TABLES

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-1	26.02	94.38	11.02 - 26.02	6/20/2003	NM	NM
				9/23/2003	17.03	77.35
				12/16/2003	20.11	74.27
				3/16/2004	23.69	70.69
				6/21/2004	19.92	74.46
				9/30/2004	16.82	77.56
				12/13/2004	20.40	73.98
				3/22/2005	24.32	70.06
				6/22/2005	NM	NM
				10/24/2005	NM	NM
				12/13/2005	21.24	73.14
				3/22/2006	24.75	69.63
				6/22/2006	20.48	73.90
				10/20/2006	19.13	75.25
				12/13/2006	21.24	73.14
				11/9/2007	19.71	74.67
				1/15/2008	NM	NM
				3/19/2008	24.35	70.03
				7/23/2008	19.89	74.49
				10/21/2008	19.48	74.90
				1/28/2009	23.96	70.42
				9/30/2009	18.16	76.22
				6/10/2010	21.64	72.74
				9/27/2010	19.31	75.07
				12/14/2010	21.41	72.97
				3/17/2011	24.95	69.43
				6/24/2011	22.55	71.83
				9/29/2011	18.37	76.01
				12/14/2011	20.63	73.75
				3/9/2012	24.12	70.26
		93.96		6/7/2012	23.08	70.88
				9/19/2012	18.94	75.02
				12/13/2012	21.22	72.74
				3/20/2013	24.79	69.17
				6/12/2013	22.51	71.45
				9/11/2013	18.34	75.62
				12/13/2013	21.53	72.43
				3/19/2014	25.26	68.70
				6/17/2014	21.55	72.41
				9/18/2014	19.58	74.38
				12/18/2014	Well inaccessible	

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-1	26.02	93.96	11.02 - 26.02	3/19/2015	25.18	68.78
				6/18/2015	23.56	70.40
				9/17/2015	21.85	72.11
				12/3/2015	22.65	71.31
				3/31/2016*	26.02	67.94
				6/20/2016	23.52	70.44
				9/6/2016	20.98	72.98
				11/29/2016	21.90	72.06
				3/9/2017	24.72	69.24
				6/15/2017	23.90	70.06
				9/27/2017	21.57	72.39
				12/5/2017	22.30	71.66
				3/15/2018	DRY	--
				6/27/2018	DRY	--
				9/6/2018	22.75	71.21
				12/20/2018	23.10	70.86
				3/6/2019	25.20	68.76
				6/12/2019	25.82	68.14
				9/6/2019	23.26	70.70
				12/9/2019	23.01	70.95
				3/16/2020	25.62	68.34
				6/10/2020	26.11	67.85
				8/28/2020	26.11	67.85
				11/5/2020	21.89	72.07
				2/8/2021	24.68	69.28
				6/28/2021	24.66	69.30
				9/20/2021	DRY	--
				11/5/2021	22.42	71.54
MW-2	31.35	97.1	12.35 - 27.35	10/21/2008	20.71	76.39
				1/28/2009	22.75	74.35
				9/30/2009	18.83	78.27
				6/11/2010	22.09	75.01
				9/27/2010	20.12	76.98
				12/14/2010	NM	NM
				3/17/2011	NM	NM
				6/24/2011	22.50	74.60
				9/29/2011	18.95	75.43
				12/14/2011	21.79	75.31
				3/9/2012	25.60	71.50
		97.00		6/7/2012	22.46	74.54

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-2	31.35	97.00	12.35 - 27.35	9/19/2012	17.70	79.30
				12/13/2012	22.43	74.57
				3/20/2013	26.49	70.51
				6/12/2013	22.13	74.87
				9/11/2013	17.95	79.05
				12/13/2013	22.78	74.22
				3/19/2014	26.99	70.01
				6/17/2014	20.31	76.69
				9/18/2014	19.87	77.13
				12/18/2014	23.00	74.00
				3/19/2015	26.92	70.08
				6/18/2015	23.24	73.76
				9/17/2015	22.78	74.22
				12/3/2015	24.23	72.77
				3/31/2016	28.20	68.80
				6/20/2016	25.67	71.33
				9/6/2016	23.57	73.43
				11/29/2016	23.69	73.31
				3/9/2017	26.70	70.30
				6/15/2017	Well inaccessible	
				9/27/2017	23.84	73.16
				12/5/2017	Well inaccessible	
				3/15/2018	27.65	69.35
				6/27/2018	26.36	70.64
				9/6/2018	25.03	71.97
				12/20/2018	25.20	71.80
				3/7/2019	27.51	69.49
				6/13/2019	27.43	69.57
				9/6/2019	25.45	71.55
				12/10/2019	25.19	71.81
				3/26/2020	28.29	68.71
				6/10/2020	27.59	69.41
				8/28/2020	25.31	71.69
				11/5/2020	24.17	72.83
				2/8/2021	26.78	70.22
				6/28/2021	26.57	70.43
				9/20/2021	25.40	71.60
				11/5/2021	24.51	72.49
MW-3	30.87	92.9	11.87 - 26.87	10/21/2008	17.92	74.98
				1/28/2009	21.53	71.37
				9/30/2009	16.43	76.47
				6/10/2010	19.71	73.19

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
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Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-3	30.87	92.9	11.87 - 26.87	9/27/2010	17.81	75.09
				12/14/2010	19.61	73.29
				3/17/2011	23.32	69.58
				6/24/2011	20.55	72.35
				9/29/2011	16.84	77.54
				12/14/2011	19.13	73.77
				3/9/2012	22.51	70.39
		92.43		6/7/2012	20.93	71.50
				9/19/2012	17.48	74.95
				12/13/2012	19.78	72.65
				3/20/2013	23.18	69.25
				6/12/2013	20.68	71.75
				9/11/2013	16.90	75.53
				12/13/2013	20.11	72.32
				3/19/2014	23.64	68.79
				6/17/2014	19.85	72.58
				9/18/2014	18.01	74.42
				12/18/2014	Well inaccessible	
				3/19/2015	23.55	68.88
				6/18/2015	21.84	70.59
				9/17/2015	20.18	72.25
				12/3/2015	21.10	71.33
				3/31/2016	24.81	67.62
				6/20/2016	21.66	70.77
				9/6/2016	19.18	73.25
				11/29/2016	20.39	72.04
				3/9/2017	23.35	69.08
				6/15/2017	22.03	70.40
				9/27/2017	Well inaccessible	
				12/5/2017	20.89	71.54
				3/15/2018	24.28	68.15
				6/27/2018	22.42	70.01
				9/6/2018	21.16	71.27
				12/20/2018	21.60	70.83
				3/6/2019	24.13	68.30
				6/12/2019	23.71	68.72
				9/5/2019	21.50	70.93
				12/10/2019	21.55	70.88
				3/16/2020	24.61	67.82
				6/10/2020	23.80	68.63
				8/27/2020	21.41	71.02

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-3	30.87	92.43	11.87 - 26.87	11/5/2020	20.27	72.16
				2/5/2021	23.29	69.14
				6/28/2021	22.96	69.47
				9/20/2021	21.60	70.83
				11/5/2021	20.85	71.58
MW-4	30.42	93.6	11.42 - 26.42	10/21/2008	18.06	75.54
				1/28/2009	24.55	69.05
				9/30/2009	17.89	75.71
				6/10/2010	21.02	72.58
				9/27/2010	18.93	74.67
				12/14/2010	21.04	72.56
				3/17/2011	24.58	69.02
				6/24/2011	21.80	71.80
				9/29/2011	17.94	76.44
				12/14/2011	20.28	73.32
				3/9/2012	23.70	69.90
		93.17		6/7/2012	22.19	70.98
				9/19/2012	18.60	74.57
				12/13/2012	20.96	72.21
				3/20/2013	24.38	68.79
				6/12/2013	21.81	71.36
				9/11/2013	18.89	74.28
				12/13/2013	21.28	71.89
				3/19/2014	24.88	68.29
				6/17/2014	21.21	71.96
				9/18/2014	19.16	74.01
				12/18/2014	21.41	71.76
				3/19/2015	24.80	68.37
				6/18/2015	23.09	70.08
				9/17/2015	21.37	71.80
				12/3/2015	22.29	70.88
				3/31/2016	26.05	67.12
				6/20/2016	22.95	70.22
				9/6/2016	20.40	72.77
				11/29/2016	21.59	71.58
				3/9/2017	24.58	68.59
				6/15/2017	23.40	69.77
				9/27/2017	21.25	71.92
				12/5/2017	22.05	71.12
				3/15/2018	25.54	67.63
				6/27/2018	23.67	69.50

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-4	30.42	93.17	11.42 - 26.42	9/6/2018	22.29	70.88
				12/20/2018	22.75	70.42
				3/6/2019	25.33	67.84
				6/12/2019	24.93	68.24
				9/5/2019	22.71	70.46
				12/9/2019	22.68	70.49
				3/16/2020	25.84	67.33
				6/10/2020	24.93	68.24
				8/27/2020	22.51	70.66
				11/5/2020	21.34	71.83
				2/5/2021	24.48	68.69
				6/28/2021	24.12	69.05
				9/20/2021	23.00	70.17
				11/4/2021	21.91	71.26
MW-5	29.68	93.82	15-30	9/17/2015	21.59	72.23
				12/3/2015	22.41	71.41
				3/31/2016	26.18	67.64
				6/20/2016	23.18	70.64
				9/6/2016	20.67	73.15
				11/29/2016	21.72	72.10
				3/9/2017	25.04	68.78
				6/15/2017	23.61	70.21
				9/27/2017	Well inaccessible	
				12/5/2017	21.96	71.86
				3/15/2018	25.55	68.27
				6/27/2018	23.93	69.89
				9/6/2018	22.54	71.28
				12/20/2018	22.84	70.98
				3/7/2019	25.39	68.43
				6/13/2019	24.75	69.07
				9/6/2019	22.78	71.04
				12/10/2019	22.84	70.98
				3/26/2020	26.17	67.65
				6/10/2020	25.25	68.57
				8/28/2020	22.87	70.95
				11/5/2020	21.21	72.61

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Total Depth (ft)	Top of Casing Elevation (1)	Screened Interval (ft bgs)	Sample Date	Depth to Groundwater (ft BTOC)	Groundwater Elevation (1)
MW-5	29.68	93.82	15-30	2/8/2021	24.62	69.20
				6/28/2021	24.24	69.58
				9/20/2021	23.00	70.82
				11/5/2021	22.15	71.67

Notes:

(1) - surface elevation based on an arbitrary datum of 100 feet set at the gas well head
bgs - below ground surface
BTOC - below top of casing
ft = feet
NM = Not measured
PSH - phase separated hydrocarbons

TABLE 2
FIELD PARAMETER RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-1	3/31/2016	**No parameters or sample collected due to low well volume.**						
	6/20/2016	16.70	6.34	--	1,070	0.41	-132.7	0.25
	9/7/2016	15.55	6.30	0.027	3,700	9.16	-66.6	1.50
	3/9/2017	**No parameters or sample collected due to low well volume.**						
	6/15/2017	**No parameters or sample collected due to low well volume.**						
	12/5/2017	15.07	6.94	4.785	7,364	4.69	-183.5	0.50
	3/15/2018	**No parameters or sample collected due to low well volume.**						
	6/27/2018	**No parameters or sample collected due to low well volume.**						
	9/6/2018	16.08	7.10	--	7,138	2.51	-117.9	0.50
	3/6/2019	14.60	7.63	0.640	1,260	--	-40.8	0.25
	6/12/2019	**No parameters or sample collected due to low well volume.**						
	9/6/2019	21.30	6.99	1.220	2,430	--	-4.0	1.25
	12/9/2019	--	6.25	1.110	2,230	0.60	-17.8	1.00
	3/16/2020	22.40	6.33	1.820	3,630	8.08	-14.1	--
	6/10/2020	**No parameters or sample collected due to low well volume.**						
	8/28/2020	**No parameters or sample collected due to low well volume.**						
	11/5/2020	14.70	6.65	1.880	3,750	4.80	-12.6	--
	2/8/2021	13.80	6.22	0.600	1,200	1.14	7.0	
	6/28/2021	**No parameters taken due to equipment not functional.**						
	9/20/2021	**No parameters or sample collected due to low well volume.**						
	11/5/2021	11.70	6.78	--	2,870	--	--	1.75
MW-2	3/31/2016	**No parameters taken due to low well volume.**						
	6/20/2016	17.00	6.40	--	870	2.32	-104.0	1.50
	9/7/2016	15.00	6.57	0.571	879	3.67	-19.9	4.00
	11/29/2016	14.78	7.21	--	909	4.51	-17.1	--
	3/9/2017	**No parameters or sample collected due to low well volume.**						
	3/15/2018	15.24	7.06	--	977	0.93	56.3	2.00
	6/27/2018	**No parameters taken due to low well volume.**						
	9/6/2018	16.05	7.30	--	929	1.15	-0.80	3.50
	3/7/2019	19.40	6.96	0.510	1,020	--	-23.7	2.25
	6/13/2019	20.60	6.62	0.500	1,000	--	-10.2	2.00
	9/6/2019	21.00	6.77	0.520	1,030	--	-20.8	3.00
	12/10/2019	--	6.36	0.550	1,120	0.36	-23.3	3.00
	3/26/2020	16.40	6.18	0.530	1,060	8.47	-9.1	--
	6/10/2020	16.50	6.37	0.500	1,000	2.39	-15.1	--
	8/28/2020	14.70	6.67	0.500	1,010	2.21	-12.9	--
	11/5/2020	17.90	6.08	0.490	960	2.30	-7.0	--
	2/8/2021	15.70	6.06	0.520	1,040	0.58	-5.9	
	6/28/2021	**No parameters taken due to equipment not functional.**						
	9/20/2021	17.40	6.90	--	2,960	--	--	3.18
	11/5/2021	18.80	5.94	--	1,000	--	--	3.50
MW-3	3/31/2016	14.68	7.13	0.510	800	4.66	-13.0	2.50
	6/20/2016	14.90	7.05	--	750	2.02	83.2	4.00
	9/7/2016	14.19	6.02	0.467	719	5.55	12.5	5.00
	11/29/2016	13.68	7.41	--	725	5.03	-11.4	--
	3/9/2017	14.44	7.06	0.675	1,038	1.38	-199.9	--
	6/15/2017	13.90	7.67	0.470	723	4.06	-79.1	1.00
	12/5/2017	12.80	7.10	0.513	788	2.09	-135.4	4.00
	3/15/2018	14.54	7.22	--	702	2.71	59.2	2.50
	6/27/2018	15.30	7.12	--	680	2.58	-16.8	3.75
	9/6/2018	14.81	7.49	--	639	4.77	-20.0	4.00

TABLE 2
FIELD PARAMETER RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-3	3/6/2019	--	7.30	0.380	770	--	-21.6	2.5
	6/12/2019	19.40	6.91	0.360	740	--	-57.0	2.00
	9/5/2019	20.00	7.15	0.360	720	--	-29.4	3.25
	12/10/2019	--	6.36	0.390	780	1.36	-1.9	3.00
	3/16/2020	19.60	6.44	0.380	780	8.65	-25.2	--
	6/10/2020	17.60	6.2	0.380	760	2.77	-22.8	--
	8/27/2020	24.10	6.43	0.590	1,180	1.46	-10.7	--
	11/5/2020	14.40	6.43	0.400	800	4.45	-14.3	--
	2/5/2021	23.29	6.42	0.350	700	1.79	-25.8	
	6/28/2021	**No parameters taken due to equipment not functional.**						
	9/20/2021	17.80	6.86	--	1,923	--	--	3.96
	11/5/2021	15.10	6.1	--	690	--	--	4.25
MW-4	3/31/2016	15.60	6.98	0.700	1,030	5.73	-47.0	2.25
	6/20/2016	15.20	6.79	--	1,040	1.06	-60.8	3.50
	9/7/2016	14.55	6.40	0.655	1,008	2.48	-59.8	4.50
	11/29/2016	13.58	7.16	--	903	3.04	-80.9	--
	3/9/2017	14.45	6.96	0.753	1,159	1.69	-133.5	--
	6/15/2017	13.63	7.00	1.769	2,721	5.00	-114.3	3.50
	12/5/2017	13.88	6.84	1.721	2,647	1.13	-135.7	4.00
	3/15/2018	15.04	7.04	--	1,180	--	-100.2	2.25
	6/27/2018	15.21	6.80	--	1,315	0.55	-79.0	3.00
	9/6/2018	15.15	7.11	--	1,394	1.05	-73.1	4.00
	3/6/2019	15.90	7.21	0.620	1,260	--	-7.5	2.50
	6/12/2019	19.80	6.66	0.710	1,410	--	6.9	2.50
	9/5/2019	18.10	7.04	0.530	1,070	--	2.7	3.50
	12/9/2019	--	6.10	0.770	1,550	0.00	3.8	3.00
	3/16/2020	13.90	6.48	0.660	1,310	6.03	7.2	--
	6/9/2020	16.70	6.33	0.550	1,060	1.85	16.1	--
	8/27/2020	22.00	6.47	0.510	1,050	1.45	14.6	--
	11/5/2020	14.10	6.09	0.500	1,000	1.76	18.9	--
	2/5/2021	10.70	6.50	0.550	1,100	1.57	12.7	
	6/28/2021	**No parameters taken due to equipment not functional.**						
	9/20/2021	17.10	6.73	--	2,370	--	--	3.60
	11/4/2021	15.30	6.01	--	1,080	--	--	4.00
MW-5	3/31/2016	16.16	7.13	0.600	980	4.74	-97.0	1.75
	6/20/2016	15.90	6.88	--	1,030	0.68	-99.7	3.25
	9/7/2016	14.96	6.34	0.599	918	1.51	-130.2	4.50
	3/9/2017	15.29	7.35	0.793	1,255	8.83	-124.9	--
	6/15/2017	14.56	7.06	3.143	4,842	2.19	-132.6	2.00
	12/5/2017	15.11	6.76	0.706	1,086	0.52	-160.5	2.25
	3/15/2018	14.70	6.75	--	2,400	0.39	-9.2	0.50
	6/27/2018	**No parameters taken due to low well volume.**						
	9/6/2018	16.47	7.17	--	1,460	1.65	-125.0	1.00
	3/7/2019	19.60	6.92	0.480	940	--	0.3	0.75
	6/13/2019	19.50	6.58	1.460	2,930	--	0.3	1.00
	9/6/2019	26.00	6.50	1.000	2,000	--	17.5	2.00
	12/10/2019	--	6.53	0.240	490	0.47	-3.4	2.00
	3/26/2020	16.10	6.01	0.400	780	9.37	33.1	--
	6/10/2020	14.50	5.99	1.400	2,810	1.69	26.3	--
	8/28/2020	19.10	6.19	1.610	3,190	1.15	12.2	--
	11/5/2020	18.10	6.14	0.880	1,780	3.65	11.4	--

TABLE 2
FIELD PARAMETER RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-5	2/8/2021	15.00	6.04	0.210	430	1.14	33.3	
	6/28/2021	**No parameters taken due to equipment not functional.**						
	9/20/2021	18.80	6.93	--	4,001	--	--	2.77
	11/5/2021	17.10	5.91	--	840	--	--	2.25

Notes:

g/L - grams per liter

uS/cm - microsiemens per centimeter

mg/L - milligrams per liter

°C - degrees Celcius

DO - dissolved oxygen

mV - millivolts

ORP - oxidation-reduction potential

TDS - total dissolved solids

-- - data not collected

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-1	MW-1	6/20/2003	(orig)	**1.7**	0.3	0.49	**5.09**	--	--
	MW-1	9/23/2003	(orig)	**7.5**	0.02	0.66	**9.22**	--	--
	MW-1	12/16/2003	(orig)	**7.93**	0.01	**1.18**	**0.864**	--	--
	MW-1	3/16/2004	(orig)	**6.86**	ND	**1.16**	**8.47**	--	--
	MW-1	6/21/2004	(orig)	**4.14**	ND	0.43	**3.12**	--	--
	MW-1	9/30/2004	(orig)	**9.08**	0.03	**1.41**	**9.98**	--	--
	MW-1	12/13/2004	(orig)	**8.52**	ND	**1.34**	**9.39**	--	--
	MW-1	3/22/2005	(orig)	**4.55**	ND	**0.85**	**5.95**	--	--
	MW-1	6/22/2005	(orig)	--	0.02188	--	--	--	--
	MW-1	10/24/2005	(orig)	**6.39**	ND	**1.01**	**7.416**	--	--
	MW-1	12/13/2005	(orig)	**6.17**	ND	**1.01**	**7.57**	--	--
	MW-1	3/22/2006	(orig)	**3.58**	ND	**0.77**	**5.84**	--	--
	MW-1	6/22/2006	(orig)	**3.1**	ND	0.5	**3.5**	--	--
	MW-1	10/20/2006	(orig)	**6.6**	0.01	**1.22**	**8.91**	--	--
	MW-1	12/13/2006	(orig)	**4.23**	0.01	**1.09**	**8.13**	--	--
	MW-1	3/27/2007	(orig)	**2.37**	0.007	0.504	**3.749**	--	--
	MW-1	6/25/2007	(orig)	**2.87**	0.14	0.51	**3.89**	--	--
	MW-1	11/9/2007	(orig)	**5.6**	< 0.0007	**0.91**	**6.8**	--	--
	MW-1	1/15/2008	(orig)	**4.2**	< 0.0007	**0.89**	**5.7**	--	--
	MW-1	3/19/2008	(orig)	**2.7**	< 0.005	0.59	**4.7**	--	--
	MW-1	7/23/2008	(orig)	**2**	< 0.005	0.38	**1.4**	--	--
	MW-1	10/21/2008	(orig)	**4.5**	< 0.005	0.63	**5.3**	--	--
	MW-1	1/28/2009	(orig)	**4**	< 0.005	**0.88**	**8.7**	--	--
	MW-1	9/30/2009	(orig)	**4.2**	0.0016	0.53	**5.1**	**2.08**	**1.09**
	MW-1	6/10/2010	(orig)	**1.7**	0.0012	0.33	**0.99**	0.126	**1.28**
	MW-1	9/27/2010	(orig)	**3.2**	0.002	0.53	**4.2016**	**7.73**	**1.19**
	MW-1	12/14/2010	(orig)	**3.2**	0.0012	0.62	**5.3016**	**4.13**	**0.888**
	MW-1	3/17/2011	(orig)	**1.7**	0.0037	0.48	**4.3092**	**1.11**	**1.07**
	GW-74926-062411-PG-01	6/24/2011	(orig)	**2.1**	0.0025	0.494	**2.03**	< 0.1	**0.894**
	GW-74926-062411-PG-02	6/24/2011	(Duplicate)	**1.97**	0.0026	0.458	**1.94**	--	--
	GW-074926-092911-CM-009	9/29/2011	(orig)	**2.44**	< 0.005	0.519	**3.65**	**25.2**	**1.02**

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-1	GW-074926-121411-CB-MW-1	12/14/2011	(orig)	**2.31**	0.0055	0.508	**3.93**	**25.4**	**0.945**
	GW-074926-3912-CB-MW-1	3/9/2012	(orig)	**1.59**	< 0.001	0.636	**5.04**	**25.3**	**1.03**
	GW-074926-060712-CB-MW-1	6/7/2012	(orig)	**1.77**	0.127	0.182	**0.633**	**21.4**	**0.914**
	GW-074926-091912-JP-MW-1	9/19/2012	(orig)	**1.52**	< 0.020	0.414	**2.49**	**19**	**0.86**
	GW-074926-121312-CM-MW-1	12/13/2012	(orig)	**2.02**	< 0.025	**0.809**	**5.02**	**23.8**	**0.75**
	GW-074926-032013-CM-MW-1	3/20/2013	(orig)	**0.182**	< 0.002	0.0406	0.0914	**9.39**	**1.08**
	GW-074926-061213-JR-MW1	6/12/2013	(orig)	**0.698**	< 0.001	0.160	**0.873**	**12.8**	**1.12**
	GW-074926-091113-CM-MW1	9/11/2013	(orig)	**1.05**	< 0.020	**0.831**	**5.1**	**18.0**	**1.05**
	GW-074926-121313-CM-MW-1	12/13/2013	(orig)	**0.591**	0.0015	0.670	**1.79**	**25.4**	**0.88**
	GW-074926-031914-CK-MW-1	3/19/2014	(orig)	**0.0822**	< 0.001	0.039	0.271	--	--
	GW-074926-061714-CK-MW-1	6/17/2014	(orig)	**0.522**	< 0.001	0.189	0.398	**17.4**	**0.896**
	GW-074926-091814-CB-MW-1	9/18/2014	(orig)	**0.849**	< 0.001	0.299	**1.23**	**23.4**	**1.01**
	--	12/18/2014	Well was obstructed and inaccessible due to TRC operations.						
	--	3/19/2015	No sample due to insuffiencient volume						
	GW-074926-061815-CB-MW-1	6/18/2015	(orig)	**0.213**	< 0.001	0.116	**0.691**	**5.72**	**0.542**
	GW-074926-061815-CB-DUP	6/18/2015	(Duplicate)	**0.17**	< 0.001	0.0684	0.533	--	--
	GW-074926-091715-CK-MW-1	9/17/2015	(orig)	**0.0673**	< 0.001	0.0859	0.362	**4.22**	**0.614**
	GW-074926-12315-CB-MW-1	12/3/2015	(orig)	**0.0908**	< 0.001	0.0612	0.138	**2.69**	**0.63**
	--	3/31/2016	No sample due to insuffiencient volume						
	GW-074926-062016-SP-MW-1	6/20/2016	(orig)	**0.834**	< 0.025	0.533	**2.06**	**40.8**	**2.17**
	GW-074926-090716-SP-MW-1	9/7/2016	(orig)	**0.525**	< 0.020	0.416	**1.62**	**17.6**	**1.51**
		10/25/2016	ISCO Injection-15% PersulfOx solution						
		3/9/2017	No sample due to insuffiencient volume						
	GW-074926-061517-CN-MW-1	6/15/2017	(orig)	**0.0371**	<1.0	0.0404	0.157	--	--
	GW-11145982-092717-SP-MW-1	9/27/2017	(orig)	**0.0231**	<1.0	0.0306	0.118	**24.2**	**3.13**
	GW-11145982-120517-SP-SP-1	12/5/2017	(orig)	**0.288**	<1.0	0.444	**1.07**	**19.9**	**3.27**
		3/15/2018	No sample due to insuffiencient volume						
		6/27/2018	No sample due to insuffiencient volume						
	GW-11145982-090618-CN-MW-1	9/6/2018	(orig)	**0.0313**	<1.0	0.1730	0.365	**11.70**	**5.83**
	MW-1	12/20/2018	(orig)	**0.0827**	<0.001	0.1560	0.468	0.4870	**0.0241**
	MW-1	3/6/2019	(orig)	**0.0093**	<0.005	0.0088	0.0355	0.4970	**0.4940**

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-1	MW-1	6/13/2019	No sample due to insuffiencient volume						
	MW-1	9/6/2019	(orig)	**0.0174**	0.0014	0.0124	0.119	**1.38**	**2.75**
	MW-1	12/9/2019	(orig)	**0.0195**	<0.001	<0.001	0.0567	**4.54**	**1.38**
	MW-1	3/16/2020	(orig)	**0.0196**	<0.001	0.0174	0.106	--	--
	MW-1	6/10/2020	No sample due to insuffiencient volume						
	MW-1	8/28/2020	No sample due to insuffiencient volume						
	MW-1	11/5/2020	(orig)	**0.0426**	<0.001	0.0505	0.345	<0.10	--
	MW-1	2/8/2021	(orig)	0.0033	<0.001	0.0025	0.022	**12.90**	**1.65**
	MW-1	6/28/2021	(orig)	**0.0350**	<0.005	0.0540	0.200	**2.00**	**1.80**
	MW-1	9/20/2021	No sample due to insuffiencient volume						
	MW-1	11/5/2021	(orig)	**0.0160**	0.0230	0.0260	0.130	**1.20**	**2.20**
MW-2	MW-2	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--
	MW-2	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND
	MW-2	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0223	< 0.005
	MW-2	6/11/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	< 0.005
	MW-2	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	< 0.005
	GW-74926-062411-PG-05	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	0.191	< 0.015
	GW-074926-092911-CM-006	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-121411-CB-MW-2	12/14/2011	(orig)	0.00031 J	< 0.001	0.0002 J	0.0022 J	0.0133 J	0.0022 J
	GW-074926-3912-CB-MW-2	3/9/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-060712-CB-MW-2	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0822	0.0052
	GW-074926-091912-JP-MW-2	9/19/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-121312-CM-MW-2	12/13/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.05	< 0.005
	GW-074926-032013-CM-MW-2	3/20/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-061213-JR-MW2	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0665	< 0.005
	GW-074926-091113-CM-MW2	9/11/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-121313-CM-MW-2	12/13/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-031914-CK-MW-2	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	0.024
	GW-074926-061714-CK-MW-2	6/17/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-091814-CB-MW-2	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0656	< 0.005
	GW-074926-121814-CM-MW-2	12/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.709	0.006

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-2	GW-074926-031915-CM-MW-2	3/19/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.883	0.043
	GW-074926-061815-CB-MW-2	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-091715-CK-MW-2	9/17/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-12315-CB-MW-2	12/3/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-033116-CM-MW-2	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0585	<0.005
	GW-074926-062016-SP-MW-2	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-090716-SP-MW-2	9/7/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0512	< 0.005
	GW-074926-112916-CN-MW-2	11/29/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-11145982-092717-SP-MW-2	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.50	0.013
	GW-11145982-031518-JW-MW-2	3/15/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.50	0.011
	GW-11145982-062719-CM-MW-2	6/27/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0512	0.017
	GW-11145982-090618-CN-MW-2	9/6/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.104	**0.270**
	MW-2	12/20/2018	(orig)	< 0.001	< 0.003	< 0.002	< 0.004	<0.10	<0.01
	MW-2	3/7/2019	(orig)	--	--	--	--	--	<0.01
	MW-2	6/13/2019	(orig)	--	--	--	--	<0.10	0.013
	MW-2	9/6/2019	(orig)	--	--	--	--	--	0.085
	MW-2	12/10/2019	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.01
	MW-2	3/26/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.01
	MW-2	6/10/2020	(orig)	<0.001	<0.001	<0.003	<0.003	<0.10	--
	MW-2	8/28/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	--
	MW-2	11/5/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	--
	MW-2	2/8/2021	(orig)	<0.001	< 0.001	< 0.001	< 0.003	<0.10	<0.01
	MW-2	6/28/2021	(orig)	<0.001	<0.001	<0.001	<0.0015	0.75	**0.51**
	MW-2	9/20/2021	(orig)	<0.001	<0.001	<0.001	<0.002	0.88	**0.72**
	MW-2	11/5/2021	(orig)	<0.001	<0.001	<0.001	<0.0015	0.06	0.08
MW-3	MW-3	10/21/2008	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	--	--
	MW-3	1/28/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	ND	ND
	MW-3	9/30/2009	(orig)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0543	< 0.005
	MW-3	6/10/2010	(orig)	< 0.0005	< 0.001	< 0.001	< 0.001	0.0425	< 0.005
	MW-3	9/27/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	< 0.005

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-3	MW-3	12/14/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	< 0.005
	MW-3	3/17/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.02	< 0.005
	GW-74926-062411-PG-03	6/24/2011	(orig)	< 0.0010	< 0.0010	< 0.0010	< 0.0030	0.189	< 0.015
	GW-074926-092911-CM-007	9/29/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	0.0063
	GW-074926-121411-CB-MW-3	12/14/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0288 J	0.0207
	GW-074926-3912-CB-MW-3	3/9/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-060712-CB-MW-3	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-091912-JP-MW-3	9/19/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	< 0.005
	GW-074926-121312-CM-MW-3	12/13/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0605	0.026
	GW-074926-032013-CM-MW-3	3/20/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.05	0.0149
	GW-074926-061213-JR-MW3	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.189	0.0094
	GW-074926-091113-CM-MW3	9/11/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-121313-CM-MW-3	12/13/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	0.013
	GW-074926-031914-CK-MW-3	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-061714-CK-MW-3	6/17/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-091814-CB-MW-3	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	--	12/18/2014	Wellhead inaccessable due to standing water.						
	GW-074926-031915-CM-MW-3	3/19/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-061815-CB-MW-3	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-091715-CK-MW-3	9/17/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-12315-CB-MW-3	12/3/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	0.0258
	GW-074926-033116-CM-MW-3	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.138	**0.368**
	GW-074926-062016-SP-MW-3	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	0.0078
	GW-074926-090716-SP-MW-3	9/7/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-074926-112916-SP-MW-3	11/29/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.103	0.197
	GW-074926-030917-CN-MW-3	3/9/2017	(orig)	--	--	--	--	0.878	**0.904**
	GW-074926-061517-CN-MW-3	6/15/2017	(orig)	--	--	--	--	< 0.050	< 0.005
	GW-11145982-120517-SP-MW-3	12/5/2017	(orig)	--	--	--	--	< 0.050	0.106
	GW-11145982-031518-JW-MW-3	3/15/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.0642	< 0.005
	GW-11145982-062719-CM-MW-3	6/27/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	< 0.050	< 0.005
	GW-11145982-090618-CN-MW-3	9/6/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	0.85	**0.249**

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-3	MW-3	12/20/2018	(orig)	< 0.001	< 0.003	< 0.002	< 0.004	<0.10	0.0153
	MW-3	3/6/2019	(orig)	--	--	--	--	--	0.0412
	MW-3	6/13/2019	(orig)	--	--	--	--	<0.10	<0.010
	MW-3	9/6/2019	(orig)	--	--	--	--	--	0.0127
	MW-3	12/10/2019	(orig)	< 0.001	< 0.001	< 0.001	<0.003	0.707	**0.682**
	MW-3	3/16/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.010
	MW-3	6/9/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.010
	MW-3	8/27/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.010
	MW-3	11/5/2020	(orig)	< 0.001	< 0.001	< 0.001	<0.003	<0.10	<0.010
	MW-3	2/5/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.10	< 0.010
	MW-3	6/28/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.0015	< 0.020	0.006
	MW-3	9/20/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.002	**7.1**	0.12
	MW-3	11/5/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.0015	0.077	0.13
MW-4	MW-4	10/21/2008	(orig)	**0.039**	< 0.0005	0.031	0.18	--	--
	MW-4	1/28/2009	(orig)	**0.66**	< 0.0005	0.064	0.583	ND	ND
	MW-4	9/30/2009	(orig)	**0.34**	< 0.0005	0.054	0.572	0.148	**4.48**
	MW-4	6/10/2010	(orig)	**0.14**	< 0.001	0.027	0.252	0.0566	**4.65**
	MW-4	9/27/2010	(orig)	**0.033**	< 0.001	0.041	0.274	**1.22**	**4.34**
	MW-4	12/14/2010	(orig)	**0.13**	< 0.001	0.093	**0.899**	**1.75**	**4.69**
	MW-4	3/17/2011	(orig)	**0.017**	< 0.001	0.018	0.1966	0.0852	**4.46**
	GW-74926-062411-PG-04	6/24/2011	(orig)	**0.0296**	< 0.0010	0.0371	0.472	**1.5**	**4.9**
	GW-074926-092911-CM-008	9/29/2011	(orig)	**0.0392**	< 0.001	0.0039	0.0536	**2.55**	**4.1**
	GW-074926-092911-CM-010	9/29/2011	(Duplicate)	**0.043**	< 0.001	0.0035	0.0483	--	--
	GW-074926-121411-CB-MW-4	12/14/2011	(orig)	**0.101**	< 0.001	0.0443	0.378	**2.62**	**4.58**
	GW-074926-121411-CB-DUP	12/14/2011	(Duplicate)	**0.104**	< 0.005	0.0437	0.372	--	--
	GW-074926-3912-CB-MW-4	3/9/2012	(orig)	**0.0264**	< 0.001	0.0066	0.0651	**2.46**	**4.73**
	GW-074926-3912-CB-DUP	3/9/2012	(Duplicate)	**0.0234**	< 0.001	0.0056	0.058	--	--
	GW-074926-060712-CB-MW-4	6/7/2012	(orig)	**0.044**	< 0.001	0.0245	0.303	**2.07**	**4.02**
	GW-074926-060712-CB-DUP	6/7/2012	(Duplicate)	**0.026**	< 0.001	0.0124	0.155	--	--
	GW-074926-091912-JP-MW-4	9/19/2012	(orig)	0.0029	< 0.001	0.0048	0.0576	**1.93**	**4.5**
	GW-074926-091912-JP-DUP	9/19/2012	(Duplicate)	0.0028	< 0.001	0.0045	0.0551	--	--

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-4	GW-074926-121312-CM-MW-4	12/13/2012	(orig)	**0.0941**	< 0.002	0.0399	0.385	**2.92**	**4.9**
	GW-074926-121312-CM-DUP	12/13/2012	(Duplicate)	**0.197**	< 0.001	0.0712	0.55	--	--
	GW-074926-032012-CM-MW-4	3/20/2013	(orig)	0.0035	< 0.001	0.002	0.0211	**1.82**	**4.37**
	GW-074926-032012-CM-DUP	3/20/2013	(Duplicate)	0.0034	< 0.001	0.0022	0.0212	--	--
	GW-074926-061213-JR-MW4	6/12/2013	(orig)	**0.0588**	< 0.005	0.0509	0.545	**1.53**	**4.29**
	GW-074926-061213-JR-DUP	6/12/2013	(Duplicate)	**0.0215**	< 0.001	0.0213	0.218	--	--
	GW-074926-091113-CM-MW4	9/11/2013	(orig)	**0.0166**	< 0.001	0.0231	0.226	**3.1**	**4.35**
	GW-074926-091113-CM-DUP	9/11/2013	(Duplicate)	**0.0156**	< 0.001	0.0162	0.158	--	--
	GW-074926-121313-CM-MW-4	12/13/2013	(orig)	**0.0362**	< 0.001	0.0199	0.169	**2.7**	**4.8**
	GW-074926-121313-CM-DUP	12/13/2013	(Duplicate)	**0.0357**	< 0.001	0.0185	0.16	--	--
	GW-074926-031914-CK-MW-4	3/19/2014	(orig)	< 0.001	< 0.001	< 0.001	0.0046	**1.33**	**4.19**
	GW-074926-031914-CK-DUP	3/19/2014	(Duplicate)	< 0.001	< 0.001	< 0.001	0.0049	--	--
	GW-074926-061714-CK-MW-4	6/17/2014	(orig)	**0.0069**	< 0.001	< 0.001	< 0.003	**2.68**	**4.01**
	GW-074926-061714-CK-DUP	6/17/2014	(Duplicate)	**0.0063**	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-091814-CB-MW-4	9/18/2014	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**3.43**	**4.63**
	GW-074926-091814-CB-DUP	9/18/2014	(Duplicate)	0.0018	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-121814-CM-MW-4	12/18/2014	(orig)	**0.0398**	< 0.001	0.0062	0.0486	**4.02**	**4.46**
	GW-074926-121814-CM-DUP	12/18/2014	(Duplicate)	**0.0296**	< 0.001	0.0048	0.0354	--	--
	GW-074926-031915-CM-MW-4	3/19/2015	(orig)	0.0012	< 0.001	< 0.001	< 0.003	**1.57**	**4.02**
	GW-074926-031915-CM-DUP	3/19/2015	(Duplicate)	0.0011	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-061815-CB-MW-4	6/18/2015	(orig)	**0.067**	< 0.001	0.0102	0.0563	**3.02**	**4.35**
	GW-074926-091715-CK-MW-4	9/17/2015	(orig)	**0.0319**	< 0.001	0.0297	0.178	**3.03**	**3.75**
	GW-074926-091715-CK-DUP	11/29/2015	(Duplicate)	**0.0318**	< 0.001	0.027	0.162	--	--
	GW-074926-12315-CB-MW-4	12/3/2015	(orig)	**0.0676**	< 0.01	0.0526	0.354	**4.34**	**4.12**
	GW-074926-12315-CB-DUP	12/3/2015	(Duplicate)	**0.0489**	< 0.01	0.0396	0.263	--	--
	GW-074926-033116-CM-MW-4	3/31/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	**1.44**	**3.9**
	GW-074926-062016-SP-MW-4	6/20/2016	(orig)	**0.0428**	<0.001	0.0112	0.0397	**4.88**	**3.87**
	GW-074926-090716-SP-MW-4	9/7/2016	(orig)	**0.0081**	< 0.001	< 0.001	< 0.003	**4.01**	**3.84**
	GW-074926-112916-SP-MW-4	11/29/2016	(orig)	**0.0346**	< 0.001	0.0077	0.0237	**4.31**	**3.88**
	GW-074926-030917-CN-MW-4	3/9/2017	(orig)	<0.001	<0.001	<0.001	<0.003	<0.050	**3.06**
	GW-074926-061517-CN-MW-4	6/15/2017	(orig)	**0.0224**	<0.001	0.0045	0.0206	**15.5**	**11.1**

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-4	GW-11145982-092717-SP-MW-4	9/27/2017	(orig)	**0.0131**	<0.001	0.0043	0.0108	**22.7**	**7.68**
	GW-11145982-120517-SP-MW-4	12/5/2017	(orig)	**0.0247**	<0.001	0.0074	0.0161	**21.1**	**6.2**
	GW-11145982-031518-JW-MW-4	3/15/2018	(orig)	<0.001	<0.001	<0.001	<0.003	**5.68**	**1.64**
	GW-11145982-062718-CM-MW-4	6/27/2018	(orig)	**0.0114**	<0.001	0.0014	0.0031	<0.050	**3.83**
	GW-11145982-090618-CN-MW-4	9/6/2018	(orig)	**0.0179**	<0.001	0.0047	0.0068	**10.5**	**4.58**
	MW-4	12/20/2018	(orig)	**0.0253**	<0.001	0.0132	0.0236	0.146	**4.82**
	MW-4	3/6/2019	(orig)	0.00147	<0.001	<0.001	<0.003	<0.10	**2.29**
	MW-4	6/12/2019	(orig)	0.0048	<0.001	<0.001	<0.003	<0.10	**3.55**
	MW-4	9/6/2019	(orig)	<0.001	<0.001	<0.001	<0.003	<0.10	**3.11**
	MW-4	12/9/2019	(orig)	**0.0318**	<0.001	0.0121	0.012	0.169	**4.43**
	MW-4	3/16/2020	(orig)	<0.001	<0.001	<0.001	<0.003	0.222	**2.39**
	MW-4	6/9/2020	(orig)	0.00155	<0.001	<0.001	<0.003	<0.10	--
	MW-4	8/27/2020	(orig)	0.00311	<0.001	0.00125	<0.003	<0.10	--
	MW-4	11/5/2020	(orig)	0.00181	<0.001	--	<0.003	<0.10	--
	MW-4	2/5/2021	(orig)	<0.001	<0.001	<0.001	<0.003	<0.10	**3.26**
	MW-4	6/28/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.0015	**6.2**	**2.9**
	MW-4	9/20/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.002	**5.2**	**3.3**
	MW-4	11/4/2021	(orig)	0.0012	< 0.001	< 0.001	< 0.0015	0.22	**4.2**
MW-5	GW-074926-091715-CK-MW-5	9/17/2015	(orig)	**0.0182**	< 0.001	0.571	**4.95**	**2.72**	**2.94**
	GW-074926-12315-CB-MW-5	12/3/2015	(orig)	**0.128**	< 0.001	**1.15**	**12.4**	**20.9**	**0.366**
	GW-074926-033116-CM-MW-5	3/31/2016	(orig)	< 0.010	< 0.01	0.101	**0.936**	**2.06**	**2.18**
	GW-074926-033116-CM-DUP	3/31/2016	(Duplicate)	< 0.010	< 0.01	0.136	**1.26**	--	--
	GW-074926-062016-SP-MW-5	6/20/2016	(orig)	**0.0404**	< 0.025	0.16	**2.48**	**6.48**	**2.68**
	GW-074926-090716-SP-MW-5	9/7/2016	(orig)	**0.0229**	< 0.01	0.332	**3.45**	**4.6**	**2.07**
	GW-074926-090716-SP-DUP	9/7/2016	(Duplicate)	**0.0216**	< 0.010	0.393	**4.46**	--	--
		10/26/2016	ISCO Injection-15% PersulfOx solution						
	GW-074926-030917-CN-MW-5	3/9/2017	(orig)	**0.0865**	<0.010	0.267	**3.65**	**24.6**	**11.8**
	GW-074926-061517-CN-MW-5	6/15/2017	(orig)	**0.0369**	<0.010	0.0956	0.533	**7.43**	**6.26**
	GW-11145982-120517-SP-MW-5	12/5/2017	(orig)	**0.0562**	<0.010	0.51	**5.95**	**10.3**	**3.89**
	GW-11145982-120517-SP-DUP	12/5/2017	(Duplicate)	**0.05**	<0.010	0.444	**5.97**	--	--
	GW-11145982-031518-JW-MW-5	3/15/2018	(orig)	< 0.020	< 0.020	0.388	**1.46**	--	--

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
MW-5	GW-11145982-062718-CM-MW-5	6/27/2018	(orig)	**0.0371**	< 0.020	**0.123**	**2.13**	**7.08**	**3.97**
	GW-11145982-090618-CN-MW-5	9/6/2018	(orig)	**0.0511**	<0.010	**0.233**	**1.94**	**4.9**	**2.31**
	MW-5	12/20/2018	(orig)	**0.0568**	0.00136	0.448	**4.48**	0.748	**3.79**
	MW-5	3/7/2019	(orig)	**0.0124**	<.002	0.003	0.146	**3.61**	**1.42**
	MW-5	6/13/2019	(orig)	0.009	<0.001	0.054	0.376	<0.10	**3.00**
	MW-5	9/6/2019	(orig)	**0.032**	<.001	<.001	**1.67**	**8.29**	**3.43**
	MW-5	12/10/2019	(orig)	**0.0024**	<0.001	0.0414	0.236	0.829	**0.795**
	MW-5	3/26/2020	(orig)	**0.0171**	<0.001	0.0133	0.579	**9.16**	**0.67**
	MW-5	6/10/2020	(orig)	**0.00505**	<0.005	<0.005	0.296	**15.5**	--
	MW-5	8/28/2020	(orig)	**0.0196**	<0.005	0.0389	**0.91**	**10.5**	--
	MW-5	11/5/2020	(orig)	**0.0141**	0.00208	0.0987	**1.1**	**3.49**	--
	MW-5	2/8/2021	(orig)	**0.00946**	<0.001	0.0314	0.316	**2.08**	**0.509**
	MW-5	6/28/2021	(orig)	**0.013**	< 0.001	0.065	**0.93**	**30**	**2.9**
	MW-5	9/20/2021	(orig)	**0.0090**	0.0053	0.033	0.43	**21**	**8.0**
	MW-5	11/5/2021	(orig)	**0.0092**	0.041	0.076	**0.91**	**4.1**	**1.9**
DW-1	DW-1	12/16/2009	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--
	RS-74926-062411-CB-01	6/24/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-072712-JK-DW-17	7/27/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	DW-074926-061213-JR-32	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	--	12/18/2014	Attempt to contact landowner regarding well sampling. No response.						
	GW-074926-061815-CB-DOM-32	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-062016-SP-DOM1	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-11145982-092717-SP-32	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
		6/27/2018	Unable to sample-homeowner away.						
	DW-1	5/29/2019	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.10	<0.010
	DW-1	6/9/2020	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.10	--
	DW-1	6/28/2021	(orig)	< 0.001	< 0.001	< 0.001	< 0.0015	< 0.020	0.12
DW-2	#34	6/10/2010	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--
	Domestic #34	3/17/2011	(orig)	< 0.001	< 0.001	< 0.001	< 0.001	--	--
	GW-074926-061712-CB-DW34	6/7/2012	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	DW-074926-061213-JR-34	6/12/2013	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--

TABLE 3
PETROLEUM HYDROCARBON GROUNDWATER ANALYTICAL RESULTS

FLORA VISTA #1
SAN JUAN COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)
NMWQCC Standards				**0.005**	**1.00**	**0.70**	**0.62**	**1.0**	**0.20**
DW-2	--	12/18/2014	Attempt to sample well but landowner had shut well in for the winter months.						
	GW-074926-061815-CB-DOM-34	6/18/2015	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-074926-062016-SP-DOM2	6/20/2016	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-11145982-092717-SP-34	9/27/2017	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	GW-11145982-062718-CM-D34	6/27/2018	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	--	--
	DW-2	8/2/2019	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.10	<0.010
	DW-2	6/9/2020	(orig)	< 0.001	< 0.001	< 0.001	< 0.003	<0.10	--
	DW-2	6/28/2021	Attempt to sample well but well not functional.						

Notes:

mg/L - milligrams per liter

J - laboratory flag for estimated concentration

ND - not detected, practical quantitation limit unknown

NE - not established

NMWQCC - New Mexico Water Quality Control Commission

NT - not tested

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

BOLD - indicates concentration exceeds the NNEPA standard

-- - not analyzed

ENCLOSURE A – ANALYTICAL LABORATORY REPORT

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

February 15, 2021

HilCorp-Farmington, NM

Sample Delivery Group:	L1315024
Samples Received:	02/09/2021
Project Number:	
Description:	Flora Vista 1

Report To: Kurt Hoekstra
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:

Olivia Studebaker
Project Manager

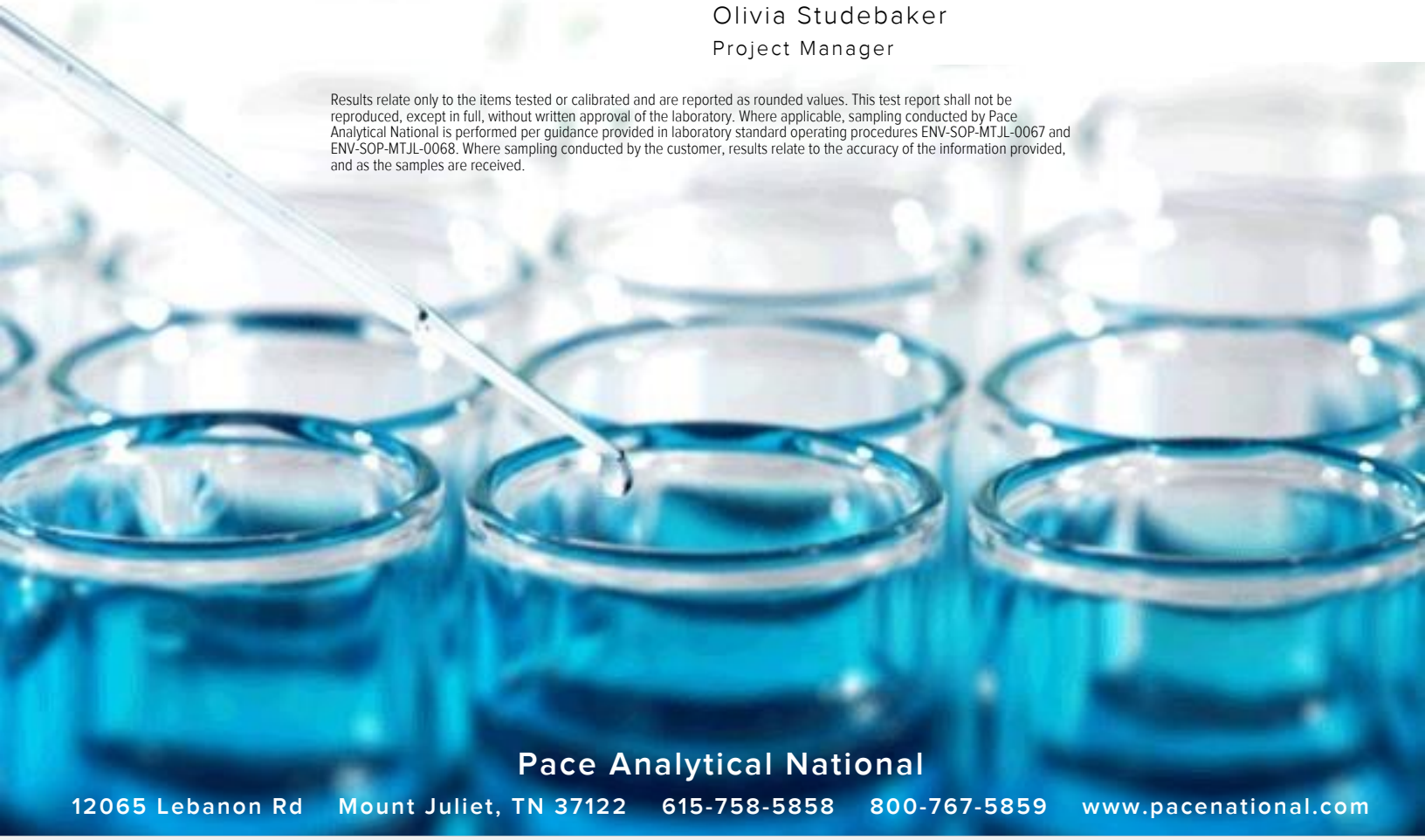

TABLE OF CONTENTS

MW1 L1315024-01 GW

Collected by: Kurt
Collected date/time: 02/08/21 08:42
Received date/time: 02/09/21 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1619007	1	02/11/21 09:30	02/11/21 18:01	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1618655	1	02/09/21 16:38	02/09/21 16:38	JCP	Mt. Juliet, TN

MW2 L1315024-02 GW

Collected by: Kurt
Collected date/time: 02/08/21 11:06
Received date/time: 02/09/21 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1619007	1	02/11/21 09:30	02/11/21 18:09	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1618655	1	02/09/21 16:58	02/09/21 16:58	JCP	Mt. Juliet, TN

MW3 L1315024-03 GW

Collected by: Kurt
Collected date/time: 02/05/21 13:38
Received date/time: 02/09/21 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1619007	1	02/11/21 09:30	02/11/21 18:12	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1618655	1	02/09/21 17:19	02/09/21 17:19	JCP	Mt. Juliet, TN

MW4 L1315024-04 GW

Collected by: Kurt
Collected date/time: 02/05/21 09:43
Received date/time: 02/09/21 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1619007	1	02/11/21 09:30	02/11/21 18:14	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1618655	1	02/09/21 17:39	02/09/21 17:39	JCP	Mt. Juliet, TN

MW5 L1315024-05 GW

Collected by: Kurt
Collected date/time: 02/08/21 10:15
Received date/time: 02/09/21 08:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1619007	1	02/11/21 09:30	02/11/21 18:17	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1618655	1	02/09/21 19:41	02/09/21 19:41	JCP	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Olivia Studebaker
Project Manager

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Iron,Dissolved	12.9		0.100	1	02/11/2021 18:01	WG1619007
Manganese,Dissolved	1.65		0.0100	1	02/11/2021 18:01	WG1619007

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	0.00328		0.00100	1	02/09/2021 16:38	WG1618655
Toluene	ND		0.00100	1	02/09/2021 16:38	WG1618655
Ethylbenzene	0.00249		0.00100	1	02/09/2021 16:38	WG1618655
Total Xylenes	0.0219		0.00300	1	02/09/2021 16:38	WG1618655
(S) Toluene-d8	*98.4*		*80.0-120*		*02/09/2021 16:38*	WG1618655
(S) 4-Bromofluorobenzene	*98.6*		*77.0-126*		*02/09/2021 16:38*	WG1618655
(S) 1,2-Dichloroethane-d4	*80.6*		*70.0-130*		*02/09/2021 16:38*	WG1618655

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/11/2021 18:09	WG1619007
Manganese,Dissolved	ND		0.0100	1	02/11/2021 18:09	WG1619007

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/09/2021 16:58	WG1618655
Toluene	ND		0.00100	1	02/09/2021 16:58	WG1618655
Ethylbenzene	ND		0.00100	1	02/09/2021 16:58	WG1618655
Total Xylenes	ND		0.00300	1	02/09/2021 16:58	WG1618655
(S) Toluene-d8	*98.3*		*80.0-120*		*02/09/2021 16:58*	WG1618655
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*02/09/2021 16:58*	WG1618655
(S) 1,2-Dichloroethane-d4	*81.3*		*70.0-130*		*02/09/2021 16:58*	WG1618655

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/11/2021 18:12	WG1619007
Manganese,Dissolved	ND		0.0100	1	02/11/2021 18:12	WG1619007

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	02/09/2021 17:19	WG1618655
Toluene	ND		0.00100	1	02/09/2021 17:19	WG1618655
Ethylbenzene	ND		0.00100	1	02/09/2021 17:19	WG1618655
Total Xylenes	ND		0.00300	1	02/09/2021 17:19	WG1618655
(S) Toluene-d8	*96.9*		*80.0-120*		*02/09/2021 17:19*	WG1618655
(S) 4-Bromofluorobenzene	*102*		*77.0-126*		*02/09/2021 17:19*	WG1618655
(S) 1,2-Dichloroethane-d4	*82.4*		*70.0-130*		*02/09/2021 17:19*	WG1618655

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Iron,Dissolved	ND		0.100	1	02/11/2021 18:14	WG1619007
Manganese,Dissolved	3.26		0.0100	1	02/11/2021 18:14	WG1619007

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	02/09/2021 17:39	WG1618655
Toluene	ND		0.00100	1	02/09/2021 17:39	WG1618655
Ethylbenzene	ND		0.00100	1	02/09/2021 17:39	WG1618655
Total Xylenes	ND		0.00300	1	02/09/2021 17:39	WG1618655
(S) Toluene-d8	*96.3*		*80.0-120*		*02/09/2021 17:39*	WG1618655
(S) 4-Bromofluorobenzene	*99.9*		*77.0-126*		*02/09/2021 17:39*	WG1618655
(S) 1,2-Dichloroethane-d4	*83.6*		*70.0-130*		*02/09/2021 17:39*	WG1618655

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	2.08		0.100	1	02/11/2021 18:17	WG1619007
Manganese,Dissolved	0.509		0.0100	1	02/11/2021 18:17	WG1619007

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.00946		0.00100	1	02/09/2021 19:41	WG1618655
Toluene	ND		0.00100	1	02/09/2021 19:41	WG1618655
Ethylbenzene	0.0314		0.00100	1	02/09/2021 19:41	WG1618655
Total Xylenes	0.316		0.00300	1	02/09/2021 19:41	WG1618655
(S) Toluene-d8	*100*		*80.0-120*		*02/09/2021 19:41*	WG1618655
(S) 4-Bromofluorobenzene	*103*		*77.0-126*		*02/09/2021 19:41*	WG1618655
(S) 1,2-Dichloroethane-d4	*80.3*		*70.0-130*		*02/09/2021 19:41*	WG1618655

Method Blank (MB)

(MB) R3621846-1 02/11/21 17:05

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Iron,Dissolved	U		0.0180	0.100
Manganese,Dissolved	U		0.000934	0.0100

Laboratory Control Sample (LCS)

(LCS) R3621846-2 02/11/21 17:08

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Iron,Dissolved	10.0	9.38	93.8	80.0-120	
Manganese,Dissolved	1.00	0.928	92.8	80.0-120	

Method Blank (MB)

(MB) R3621816-2 02/09/21 10:08

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Ethylbenzene	U		0.000137	0.00100
Toluene	U		0.000278	0.00100
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	*98.0*			*80.0-120*
(S) 4-Bromofluorobenzene	*101*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*81.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3621816-1 02/09/21 09:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00540	108	70.0-123	
Ethylbenzene	0.00500	0.00473	94.6	79.0-123	
Toluene	0.00500	0.00480	96.0	79.0-120	
Xylenes, Total	0.0150	0.0138	92.0	79.0-123	
(S) Toluene-d8			*96.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*98.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*82.5*	*70.0-130*	

L1315052-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1315052-02 02/09/21 18:40 • (MS) R3621816-3 02/09/21 20:02 • (MSD) R3621816-4 02/09/21 20:22

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	ND	0.00549	0.00434	110	86.8	1	17.0-158			23.4	27
Ethylbenzene	0.00500	ND	0.00474	0.00384	94.8	76.8	1	30.0-155			21.0	27
Toluene	0.00500	ND	0.00474	0.00401	94.8	80.2	1	26.0-154			16.7	28
Xylenes, Total	0.0150	ND	0.0140	0.0114	93.3	76.0	1	29.0-154			20.5	28
(S) Toluene-d8					*91.5*	*94.6*		*80.0-120*				
(S) 4-Bromofluorobenzene					*97.3*	*102*		*77.0-126*				
(S) 1,2-Dichloroethane-d4					*83.1*	*83.1*		*70.0-130*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
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Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1

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Texas	T104704328-20-18

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

HilCorp-Farmington, NM

382 Road 3100
Aztec, NM 87401

Billing Information:
Clara Cardoza
PO Box 61529
Houston, TX 77208

Pres Chk

Report to: Kurt Hoekstra

Email To: jdeal@hilcorp.com;khoekstra@hilcorp.com

Project Description: Flora Vista 1

City/State Collected:

Please Circle: PT MT CT ET

Phone: 505-486-9543

Client Project #

Lab Project # HILCORANM-FLORAVISTA

Collected by (print): Kurt

Collected by (signature): Kurt Hoekstra

Immediately Packed on Ice N ___ Y X

Site/Facility ID # Flora Vista #1

P.O. #

Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page of

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 1315024

H128

Acctnum: HILCORANM
Template: T146871
Prelogin: P816016
PM: 823 - Olivia Studebaker
PB: bt 12/9/2020

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Dissolved Fe, Mn 250mlHDPE-NoPres	V8260BTEX 40mlAmb-HCl	No Samples Field Filtered	Remarks	Sample # (lab only)
MW1		GW		2-8	8:42	4	X	X	X		-01
MW2		GW		2-8	11:06	4	X	X	X		02
MW3		GW		2-5	1:38	4	X	X	X		03
MW4		GW		2-5	9:43	4	X	X	X		04
MW5		GW		2-8	10:15	4	X	X	X		05

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 9348 1611 2386

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature) Kurt Hoekstra — Date: 2-8-21 — Time: 11:45 — Received by: (Signature)

Trip Blank Received: Yes / No (No) HCL / MeoH TBR

Relinquished by : (Signature) — Date: — Time: — Received by: (Signature)

Temp: 8.1 °C — Bottles Received: 20

If preservation required by Login: Date/Time

Relinquished by : (Signature) — Date: — Time: — Received for lab by: (Signature) NPappas — Date: 2-9-21 — Time: 815

Hold: — Condition: NCF / OK (OK)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

July 14, 2021

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

RE: Flora Vista 1 OrderNo.: 2106E91

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/29/2021 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 **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** DW-1
Project: Flora Vista 1 **Collection Date:** 6/28/2021 1:00:00 PM
Lab ID: 2106E91-001 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	ND	0.020		mg/L	1	7/1/2021 10:01:39 AM
Manganese	0.12	0.0020	*	mg/L	1	7/1/2021 10:01:39 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	7/1/2021 2:26:13 AM
Toluene	ND	1.0		µg/L	1	7/1/2021 2:26:13 AM
Ethylbenzene	ND	1.0		µg/L	1	7/1/2021 2:26:13 AM
Xylenes, Total	ND	1.5		µg/L	1	7/1/2021 2:26:13 AM
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/1/2021 2:26:13 AM
Surr: Dibromofluoromethane	100	70-130		%Rec	1	7/1/2021 2:26:13 AM
Surr: Toluene-d8	98.2	70-130		%Rec	1	7/1/2021 2:26:13 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	Value above quantitation range
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 range due to dilution or matrix

Analytical Report
Lab Order **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-1
Project: Flora Vista 1 **Collection Date:** 6/28/2021 2:15:00 PM
Lab ID: 2106E91-002 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	2.0	0.10	*	mg/L	5	7/1/2021 10:25:41 AM
Manganese	1.8	0.010	*	mg/L	5	7/1/2021 10:25:41 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	35	5.0	D	µg/L	5	7/1/2021 2:53:19 AM
Toluene	ND	5.0	D	µg/L	5	7/1/2021 2:53:19 AM
Ethylbenzene	54	5.0	D	µg/L	5	7/1/2021 2:53:19 AM
Xylenes, Total	200	7.5	D	µg/L	5	7/1/2021 2:53:19 AM
Surr: 1,2-Dichloroethane-d4	91.7	70-130	D	%Rec	5	7/1/2021 2:53:19 AM
Surr: Dibromofluoromethane	89.8	70-130	D	%Rec	5	7/1/2021 2:53:19 AM
Surr: Toluene-d8	96.2	70-130	D	%Rec	5	7/1/2021 2:53:19 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	Value above quantitation range
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 range due to dilution or matrix

Analytical Report
Lab Order **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-2
Project: Flora Vista 1 **Collection Date:** 6/28/2021 1:20:00 PM
Lab ID: 2106E91-003 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	0.75	0.020	*	mg/L	1	7/1/2021 10:04:35 AM
Manganese	0.51	0.0020	*	mg/L	1	7/1/2021 10:04:35 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	7/1/2021 3:20:35 AM
Toluene	ND	1.0		µg/L	1	7/1/2021 3:20:35 AM
Ethylbenzene	ND	1.0		µg/L	1	7/1/2021 3:20:35 AM
Xylenes, Total	ND	1.5		µg/L	1	7/1/2021 3:20:35 AM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/1/2021 3:20:35 AM
Surr: Dibromofluoromethane	102	70-130		%Rec	1	7/1/2021 3:20:35 AM
Surr: Toluene-d8	99.6	70-130		%Rec	1	7/1/2021 3:20:35 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	Value above quantitation range
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 range due to dilution or matrix

Analytical Report
Lab Order **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-3
Project: Flora Vista 1 **Collection Date:** 6/28/2021 1:40:00 PM
Lab ID: 2106E91-004 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	ND	0.020		mg/L	1	7/1/2021 10:06:12 AM
Manganese	0.0060	0.0020		mg/L	1	7/1/2021 10:06:12 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	7/1/2021 3:47:53 AM
Toluene	ND	1.0		µg/L	1	7/1/2021 3:47:53 AM
Ethylbenzene	ND	1.0		µg/L	1	7/1/2021 3:47:53 AM
Xylenes, Total	ND	1.5		µg/L	1	7/1/2021 3:47:53 AM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/1/2021 3:47:53 AM
Surr: Dibromofluoromethane	99.1	70-130		%Rec	1	7/1/2021 3:47:53 AM
Surr: Toluene-d8	97.0	70-130		%Rec	1	7/1/2021 3:47:53 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	Value above quantitation range
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 range due to dilution or matrix		

Analytical Report
Lab Order **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-4
Project: Flora Vista 1 **Collection Date:** 6/28/2021 1:50:00 PM
Lab ID: 2106E91-005 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	6.2	0.20	*	mg/L	10	7/1/2021 10:27:16 AM
Manganese	2.9	0.020	*	mg/L	10	7/1/2021 10:27:16 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	7/1/2021 5:09:29 AM
Toluene	ND	1.0		µg/L	1	7/1/2021 5:09:29 AM
Ethylbenzene	ND	1.0		µg/L	1	7/1/2021 5:09:29 AM
Xylenes, Total	ND	1.5		µg/L	1	7/1/2021 5:09:29 AM
Surr: 1,2-Dichloroethane-d4	108	70-130		%Rec	1	7/1/2021 5:09:29 AM
Surr: Dibromofluoromethane	104	70-130		%Rec	1	7/1/2021 5:09:29 AM
Surr: Toluene-d8	97.1	70-130		%Rec	1	7/1/2021 5:09:29 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	Value above quantitation range
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 range due to dilution or matrix

Analytical Report
Lab Order **2106E91**
Date Reported: **7/14/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW-5
Project: Flora Vista 1 **Collection Date:** 6/28/2021 2:00:00 PM
Lab ID: 2106E91-006 **Matrix:** GROUNDWA **Received Date:** 6/29/2021 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**
Iron	30	1.0	*	mg/L	50	7/1/2021 10:30:11 AM
Manganese	2.9	0.010	*	mg/L	5	7/1/2021 10:28:52 AM
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **RAA**
Benzene	13	1.0		µg/L	1	7/1/2021 8:47:00 PM
Toluene	ND	1.0		µg/L	1	7/1/2021 8:47:00 PM
Ethylbenzene	65	1.0		µg/L	1	7/1/2021 8:47:00 PM
Xylenes, Total	930	15		µg/L	10	7/2/2021 2:47:00 PM
Surr: 1,2-Dichloroethane-d4	88.8	70-130		%Rec	1	7/1/2021 8:47:00 PM
Surr: Dibromofluoromethane	90.7	70-130		%Rec	1	7/1/2021 8:47:00 PM
Surr: Toluene-d8	102	70-130		%Rec	1	7/1/2021 8:47:00 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	Value above quantitation range
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 range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106E91**
14-Jul-21

Client: HILCORP ENERGY
Project: Flora Vista 1

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW** Batch ID: **B79507** RunNo: **79507**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795409** 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** SampType: **LCSLL** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC** Batch ID: **B79507** RunNo: **79507**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795410** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.021	0.020	0.02000	0	103	50	150			
Manganese	ND	0.0020	0.002000	0	92.1	50	150			

Sample ID: **LCS** SampType: **LCS** TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW** Batch ID: **B79507** RunNo: **79507**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795411** 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	0.50	0.0020	0.5000	0	100	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106E91**
14-Jul-21

Client: HILCORP ENERGY
Project: Flora Vista 1

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW** Batch ID: **SW79505** RunNo: **79505**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795311** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130			
Toluene	21	1.0	20.00	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		107	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		105	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: **2106e91-004a ms** SampType: **MS** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-3** Batch ID: **SW79505** RunNo: **79505**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795321** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	111	70	130			
Toluene	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	10		10.00		105	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		102	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	70	130			

Sample ID: **2106e91-004a msd** SampType: **MSD** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **MW-3** Batch ID: **SW79505** RunNo: **79505**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795322** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	110	70	130	1.12	20	
Toluene	19	1.0	20.00	0	94.5	70	130	6.25	20	
Surr: 1,2-Dichloroethane-d4	11		10.00		109	70	130	0	0	
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130	0	0	
Surr: Dibromofluoromethane	10		10.00		104	70	130	0	0	
Surr: Toluene-d8	9.4		10.00		94.4	70	130	0	0	

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **SW79505** RunNo: **79505**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795325** 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								

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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106E91**
14-Jul-21

Client: HILCORP ENERGY
Project: Flora Vista 1

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **SW79505** RunNo: **79505**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2795325** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	10		10.00		104	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		106	70	130			
Surr: Dibromofluoromethane	10		10.00		101	70	130			
Surr: Toluene-d8	9.8		10.00		98.2	70	130			

Sample ID: **100ng 8260 lcs** SampType: **LCS** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW** Batch ID: **SL79511** RunNo: **79511**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2797143** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.0	70	130			
Toluene	20	1.0	20.00	0	99.7	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.3	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		94.8	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.6	70	130			
Surr: Toluene-d8	9.5		10.00		94.6	70	130			

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **SL79511** RunNo: **79511**
Prep Date: Analysis Date: **7/1/2021** SeqNo: **2797144** 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								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.3	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		96.9	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.8	70	130			
Surr: Toluene-d8	9.4		10.00		94.4	70	130			

Sample ID: **100ng 8260 lcs** SampType: **LCS** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **LCSW** Batch ID: **SL79551** RunNo: **79551**
Prep Date: Analysis Date: **7/2/2021** SeqNo: **2797618** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.2	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		95.3	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.3	70	130			
Surr: Toluene-d8	9.6		10.00		95.9	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2106E91**
14-Jul-21

Client: HILCORP ENERGY
Project: Flora Vista 1

Sample ID: **MB** SampType: **MBLK** TestCode: **EPA Method 8260: Volatiles Short List**
Client ID: **PBW** Batch ID: **SL79551** RunNo: **79551**
Prep Date: Analysis Date: **7/2/2021** SeqNo: **2797619** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.9		10.00		98.7	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		93.4	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.6	70	130			
Surr: Toluene-d8	9.4		10.00		93.9	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **HILCORP ENERGY** Work Order Number: **2106E91** RcptNo: **1**

Received By: **Juan Rojas** **6/29/2021 8:00:00 AM** Juan Rojas

Completed By: **Desiree Dominguez** **6/29/2021 8:41:18 AM** DD

Reviewed By: SPA 6.29.21

Chain of Custody

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

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 ☐ SPA 6.29.21
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 ☐
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 (6) (<2 or >12 unless noted)
Adjusted? Yes
Checked by: T.C. 6.29.21

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: Added ~40mL of HNO_3 to samples 002-004 for pH. T.C. 6.29.21

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.6	Good	Yes			
2	1.5	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp

Mitch Killough

Mailing Address: 1111 Travis St

Houston Tx

Phone #: 281-851-2338

email or Fax#: mkillough@hilcorp.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Flora Vista #1

Project #: PO# 60004000

Project Manager: Stuart Hyde

Stuart.hyde@wsp.com

Sampler: S Hyde

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 0.8-0.2=0.6 (°C) 1.7-0.2=1.5

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. 2106E91	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Dissolved Fe, Mn
6/28	1300	GW	DW-1	3 VOAs, poly		-001	X										X
	1415		MW-1			-002	X										X
	1320		MW-2			-003	X										X
	1340		MW-3			-004	X										X
	1350		MW-4			-005	X										X
	1400		MW-5			-006	X										X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/28/21	1509					
6/28/21	1759			Courier	6/29/21	8:00

Remarks:

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: clients.hallenvironmental.com

September 30, 2021

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

RE: Flora Vista 1 OrderNo.: 2109B00

Dear Mitch Killough:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/21/2021 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 **2109B00**
Date Reported: **9/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW2
Project: Flora Vista 1 **Collection Date:** 9/20/2021 2:15:00 PM
Lab ID: 2109B00-001 **Matrix:** AQUEOUS **Received Date:** 9/21/2021 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	9/25/2021 3:50:00 PM
Toluene	ND	1.0		µg/L	1	9/25/2021 3:50:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/25/2021 3:50:00 PM
Xylenes, Total	ND	2.0		µg/L	1	9/25/2021 3:50:00 PM
Surr: 4-Bromofluorobenzene	84.2	70-130		%Rec	1	9/25/2021 3:50:00 PM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	0.88	0.050	*	mg/L	1	9/23/2021 11:02:11 AM
Manganese	0.72	0.0020	*	mg/L	1	9/23/2021 11:02:11 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	Value above quantitation range
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 range due to dilution or matrix		

Analytical Report
Lab Order **2109B00**
Date Reported: **9/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW3
Project: Flora Vista 1
Collection Date: 9/20/2021 2:02:00 PM
Lab ID: 2109B00-002 **Matrix:** AQUEOUS **Received Date:** 9/21/2021 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	9/25/2021 4:10:00 PM
Toluene	ND	1.0		µg/L	1	9/25/2021 4:10:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/25/2021 4:10:00 PM
Xylenes, Total	ND	2.0		µg/L	1	9/25/2021 4:10:00 PM
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	9/25/2021 4:10:00 PM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	7.1	1.0	*	mg/L	20	9/23/2021 11:06:43 AM
Manganese	0.12	0.010	*	mg/L	5	9/23/2021 11:05:17 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	Value above quantitation range
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 range due to dilution or matrix		

Analytical Report
Lab Order **2109B00**
Date Reported: **9/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** MW4
Project: Flora Vista 1 **Collection Date:** 9/20/2021 1:45:00 PM
Lab ID: 2109B00-003 **Matrix:** AQUEOUS **Received Date:** 9/21/2021 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	1.0		µg/L	1	9/25/2021 4:30:00 PM
Toluene	ND	1.0		µg/L	1	9/25/2021 4:30:00 PM
Ethylbenzene	ND	1.0		µg/L	1	9/25/2021 4:30:00 PM
Xylenes, Total	ND	2.0		µg/L	1	9/25/2021 4:30:00 PM
Surr: 4-Bromofluorobenzene	87.5	70-130		%Rec	1	9/25/2021 4:30:00 PM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	5.2	0.50	*	mg/L	10	9/23/2021 12:27:26 PM
Manganese	3.3	0.010	*	mg/L	5	9/23/2021 11:14:30 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	Value above quantitation range
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 range due to dilution or matrix		

Analytical Report
Lab Order **2109B00**
Date Reported: **9/30/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: MW5
Project: Flora Vista 1
Collection Date: 9/20/2021 2:25:00 PM
Lab ID: 2109B00-004 **Matrix:** AQUEOUS **Received Date:** 9/21/2021 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	9.0	1.0		µg/L	1	9/25/2021 5:09:00 PM
Toluene	5.3	1.0		µg/L	1	9/25/2021 5:09:00 PM
Ethylbenzene	33	1.0		µg/L	1	9/25/2021 5:09:00 PM
Xylenes, Total	430	20		µg/L	10	9/25/2021 4:49:00 PM
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	9/25/2021 5:09:00 PM
EPA METHOD 200.7: METALS						Analyst: **ELS**
Iron	21	5.0	*	mg/L	100	9/23/2021 11:17:25 AM
Manganese	8.0	0.20	*	mg/L	100	9/23/2021 11:17:25 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	Value above quantitation range
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 range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B00**
30-Sep-21

Client: HILCORP ENERGY
Project: Flora Vista 1

Sample ID: **MB-62769** SampType: **MBLK** TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW** Batch ID: **62769** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880357** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.050								
Manganese	ND	0.0020								

Sample ID: **LLLCS-62769** SampType: **LCSLL** TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC** Batch ID: **62769** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880360** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.050	0.02000	0	136	50	150			
Manganese	0.0021	0.0020	0.002000	0	103	50	150			

Sample ID: **LCS-62769** SampType: **LCS** TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW** Batch ID: **62769** RunNo: **81529**
Prep Date: **9/22/2021** Analysis Date: **9/23/2021** SeqNo: **2880362** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.51	0.050	0.5000	0	103	85	115			
Manganese	0.49	0.0020	0.5000	0	97.5	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2109B00**

30-Sep-21

Client: HILCORP ENERGY

Project: Flora Vista 1

Sample ID: **100ng BTEX lcs** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSW** Batch ID: **BW81606** RunNo: **81606**

Prep Date: Analysis Date: **9/25/2021** SeqNo: **2883874** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	94.0	80	120			
Toluene	19	1.0	20.00	0	95.1	80	120			
Ethylbenzene	20	1.0	20.00	0	98.3	80	120			
Xylenes, Total	59	2.0	60.00	0	99.2	80	120			
Surr: 4-Bromofluorobenzene	18		20.00		89.2	70	130			

Sample ID: **mb** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBW** Batch ID: **BW81606** RunNo: **81606**

Prep Date: Analysis Date: **9/25/2021** SeqNo: **2883875** 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	2.0								
Surr: 4-Bromofluorobenzene	18		20.00		89.4	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **HILCORP ENERGY** Work Order Number: **2109B00** RcptNo: **1**

Received By: **Cheyenne Cason** **9/21/2021 7:00:00 AM** Chk

Completed By: **Isaiah Ortiz** **9/21/2021 8:40:16 AM** I-OK

Reviewed By: VPG 9/21/21

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 ☐
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: 4 (<2 or >12 unless noted)
Adjusted? NO
Checked by: SPA 9.21.21

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:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.1	Good	Not Present			

Chain-of-Custody Record

Client: MITCH KILLOUGH

Hilcorp

Mailing Address:

Phone #:

email or Fax#: MKILLOUGH@HILLORP.COM

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: FLORA VISTA #1

Project #: TE017821026

Project Manager: STUART HYDE

Sampler: PAYTON BENNER

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 3.0+0.1=3.1 (°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. 2109800	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Fe, Mn
9/20/21	14:15	W	MW2	(3) 40ml VOA (1) 125ml	HCl HNO3	001	X										X
	14:02	W	MW3			002	X										X
	13:45	W	MW4			003	X										X
	14:25	W	MW5			004	X										X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
9-20-21	1526	[signature]	[signature]		9/20/21	1526
9/20/21	1747	[signature]	one courier		9/21/21	0700

Remarks:

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: clients.hallenvironmental.com

November 24, 2021

Kurt Hoekstra

Hilcorp Energy
PO Box 61529
Houston, TX 77208-1529
TEL: (337) 276-7676
FAX:

RE: Flora Vista 1 OrderNo.: 2111374

Dear Kurt Hoekstra:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/6/2021 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

CLIENT: Hilcorp Energy
Project: Flora Vista 1
Lab ID: 2111374-001 **Matrix:** AQUEOUS

Client Sample ID: MW-1
Collection Date: 11/5/2021 10:20:00 AM
Received Date: 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Iron	1.2	0.10	*	mg/L	5	11/9/2021 9:30:53 AM	A82693
Manganese	2.2	0.010	*	mg/L	5	11/9/2021 9:30:53 AM	A82693
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	16	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Toluene	23	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Ethylbenzene	26	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Methyl tert-butyl ether (MTBE)	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2,4-Trimethylbenzene	73	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,3,5-Trimethylbenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2-Dichloroethane (EDC)	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2-Dibromoethane (EDB)	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Naphthalene	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1-Methylnaphthalene	ND	40	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
2-Methylnaphthalene	ND	40	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Acetone	ND	100	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Bromobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Bromodichloromethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Bromoform	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Bromomethane	ND	30	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
2-Butanone	ND	100	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Carbon disulfide	ND	100	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Carbon Tetrachloride	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Chlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Chloroethane	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Chloroform	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Chloromethane	ND	30	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
2-Chlorotoluene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
4-Chlorotoluene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
cis-1,2-DCE	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
cis-1,3-Dichloropropene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2-Dibromo-3-chloropropane	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Dibromochloromethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Dibromomethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2-Dichlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,3-Dichlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,4-Dichlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Dichlorodifluoromethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1-Dichloroethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1-Dichloroethene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-1
Project: Flora Vista 1
Collection Date: 11/5/2021 10:20:00 AM
Lab ID: 2111374-001 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2-Dichloropropane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,3-Dichloropropane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
2,2-Dichloropropane	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1-Dichloropropene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Hexachlorobutadiene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
2-Hexanone	ND	100	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Isopropylbenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
4-Isopropyltoluene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
4-Methyl-2-pentanone	ND	100	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Methylene Chloride	ND	30	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
n-Butylbenzene	ND	30	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
n-Propylbenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
sec-Butylbenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Styrene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
tert-Butylbenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1,1,2-Tetrachloroethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1,2,2-Tetrachloroethane	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Tetrachloroethene (PCE)	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
trans-1,2-DCE	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
trans-1,3-Dichloropropene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2,3-Trichlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2,4-Trichlorobenzene	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1,1-Trichloroethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,1,2-Trichloroethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Trichloroethene (TCE)	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Trichlorofluoromethane	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
1,2,3-Trichloropropane	ND	20	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Vinyl chloride	ND	10	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Xylenes, Total	130	15	D	µg/L	10	11/16/2021 5:59:32 AM	B82851
Surr: 1,2-Dichloroethane-d4	102	70-130	D	%Rec	10	11/16/2021 5:59:32 AM	B82851
Surr: 4-Bromofluorobenzene	99.4	70-130	D	%Rec	10	11/16/2021 5:59:32 AM	B82851
Surr: Dibromofluoromethane	103	70-130	D	%Rec	10	11/16/2021 5:59:32 AM	B82851
Surr: Toluene-d8	101	70-130	D	%Rec	10	11/16/2021 5:59:32 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-2
Project: Flora Vista 1
Collection Date: 11/5/2021 2:00:00 PM
Lab ID: 2111374-002 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Iron	0.060	0.020		mg/L	1	11/9/2021 9:34:09 AM	A82693
Manganese	0.080	0.0020	*	mg/L	1	11/9/2021 9:34:09 AM	A82693
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Toluene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Ethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Naphthalene	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
2-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Acetone	ND	10		µg/L	1	11/16/2021 6:26:37 AM	B82851
Bromobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Bromodichloromethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Bromoform	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Bromomethane	ND	3.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
2-Butanone	ND	10		µg/L	1	11/16/2021 6:26:37 AM	B82851
Carbon disulfide	ND	10		µg/L	1	11/16/2021 6:26:37 AM	B82851
Carbon Tetrachloride	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Chlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Chloroethane	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Chloroform	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Chloromethane	ND	3.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
2-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
4-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
cis-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Dibromochloromethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Dibromomethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1-Dichloroethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1-Dichloroethene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-2
Project: Flora Vista 1
Collection Date: 11/5/2021 2:00:00 PM
Lab ID: 2111374-002 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,3-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
2,2-Dichloropropane	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Hexachlorobutadiene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
2-Hexanone	ND	10		µg/L	1	11/16/2021 6:26:37 AM	B82851
Isopropylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
4-Isopropyltoluene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
4-Methyl-2-pentanone	ND	10		µg/L	1	11/16/2021 6:26:37 AM	B82851
Methylene Chloride	ND	3.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
n-Butylbenzene	ND	3.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
n-Propylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
sec-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Styrene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
tert-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
trans-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Trichlorofluoromethane	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Vinyl chloride	ND	1.0		µg/L	1	11/16/2021 6:26:37 AM	B82851
Xylenes, Total	ND	1.5		µg/L	1	11/16/2021 6:26:37 AM	B82851
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	11/16/2021 6:26:37 AM	B82851
Surr: 4-Bromofluorobenzene	93.8	70-130		%Rec	1	11/16/2021 6:26:37 AM	B82851
Surr: Dibromofluoromethane	103	70-130		%Rec	1	11/16/2021 6:26:37 AM	B82851
Surr: Toluene-d8	107	70-130		%Rec	1	11/16/2021 6:26:37 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-3
Project: Flora Vista 1
Collection Date: 11/5/2021 12:00:00 PM
Lab ID: 2111374-003 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Iron	0.077	0.020		mg/L	1	11/9/2021 9:43:31 AM	A82693
Manganese	0.13	0.0020	*	mg/L	1	11/9/2021 9:43:31 AM	A82693
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Toluene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Ethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Naphthalene	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
2-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Acetone	ND	10		µg/L	1	11/16/2021 6:53:34 AM	B82851
Bromobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Bromodichloromethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Bromoform	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Bromomethane	ND	3.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
2-Butanone	ND	10		µg/L	1	11/16/2021 6:53:34 AM	B82851
Carbon disulfide	ND	10		µg/L	1	11/16/2021 6:53:34 AM	B82851
Carbon Tetrachloride	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Chlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Chloroethane	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Chloroform	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Chloromethane	ND	3.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
2-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
4-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
cis-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Dibromochloromethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Dibromomethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1-Dichloroethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1-Dichloroethene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-3
Project: Flora Vista 1
Collection Date: 11/5/2021 12:00:00 PM
Lab ID: 2111374-003 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,3-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
2,2-Dichloropropane	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Hexachlorobutadiene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
2-Hexanone	ND	10		µg/L	1	11/16/2021 6:53:34 AM	B82851
Isopropylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
4-Isopropyltoluene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
4-Methyl-2-pentanone	ND	10		µg/L	1	11/16/2021 6:53:34 AM	B82851
Methylene Chloride	ND	3.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
n-Butylbenzene	ND	3.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
n-Propylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
sec-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Styrene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
tert-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
trans-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Trichlorofluoromethane	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Vinyl chloride	ND	1.0		µg/L	1	11/16/2021 6:53:34 AM	B82851
Xylenes, Total	ND	1.5		µg/L	1	11/16/2021 6:53:34 AM	B82851
Surr: 1,2-Dichloroethane-d4	102	70-130		%Rec	1	11/16/2021 6:53:34 AM	B82851
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	11/16/2021 6:53:34 AM	B82851
Surr: Dibromofluoromethane	103	70-130		%Rec	1	11/16/2021 6:53:34 AM	B82851
Surr: Toluene-d8	96.5	70-130		%Rec	1	11/16/2021 6:53:34 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-4
Project: Flora Vista 1
Collection Date: 11/4/2021 1:20:00 PM
Lab ID: 2111374-004 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Iron	0.22	0.020		mg/L	1	11/9/2021 9:46:45 AM	A82693
Manganese	4.2	0.010	*	mg/L	5	11/9/2021 9:48:24 AM	A82693
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	1.2	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Toluene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Ethylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Naphthalene	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
2-Methylnaphthalene	ND	4.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Acetone	ND	10		µg/L	1	11/16/2021 7:20:31 AM	B82851
Bromobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Bromodichloromethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Bromoform	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Bromomethane	ND	3.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
2-Butanone	ND	10		µg/L	1	11/16/2021 7:20:31 AM	B82851
Carbon disulfide	ND	10		µg/L	1	11/16/2021 7:20:31 AM	B82851
Carbon Tetrachloride	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Chlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Chloroethane	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Chloroform	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Chloromethane	ND	3.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
2-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
4-Chlorotoluene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
cis-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Dibromochloromethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Dibromomethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1-Dichloroethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1-Dichloroethene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-4
Project: Flora Vista 1
Collection Date: 11/4/2021 1:20:00 PM
Lab ID: 2111374-004 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,3-Dichloropropane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
2,2-Dichloropropane	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Hexachlorobutadiene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
2-Hexanone	ND	10		µg/L	1	11/16/2021 7:20:31 AM	B82851
Isopropylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
4-Isopropyltoluene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
4-Methyl-2-pentanone	ND	10		µg/L	1	11/16/2021 7:20:31 AM	B82851
Methylene Chloride	ND	3.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
n-Butylbenzene	ND	3.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
n-Propylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
sec-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Styrene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
tert-Butylbenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
trans-1,2-DCE	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Trichlorofluoromethane	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Vinyl chloride	ND	1.0		µg/L	1	11/16/2021 7:20:31 AM	B82851
Xylenes, Total	ND	1.5		µg/L	1	11/16/2021 7:20:31 AM	B82851
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	11/16/2021 7:20:31 AM	B82851
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	11/16/2021 7:20:31 AM	B82851
Surr: Dibromofluoromethane	108	70-130		%Rec	1	11/16/2021 7:20:31 AM	B82851
Surr: Toluene-d8	97.8	70-130		%Rec	1	11/16/2021 7:20:31 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-5
Project: Flora Vista 1
Collection Date: 11/5/2021 12:50:00 PM
Lab ID: 2111374-005 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 200.7: DISSOLVED METALS						Analyst: **ELS**	
Iron	4.1	0.20	*	mg/L	10	11/9/2021 9:51:10 AM	A82693
Manganese	1.9	0.020	*	mg/L	10	11/9/2021 9:51:10 AM	A82693
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
Benzene	9.2	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Toluene	41	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Ethylbenzene	76	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2,4-Trimethylbenzene	41	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,3,5-Trimethylbenzene	20	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Naphthalene	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
1-Methylnaphthalene	ND	20		µg/L	5	11/16/2021 7:47:25 AM	B82851
2-Methylnaphthalene	ND	20		µg/L	5	11/16/2021 7:47:25 AM	B82851
Acetone	ND	50		µg/L	5	11/16/2021 7:47:25 AM	B82851
Bromobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Bromodichloromethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Bromoform	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Bromomethane	ND	15		µg/L	5	11/16/2021 7:47:25 AM	B82851
2-Butanone	ND	50		µg/L	5	11/16/2021 7:47:25 AM	B82851
Carbon disulfide	ND	50		µg/L	5	11/16/2021 7:47:25 AM	B82851
Carbon Tetrachloride	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Chlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Chloroethane	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
Chloroform	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Chloromethane	ND	15		µg/L	5	11/16/2021 7:47:25 AM	B82851
2-Chlorotoluene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
4-Chlorotoluene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
cis-1,2-DCE	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
Dibromochloromethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Dibromomethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2-Dichlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,3-Dichlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,4-Dichlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Dichlorodifluoromethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1-Dichloroethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1-Dichloroethene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

Analytical Report
Lab Order **2111374**
Date Reported: **11/24/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy
Client Sample ID: MW-5
Project: Flora Vista 1
Collection Date: 11/5/2021 12:50:00 PM
Lab ID: 2111374-005 **Matrix:** AQUEOUS **Received Date:** 11/6/2021 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **RAA**	
1,2-Dichloropropane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,3-Dichloropropane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
2,2-Dichloropropane	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1-Dichloropropene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Hexachlorobutadiene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
2-Hexanone	ND	50		µg/L	5	11/16/2021 7:47:25 AM	B82851
Isopropylbenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
4-Isopropyltoluene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
4-Methyl-2-pentanone	ND	50		µg/L	5	11/16/2021 7:47:25 AM	B82851
Methylene Chloride	ND	15		µg/L	5	11/16/2021 7:47:25 AM	B82851
n-Butylbenzene	ND	15		µg/L	5	11/16/2021 7:47:25 AM	B82851
n-Propylbenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
sec-Butylbenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Styrene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
tert-Butylbenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
trans-1,2-DCE	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1,1-Trichloroethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,1,2-Trichloroethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Trichloroethene (TCE)	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Trichlorofluoromethane	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
1,2,3-Trichloropropane	ND	10		µg/L	5	11/16/2021 7:47:25 AM	B82851
Vinyl chloride	ND	5.0		µg/L	5	11/16/2021 7:47:25 AM	B82851
Xylenes, Total	910	7.5		µg/L	5	11/16/2021 7:47:25 AM	B82851
Surr: 1,2-Dichloroethane-d4	90.3	70-130		%Rec	5	11/16/2021 7:47:25 AM	B82851
Surr: 4-Bromofluorobenzene	96.3	70-130		%Rec	5	11/16/2021 7:47:25 AM	B82851
Surr: Dibromofluoromethane	91.8	70-130		%Rec	5	11/16/2021 7:47:25 AM	B82851
Surr: Toluene-d8	98.5	70-130		%Rec	5	11/16/2021 7:47:25 AM	B82851

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	Value above quantitation range
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 range due to dilution or matrix interference		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2111374**

24-Nov-21

Client: Hilcorp Energy

Project: Flora Vista 1

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A82693**	RunNo: **82693**
Prep Date:	Analysis Date: **11/9/2021**	SeqNo: **2935771** 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**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A82693**	RunNo: **82693**
Prep Date:	Analysis Date: **11/9/2021**	SeqNo: **2935773** 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	ND	0.0020	0.002000	0	95.6	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA Method 200.7: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A82693**	RunNo: **82693**
Prep Date:	Analysis Date: **11/9/2021**	SeqNo: **2935775** 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	0.48	0.0020	0.5000	0	96.8	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2111374**
24-Nov-21

Client: Hilcorp Energy
Project: Flora Vista 1

Sample ID: **100ng lcs2** SampType: **LCS** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW** Batch ID: **B82851** RunNo: **82851**
Prep Date: Analysis Date: **11/16/2021** SeqNo: **2941417** 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	19	1.0	20.00	0	96.1	70	130			
Chlorobenzene	19	1.0	20.00	0	92.8	70	130			
1,1-Dichloroethene	21	1.0	20.00	0	106	70	130			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	11		10.00		112	70	130			
Surr: 4-Bromofluorobenzene	9.5		10.00		94.8	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	9.8		10.00		97.5	70	130			

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **B82851** RunNo: **82851**
Prep Date: Analysis Date: **11/16/2021** SeqNo: **2941457** 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								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2111374**
24-Nov-21

Client: Hilcorp Energy
Project: Flora Vista 1

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **B82851** RunNo: **82851**
Prep Date: Analysis Date: **11/16/2021** SeqNo: **2941457** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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 range due to dilution or matrix interference		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2111374**
24-Nov-21

Client: Hilcorp Energy
Project: Flora Vista 1

Sample ID: **mb2** SampType: **MBLK** TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW** Batch ID: **B82851** RunNo: **82851**
Prep Date: Analysis Date: **11/16/2021** SeqNo: **2941457** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	11		10.00		113	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		95.7	70	130			
Surr: Dibromofluoromethane	11		10.00		110	70	130			
Surr: Toluene-d8	10		10.00		102	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 range due to dilution or matrix interference
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: Hilcorp Energy | Work Order Number: 2111374 | RcptNo: 1

Received By: Isaiah Ortiz 11/6/2021 8:40:00 AM I-Ox

Completed By: Isaiah Ortiz 11/6/2021 9:56:24 AM I-Ox

Reviewed By: DAD 11/8/21

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 ☐
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 ☐	

JR 11/8/21 JR 11/8/21

# of preserved bottles checked for pH: 5 (<2 or >12 unless noted)

Adjusted? yes

Checked by: JR 11/8/21

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 from unpreserved 500ml plastic bottles for all samples. 0.4ml of HNO3 was added to samples 001B-005B for pH<2. Used 8 filters from Lot FJ0298. JR 11/8/21.

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Not Present			

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#: khoekstra@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: Flora Vista 1

Project #:

Project Manager:

Sampler: Kurt Hoekstra

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.0°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. 2111374	Dissolved Mn and Fe 500ml HDPE*	BTEX 8260 40ml VOA HCl	No Samples Filtered
11-5	10:20	Water	MW-1	Various	Various	001	X	X	
11-5	2:00	Water	MW-2	Various	Various	002	X	X	
11-5	12:00	Water	MW-3	Various	Various	003	X	X	
11-4	1:20	Water	MW-4	Various	Various	004	X	X	
11-5	12:50	Water	MW-5	Various	Various	005	X	X	

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
11-5	1443	Kurt Hoekstra	[illegible]		11/5/21	1443
11/5/21	1743	[illegible]	[illegible]		11/6/21	0840

Remarks: *Dissolved Mn and Fe are to be filtered and preserved in the lab.

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

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 87497
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2021 Annual Groundwater Monitoring Report for Flora Vista #1: Content Satisfactory 1. Reduce sampling frequency to semi-annual in MWs: MW-1 through MW-5 for BTEX, dissolved iron, and dissolved manganese. 2. Increase sampling frequency to eight (8) consecutive quarterly monitoring events when COCs have been reduced to below the allowable concentrations in the NM WQCC 3. Sampling wells DW-1 and DW-2 may be suspended at this time; however, a variance may need to be requested since the eight (8) consecutive quarterly sample events has not been able to be achieved. 4. Continue groundwater monitoring events as prescribed, and submit the 2022 and 2023 reports if they have not already been submitted through the online portal.	5/14/2024