



March 11, 2021

Mr. Cory Smith
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, NM 87410

Review of 2020 Annual Groundwater Report: Content satisfactory

1. Continue quarterly sampling for groundwater quality in 2021
2. Continue quarterly sampling for monitoring wells MW-1 – MW-6 to monitor dissolved iron and dissolved manganese constituents
3. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022

RE: 2020 Annual Groundwater Report
Hilcorp Energy Company
Farmington B Com 1E – 3RP-084
Incident # - nAUTOfAB000168
San Juan County, New Mexico

Dear Mr. Smith:

Hilcorp Energy Company (Hilcorp) presents the following annual report discussing ground water monitoring activities conducted at the Farmington B Com 1E natural gas production well (Site) during 2020. Ground water was impacted by an unlined pit. Hilcorp acquired environmental responsibility from ConocoPhillips in April 2017. The Site consists of a natural gas well and associated equipment and is currently owned by Merrion Oil & Gas Company. The Site is located on private property near the corner of East Murray Drive and South Carlton Avenue in southeast Farmington, NM. Geographical coordinates for the Site are 36.721137 degrees North and 108.190501 degrees West. Currently, there are six monitoring wells on site which are monitored quarterly. This report represents the results for 2020 monitoring events. The location and general features of the Site are presented as Figures 1 and 2, respectively. A generalized geological cross section of the Site is included as Figure 3. A full history of this site can be found in the annual reports previously submitted.

Methodology

Quarterly groundwater monitoring was conducted by Hilcorp on January 29, April 21, July 16, and October 1, 2020. Groundwater elevation measurements were recorded for MW-1 through MW-6 using an oil/water interface probe and are presented in Table 1. Groundwater flows to the west southwest, consistent with historical monitoring data for this Site. An irrigation canal is located immediately south of the Site, comprising a portion of its southern boundary. The Animas River is approximately $\frac{3}{4}$ miles northwest of the Site and flows West. Flow in both of these surface water features likely affects seasonal groundwater elevations and flow direction is measured in Site monitoring wells. Groundwater potentiometric surface maps generated for each quarterly monitoring event are presented as Figures 4 through 7.

MW-1 – MW-6 were sampled during all four quarters in 2020 for dissolved iron, dissolved manganese and for sulfate. There was a mix up with the lab and the sample collected in June (Q3) expired so no laboratory analytical results are available. An email from the lab is included as Attached B below.

Prior to sample collection, wells were purged of up to three well volumes with a dedicated polyethylene 1.5 inch disposable bailer. During purging, field parameters including pH, conductivity, dissolved oxygen, temperature and oxidation reduction potential were measured periodically and are summarized in Table 2. Collected groundwater samples were placed in laboratory prepared bottles, packed on ice, and shipped under chain of custody documentation to Pace Analytical Services, Inc. The samples were analyzed for the presence of dissolved iron and manganese according to EPA method 6010 and for sulfates via EPA Method 300.



Results

During 2020, dissolved manganese concentrations in MW-1 exceeded the NMWQCC standard for first, second and fourth quarters with a concentration range of 1.14 – 2.91 mg/L and in MW-6 for first and second quarter with a concentration range of 0.524-0.556 mg/L. The 2020 groundwater analytical results are summarized on the 2020 Groundwater Concentrations Map (Figure 8) and presented with historical data on Table 3. The complete laboratory analytical reports are included as Attachment A.

Conclusions/Recommendations

Based on 2020 quarterly monitoring results, groundwater elevations increased on average 1.32 feet in October 2020 as compared to the same quarterly periods in 2019. The remaining quarterly 2020 events were conducted during different months than 2019 and therefore further comparisons cannot be made. Groundwater flow direction was consistent with historical data. Concentrations of dissolved manganese in groundwater increased in MW-1 and MW-6 for 2020 compared to 2019. Concentrations of dissolved iron were detected in groundwater of MW-1 during 2020 but were below NMWQCC standards, continuing a trend which began during the last quarter of 2018. Dissolved iron concentrations in MW-6 remained undetected during 2019 as has been the pattern for the last 10 consecutive quarters.

Continued quarterly sampling is recommended, as purging the monitoring well enhances oxygen content and natural attenuation. Hilcorp proposes continuing quarterly sampling for monitoring well MW-1 – MW-6 to monitor dissolved iron and dissolved manganese constituents for compliance with NMWQCC standards for eight consecutive quarters. At that time, final closure will be requested.

If you have any questions or comments regarding this work plan, do not hesitate to contact me by phone (505) 324-5128 or by email Jdeal@hilcorp.com.

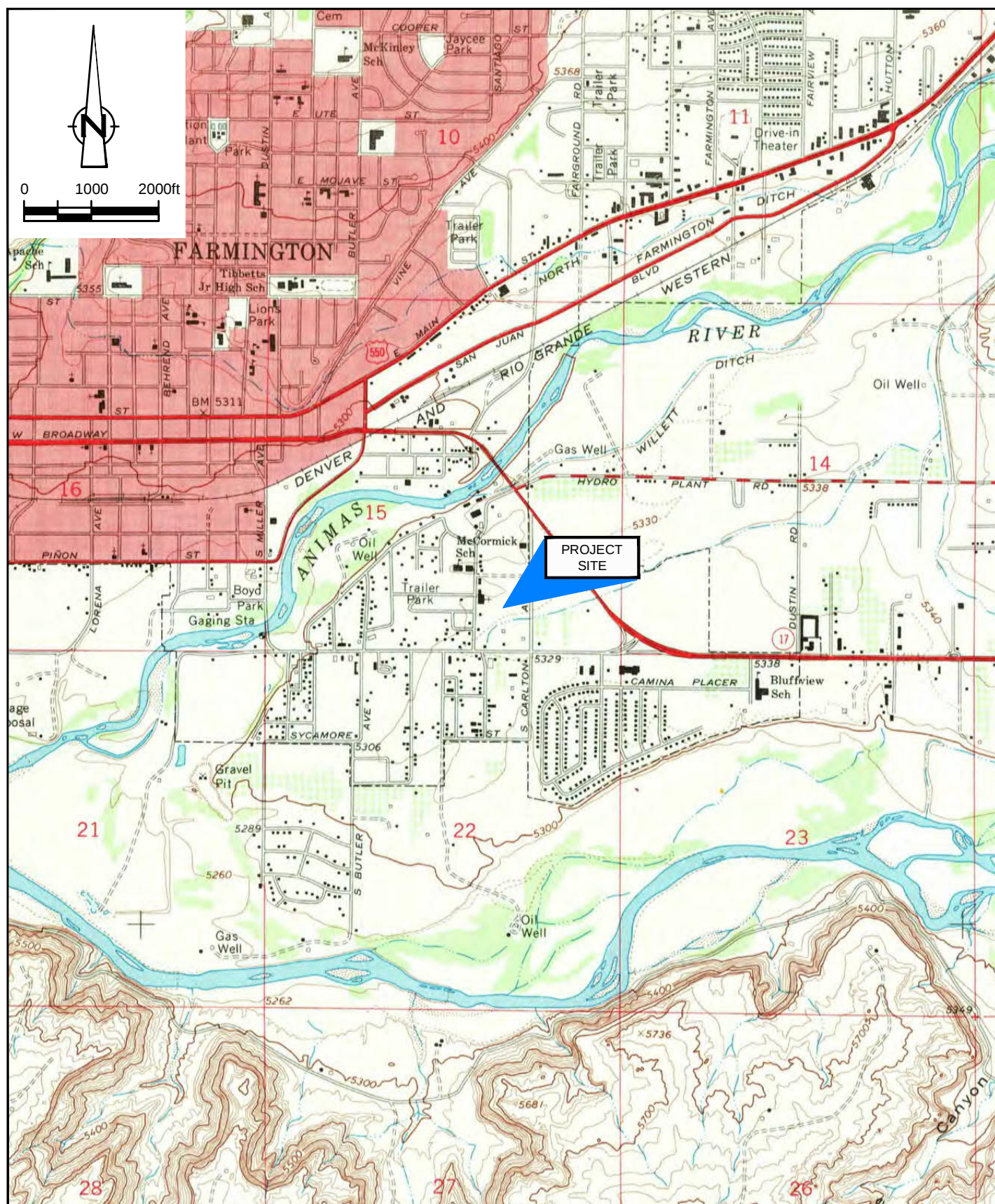
Sincerely,

A handwritten signature in black ink that reads 'Jennifer Deal'.

Jennifer Deal
Environmental Specialist
Hilcorp Energy Company – L48 West
jdeal@hilcorp.com
505-324-5128 – Office
505-801-6517 – Cell

Attachments:

- Tables 1-3
- Figures 1-8
- Attachment A – Laboratory Analytical Reports
- Attachment B – Email from Laboratory



Source: USGS 7.5 Minute Quad "Farmington, New Mexico"

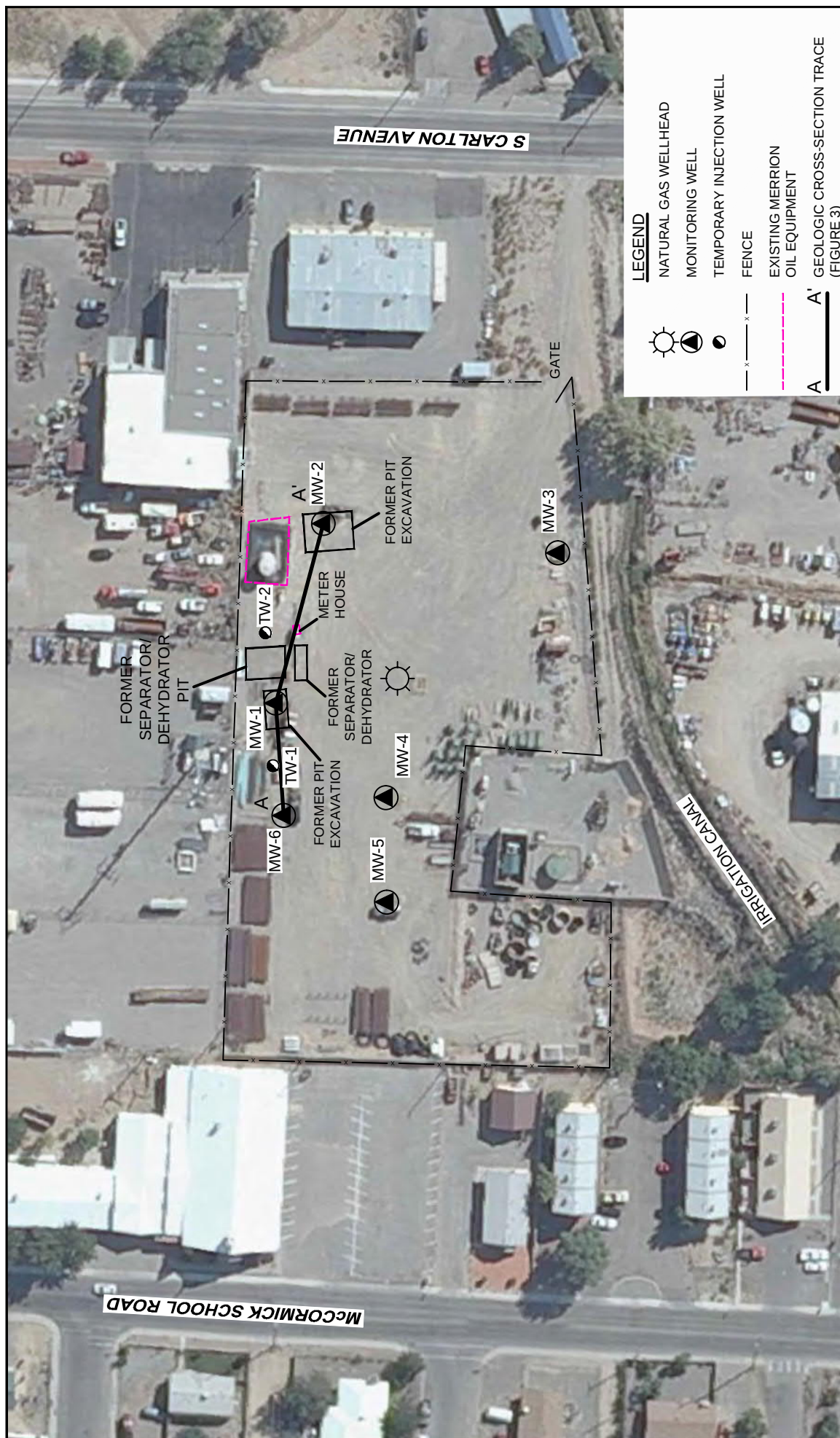
HILCORP ENERGY COMPANY
 FARMINGTON, NEW MEXICO
 FARMINGTON B-COM No. 1E

11207521-00

Jan 21, 2019

SITE LOCATION MAP

FIGURE 1



ConocoPhillips High Resolution Aerial Imagery

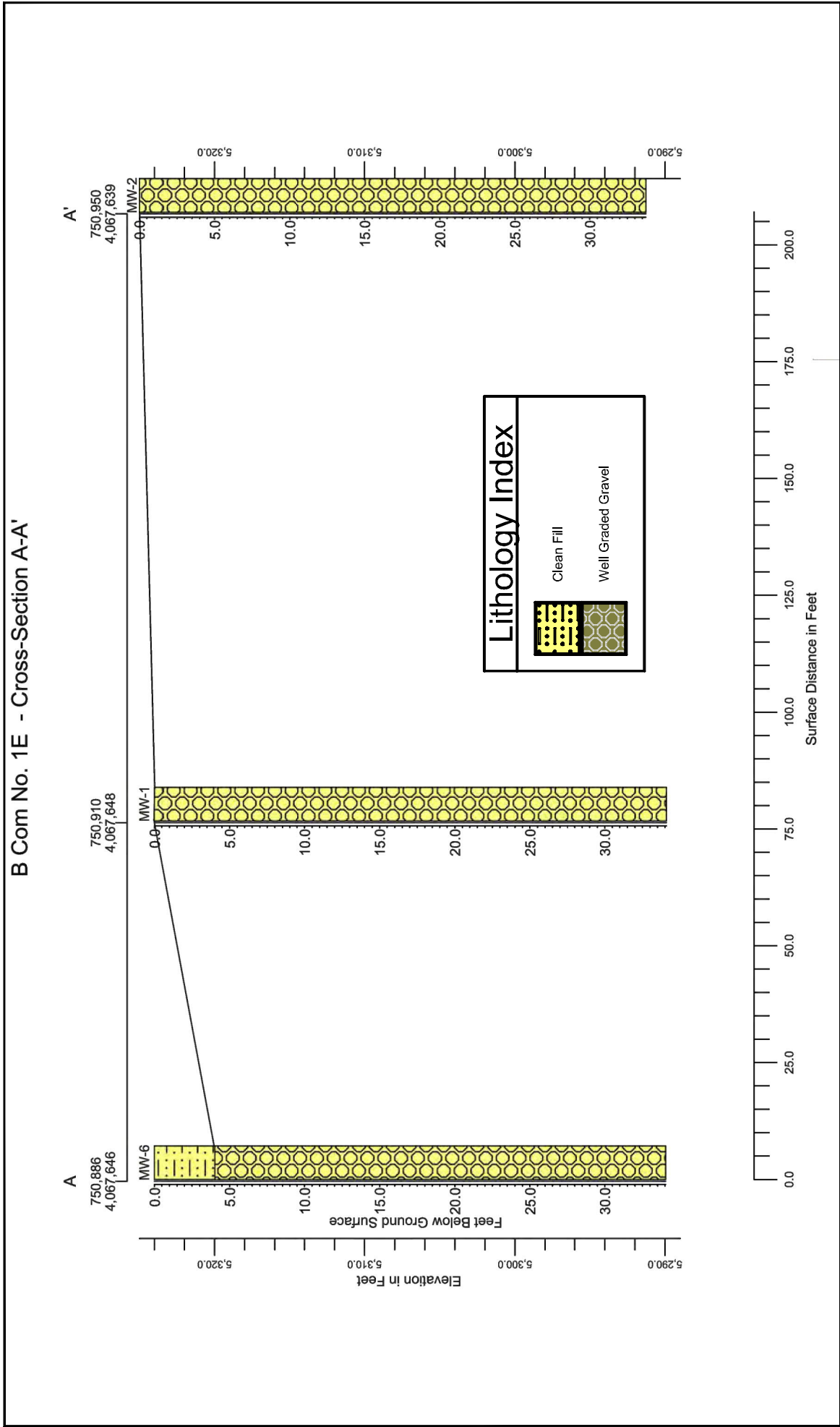
11207521-00
Jan 21, 2019

HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E



SITE PLAN

FIGURE 2

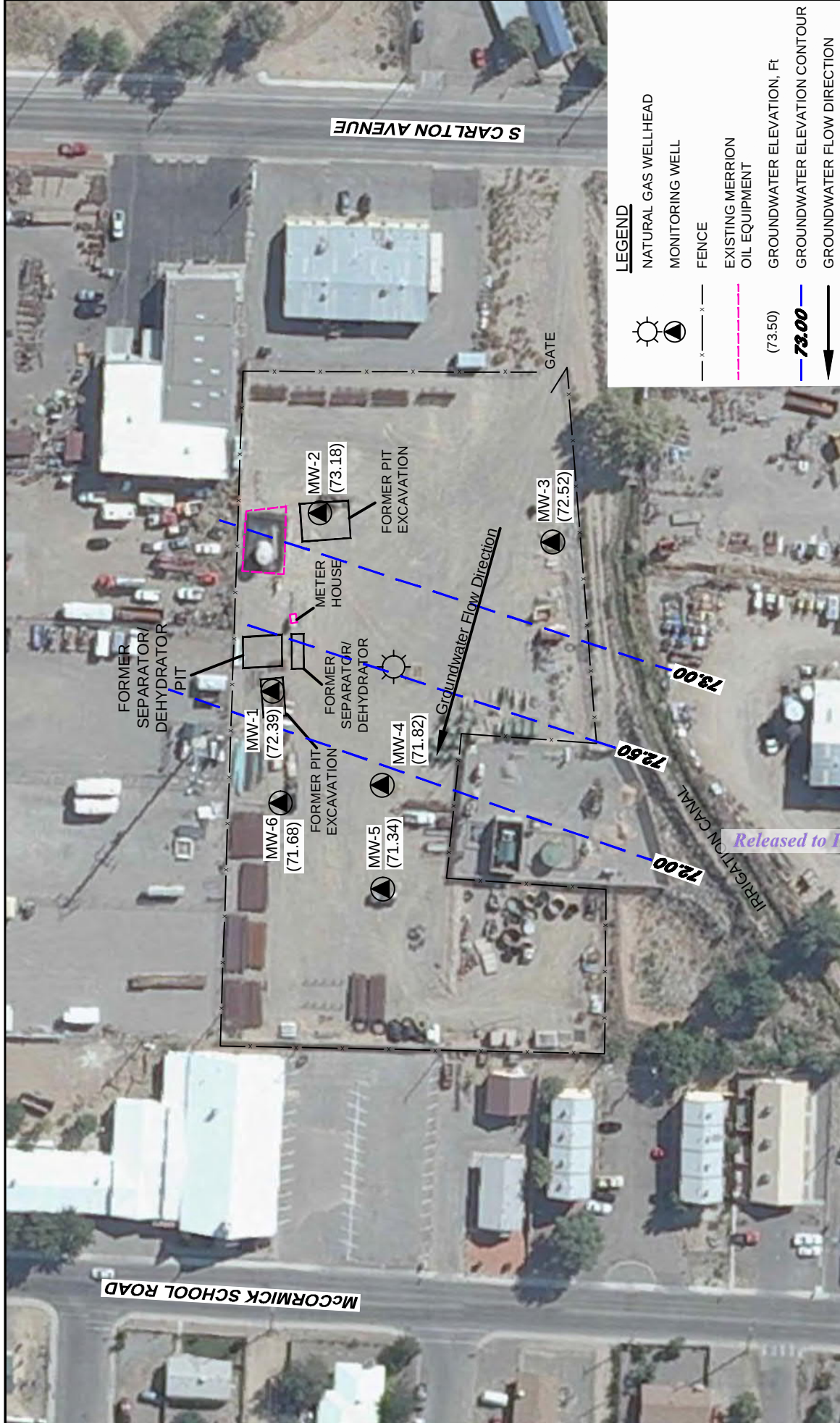


HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E

11207521-00
Jan 21, 2019

GENERALIZED GEOLOGIC CROSS SECTION

FIGURE 3



ConocoPhillips High Resolution Aerial Imagery

11207521-00
Feb 23, 2021

HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E
JANUARY 2020
GROUNDWATER POTENTIOMETRIC SURFACE MAP

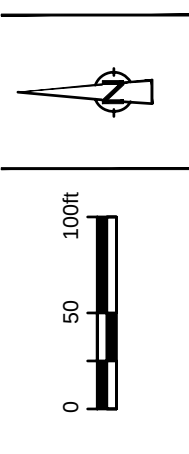


FIGURE 4



ConocoPhillips High Resolution Aerial Imagery

11207521-00
Feb 23, 2021

HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E
APRIL 2020

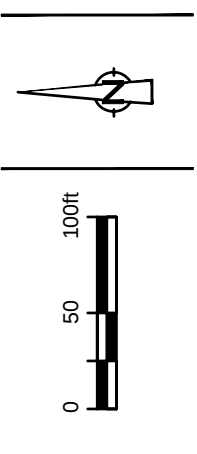
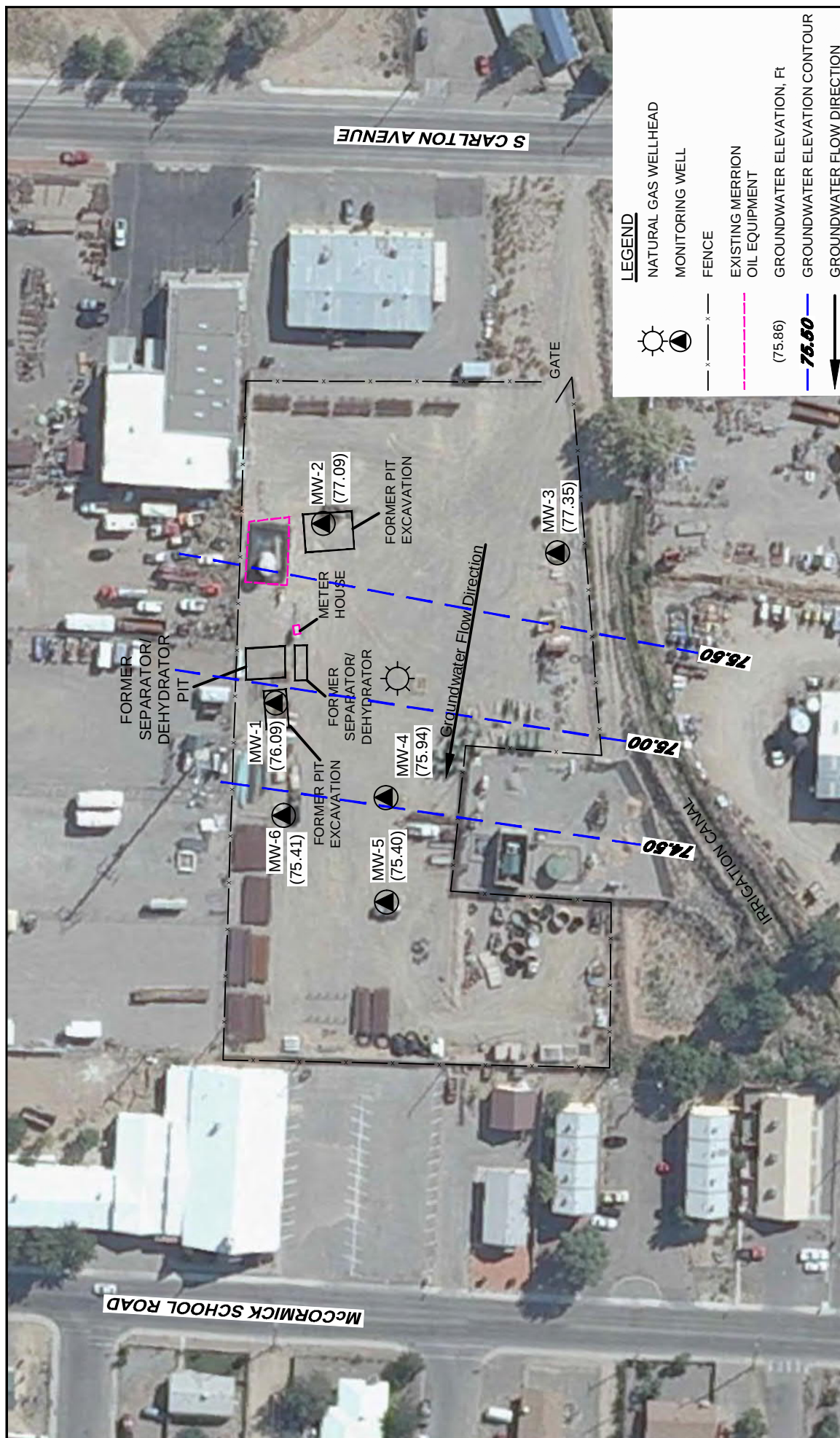


FIGURE 5

GROUNDWATER POTENTIOMETRIC SURFACE MAP



ConocoPhillips High Resolution Aerial Imagery

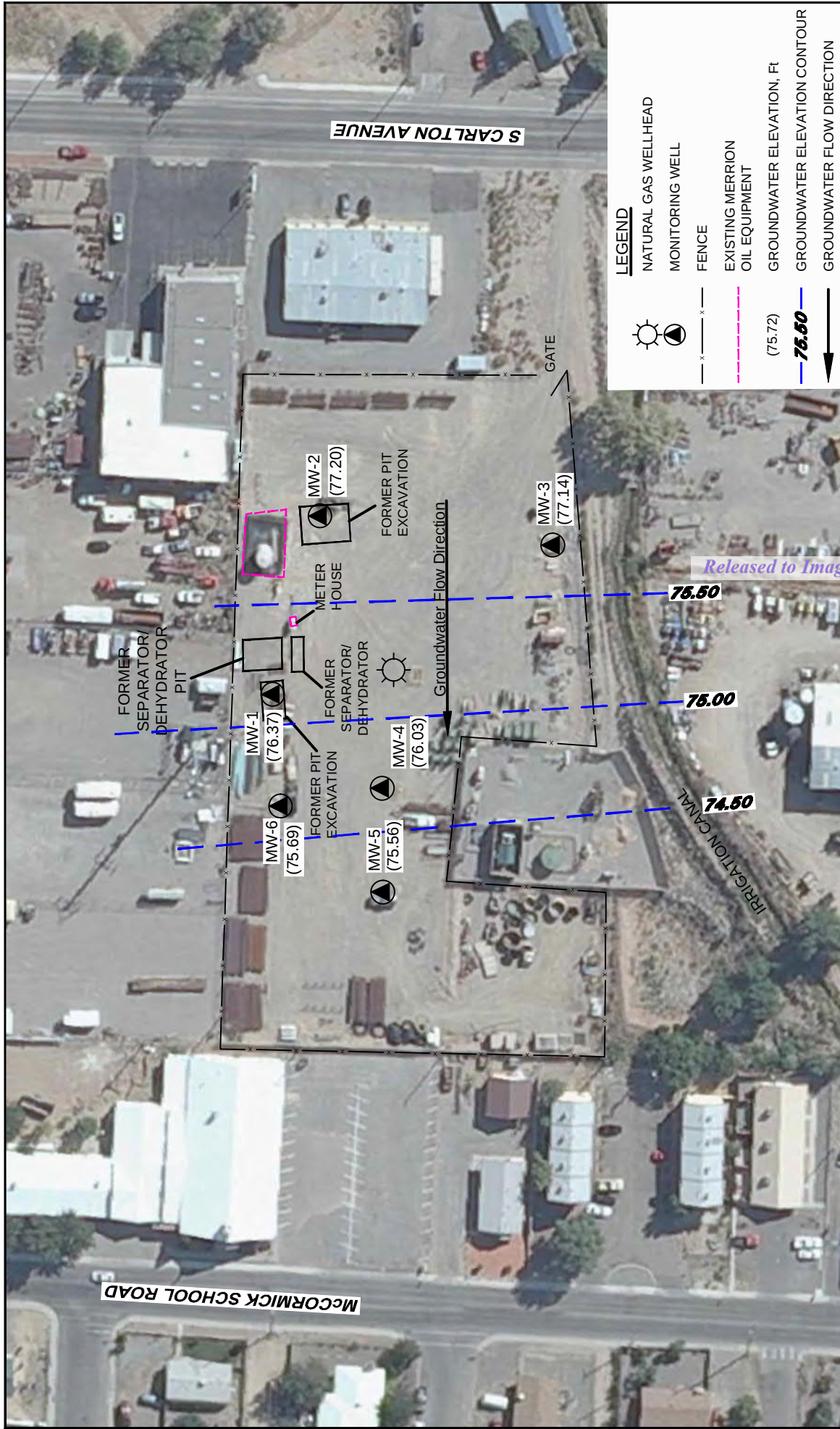
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Feb 23, 2021

HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E
JULY 2020



GROUNDWATER POTENTIOMETRIC SURFACE MAP

FIGURE 6



ConocoPhillips High Resolution Aerial Imagery

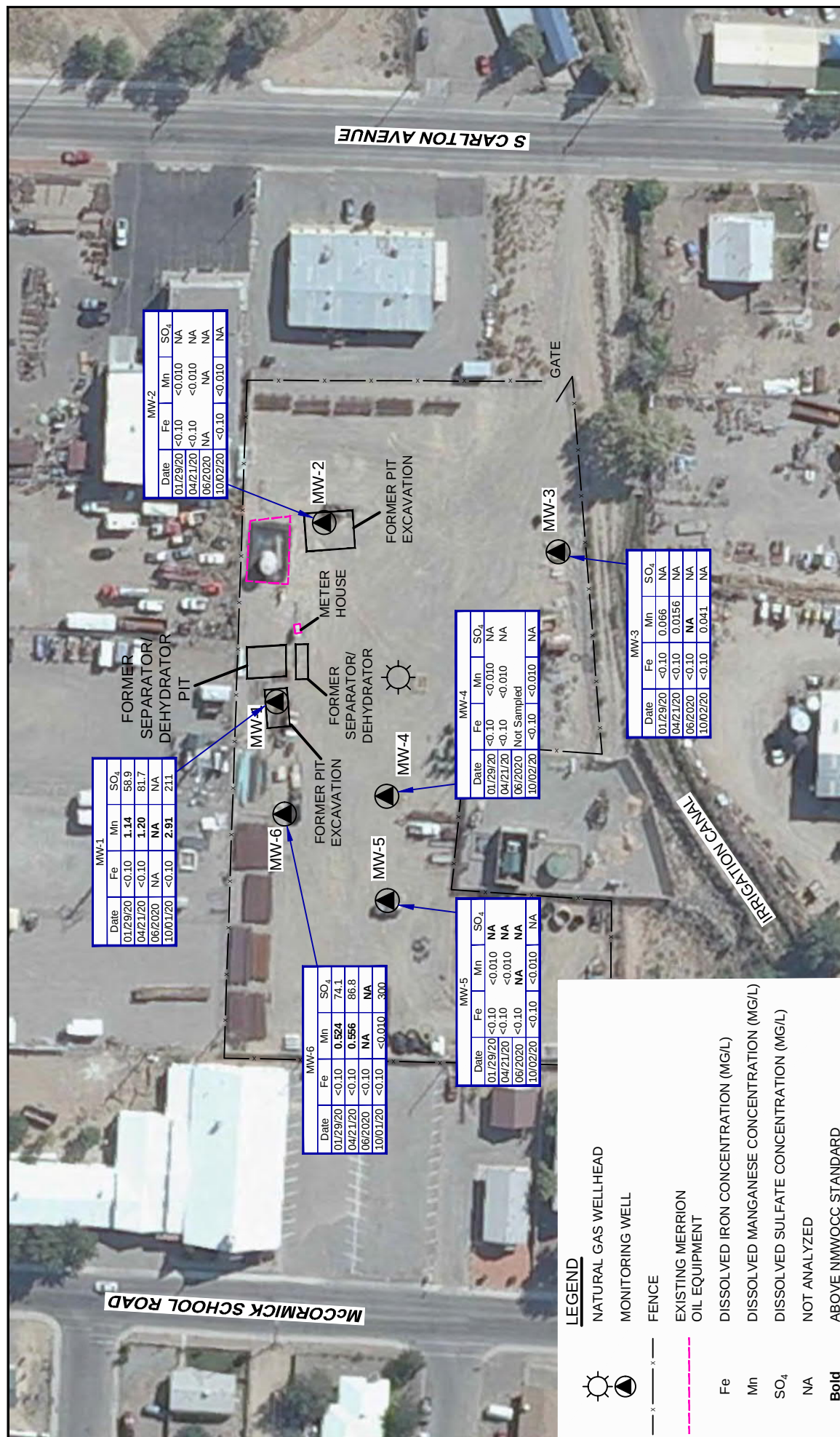


HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E
OCTOBER 2020
GROUNDWATER POTENTIAL METRIC SURFACE MAP

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Feb 23, 2021

FIGURE 7

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Feb 23, 2021

HILCORP ENERGY COMPANY
FARMINGTON, NEW MEXICO
FARMINGTON B-COM No. 1E

2020 GROUNDWATER CONCENTRATIONS MAP

FIGURE 8

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-1	34.09	101.37	19.09 - 34.09	5/9/2005	Sheen	28.30	--	73.07
				7/6/2005	--	26.50	--	74.87
				10/19/2005	Sheen	25.12	--	76.25
				2/16/2006	--	28.23	--	73.14
				5/15/2006	--	27.02	--	74.35
				8/2/2006	--	24.37	--	77.00
				11/14/2006	Sheen	26.48	--	74.89
				2/20/2007	Sheen	29.03	--	72.34
				5/15/2007	--	26.97	--	74.40
				8/21/2007	Sheen	25.20	--	76.17
				11/7/2007	26.10	26.30	0.20	75.23
				1/16/2008	27.88	29.24	1.36	73.22
				3/18/2008	Sheen	29.27	--	72.10
				7/24/2008	Sheen	25.73	--	75.64
				10/22/2008	Sheen	25.35	--	76.02
				1/21/2009	27.90	28.25	0.35	73.40
				4/1/2009	--	29.47	--	71.90
				6/10/2009	--	26.75	--	74.62
				10/1/2009	--	23.14	--	78.23
				12/17/2009	--	26.31	--	75.06
				3/29/2010	28.68	28.71	0.03	72.68
				6/11/2010	Sheen	25.98	--	75.39
				9/24/2010	Sheen	25.26	--	76.11
				2/7/2011	Sheen	28.83	--	72.54
				3/18/2011	29.71	29.73	0.02	71.66
				6/20/2011	Sheen	27.00	--	74.37
				9/30/2011	Sheen	24.32	--	77.05
				12/15/2011	Sheen	26.90	--	74.47
				9/21/2012	Sheen	24.52	--	76.85
				4/4/2013	Sheen	29.74	--	71.63
				9/30/2013	Sheen	24.92	--	76.45
				9/26/2014	Sheen	25.92	--	75.45
				12/18/2014	--	27.81	--	73.56
				1/28/2015	Sheen	28.87	--	72.50
				6/18/2015	--	27.33	--	74.04
				9/23/2015	--	26.52	--	74.85
				12/3/2015	--	27.85	--	73.52
				3/28/2016	--	30.13	--	71.24
				6/22/2016	--	29.53	--	71.84
				9/6/2016	--	26.71	--	74.66
				11/28/2016	--	27.85	--	73.52
				3/6/2017	--	30.16	--	71.21
				6/12/2017	--	28.00	--	73.37
				10/27/2017	--	26.49	--	74.88
				12/6/2017	--	27.41	--	73.96
				3/13/2018	--	30.13	--	71.24
				6/28/2018	--	26.35	--	75.02
				9/6/2018	--	25.60	--	75.77
				12/19/2018	--	26.85	--	74.52
				3/5/2019	--	28.93	--	72.44
				5/21/2019	--	27.94	--	73.43
				8/26/2019	--	26.58	--	74.79
				10/30/2019	--	26.42	--	74.95
				1/29/2020	--	28.98	--	72.39
				4/21/2020	--	29.19	--	72.18
				7/16/2020	--	25.28	--	76.09
				10/1/2020	--	25	--	76.37

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-2	33.72	101.57	18.72 - 33.72	5/9/2005	--	27.28	--	74.29
				7/6/2005	--	25.52	--	76.05
				10/19/2005	--	24.30	--	77.27
				2/16/2006	--	27.38	--	74.19
				5/15/2006	--	25.62	--	75.95
				8/2/2006	--	23.51	--	78.06
				11/14/2006	--	26.08	--	75.49
				2/20/2007	--	28.13	--	73.44
				5/15/2007	--	25.86	--	75.71
				8/21/2007	--	24.45	--	77.12
				11/7/2007	--	25.31	--	76.26
				1/16/2008	--	27.27	--	74.30
				3/18/2008	--	28.68	--	72.89
				7/24/2008	--	24.77	--	76.80
				10/22/2008	--	24.55	--	77.02
				1/21/2009	--	27.23	--	74.34
				4/1/2009	--	28.76	--	72.81
				6/10/2009	--	25.76	--	75.81
				10/1/2009	--	22.22	--	79.35
				12/17/2009	--	25.62	--	75.95
				3/29/2010	--	27.96	--	73.61
				6/11/2010	--	24.99	--	76.58
				9/24/2010	--	24.54	--	77.03
				2/7/2011	--	28.22	--	73.35
				3/18/2011	--	29.14	--	72.43
				6/20/2011	--	26.20	--	75.37
				9/30/2011	--	23.51	--	78.06
				12/15/2011	--	26.22	--	75.35
				9/21/2012	--	23.81	--	77.76
				4/4/2013	--	29.16	--	72.41
				9/30/2013	--	24.29	--	77.28
				9/26/2014	--	25.18	--	76.39
				12/18/2014	--	27.18	--	74.39
				1/28/2015	--	NM	--	--
				6/18/2015	--	27.73	--	73.84
				9/23/2015	--	25.74	--	75.83
				12/3/2015	--	27.23	--	74.34
				3/28/2016	--	29.67	--	71.90
				6/22/2016	--	27.20	--	74.37
				9/6/2016	--	25.96	--	75.61
				11/28/2016	--	27.20	--	74.37
				3/6/2017	--	29.45	--	72.12
				6/12/2017	--	27.11	--	74.46
				10/27/2017	--	25.81	--	75.76
				12/6/2017	--	26.79	--	74.78
				3/13/2018	--	29.53	--	72.04
				6/28/2018	--	25.45	--	76.12
				9/6/2018	--	24.79	--	76.78
				12/19/2018	--	26.21	--	75.36
				3/5/2019	--	28.35	--	73.22
				5/24/2019	--	27.07	--	74.50
				8/26/2019	--	25.79	--	75.78
				10/30/2019	--	25.70	--	75.87
				1/29/2020	--	28.39	--	73.18
				4/22/2020	--	27.89	--	73.68
				7/17/2020	--	24.48	--	77.09
				10/2/2020	--	24.37	--	77.20

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-3	32.44	102.1	17.44 - 32.44	5/9/2005	--	27.81	--	74.29
				7/6/2005	--	26.03	--	76.07
				10/19/2005	--	25.06	--	77.04
				2/16/2006	--	28.57	--	73.53
				5/15/2006	--	26.15	--	75.95
				8/2/2006	--	23.83	--	78.27
				11/14/2006	--	26.75	--	75.35
				2/20/2007	--	29.31	--	72.79
				5/15/2007	--	26.23	--	75.87
				8/21/2007	--	25.00	--	77.10
				11/7/2007	--	26.12	--	75.98
				1/16/2008	--	28.46	--	73.64
				3/18/2008	--	29.97	--	72.13
				7/24/2008	--	25.27	--	76.83
				10/22/2008	--	25.35	--	76.75
				1/21/2009	--	28.56	--	73.54
				4/1/2009	--	30.20	--	71.90
				6/10/2009	--	26.55	--	75.55
				10/1/2009	--	23.00	--	79.10
				12/17/2009	--	26.86	--	75.24
				3/29/2010	--	29.41	--	72.69
				6/11/2010	--	25.62	--	76.48
				9/24/2010	--	25.23	--	76.87
				2/7/2011	--	29.47	--	72.63
				3/18/2011	--	30.40	--	71.70
				6/20/2011	--	26.83	--	75.27
				9/30/2011	--	23.95	--	78.15
				12/15/2011	--	27.41	--	74.69
				9/21/2012	--	24.55	--	77.55
				4/4/2013	--	30.52	--	71.58
				9/30/2013	--	25.27	--	76.83
				9/26/2014	--	25.91	--	76.19
				12/18/2014	--	28.30	--	73.80
				1/28/2015	--	NM	--	--
				6/18/2015	--	27.53	--	74.57
				9/23/2015	--	26.33	--	75.77
				12/3/2015	--	28.33	--	73.77
				3/28/2016	--	30.99	--	71.11
				6/22/2016	--	27.88	--	74.22
				9/6/2016	--	26.66	--	75.44
				11/28/2016	--	28.32	--	73.78
				3/6/2017	--	30.78	--	71.32
				6/12/2017	--	27.71	--	74.39
				10/27/2017	--	26.66	--	75.44
				12/6/2017	--	27.89	--	74.21
				3/13/2018	--	30.79	--	71.31
				6/28/2018	--	25.68	--	76.42
				9/6/2018	--	25.55	--	76.55
				12/19/2018	--	27.36	--	74.74
				3/5/2019	--	28.60	--	73.50
				5/21/2019	--	27.75	--	74.35
				8/26/2019	--	26.24	--	75.86
				10/30/2019	--	26.38	--	75.72
				1/29/2020	--	29.58	--	72.52
				4/22/2020	--	27.96	--	74.14
				7/17/2020	--	24.75	--	77.35
				10/2/2020	--	24.96	--	77.14

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FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-4	32.72	101.4	17.72 - 32.72	5/9/2005	--	28.73	--	72.67
				7/6/2005	--	26.66	--	74.74
				10/19/2005	--	25.62	--	75.78
				2/16/2006	--	28.91	--	72.49
				5/15/2006	--	26.86	--	74.54
				8/2/2006	--	24.59	--	76.81
				11/14/2006	--	27.02	--	74.38
				2/20/2007	--	29.61	--	71.79
				5/15/2007	--	27.25	--	74.15
				8/21/2007	--	25.56	--	75.84
				11/7/2007	--	26.50	--	74.90
				1/16/2008	--	28.55	--	72.85
				3/18/2008	--	29.99	--	71.41
				7/24/2008	--	26.02	--	75.38
				10/22/2008	--	25.84	--	75.56
				1/21/2009	--	28.69	--	72.71
				4/1/2009	--	30.22	--	71.18
				6/10/2009	--	27.31	--	74.09
				10/1/2009	--	23.80	--	77.60
				12/17/2009	--	27.07	--	74.33
				3/29/2010	--	29.51	--	71.89
				6/11/2010	--	26.43	--	74.97
				9/24/2010	--	25.70	--	75.70
				2/7/2011	--	29.49	--	71.91
				3/18/2011	--	30.38	--	71.02
				6/20/2011	--	27.34	--	74.06
				9/30/2011	--	24.68	--	76.72
				12/15/2011	--	27.58	--	73.82
				9/21/2012	--	25.01	--	76.39
				4/4/2013	--	30.46	--	70.94
				9/30/2013	--	25.55	--	75.85
				9/26/2014	--	26.27	--	75.13
				12/18/2014	--	28.38	--	73.02
				1/28/2015	--	NM	--	--
				6/18/2015	--	26.60	--	74.80
				9/23/2015	--	26.77	--	74.63
				12/3/2015	--	28.41	--	72.99
				3/28/2016	--	30.82	--	70.58
				6/22/2016	--	28.38	--	73.02
				9/6/2016	--	27.03	--	74.37
				11/28/2016	--	28.43	--	72.97
				3/6/2017	--	30.75	--	70.65
				6/12/2017	--	28.36	--	73.04
				10/27/2017	--	26.88	--	74.52
				12/6/2017	--	27.95	--	73.45
				3/13/2018	--	30.78	--	70.62
				6/28/2018	--	26.46	--	74.94
				9/6/2018	--	26.03	--	75.37
				12/19/2018	--	27.51	--	73.89
				3/5/2019	--	29.59	--	71.81
				5/24/2019	--	28.35	--	73.05
				8/26/2019	--	26.81	--	74.59
				10/29/2019	--	26.55	--	74.85
				1/28/2020	--	29.58	--	71.82
				4/21/2020	--	29.53	--	71.87
				7/16/2020	--	25.46	--	75.94
				10/1/2020	--	25.37	--	76.03

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-5	34.09	100.52	19.09 - 34.09	5/9/2005	--	28.50	--	72.02
				7/6/2005	--	26.32	--	74.20
				10/19/2005	--	25.30	--	75.22
				2/16/2006	--	28.62	--	71.90
				5/15/2006	--	26.55	--	73.97
				8/2/2006	--	24.23	--	76.29
				11/14/2006	--	27.67	--	72.85
				2/20/2007	--	29.34	--	71.18
				5/15/2007	--	27.04	--	73.48
				8/21/2007	--	25.21	--	75.31
				11/7/2007	--	26.13	--	74.39
				1/16/2008	--	28.18	--	72.34
				3/18/2008	--	29.65	--	70.87
				7/24/2008	--	25.73	--	74.79
				10/22/2008	--	25.49	--	75.03
				1/21/2009	--	28.38	--	72.14
				4/1/2009	--	29.92	--	70.60
				6/10/2009	--	27.09	--	73.43
				10/1/2009	--	23.50	--	77.02
				12/17/2009	--	26.77	--	73.75
				3/29/2010	--	29.21	--	71.31
				6/11/2010	--	26.16	--	74.36
				9/24/2010	--	25.31	--	75.21
				2/7/2011	--	29.13	--	71.39
				3/18/2011	--	30.10	--	70.42
				6/20/2011	--	27.03	--	73.49
				9/30/2011	--	24.35	--	76.17
				12/15/2011	--	27.25	--	73.27
				9/21/2012	--	24.65	--	75.87
				4/4/2013	--	30.10	--	70.42
				9/30/2013	--	25.16	--	75.36
				9/26/2014	--	25.88	--	74.64
				12/18/2014	--	27.98	--	72.54
				1/28/2015	--	NM	--	--
				6/18/2015	--	NM	--	--
				9/23/2015	--	26.41	--	74.11
				12/3/2015	--	28.00	--	72.52
				3/28/2016	--	30.41	--	70.11
				6/22/2016	--	28.03	--	72.49
				9/6/2016	--	22.66	--	77.86
				11/28/2016	--	28.03	--	72.49
				3/6/2017	--	30.39	--	70.13
				6/12/2017	--	28.06	--	72.46
				10/27/2017	--	26.50	--	74.02
				12/6/2017	--	27.58	--	72.94
				3/13/2018	--	30.40	--	70.12
				6/28/2018	--	26.13	--	74.39
				9/6/2018	--	25.68	--	74.84
				12/19/2018	--	27.15	--	73.37
				3/5/2019	--	29.2	--	71.32
				5/24/2019	--	28.04	--	72.48
				8/26/2019	--	26.47	--	74.05
				10/29/2019	--	26.27	--	74.25
				1/28/2020	--	29.18	--	71.34
				4/21/2020	--	29.36	--	71.16
				7/16/2020	--	25.12	--	75.40
				10/1/2020	--	24.96	--	75.56

TABLE 1
WELL CONSTRUCTION INFORMATION AND GROUNDWATER ELEVATIONS

FARMINGTON B COM #1E
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 PSH (ft BTOC)	Depth to Groundwater (ft BTOC)	PSH Thickness (ft)	Adjusted Groundwater Elevation (2)
MW-6	34.02	102.14	19.02 - 34.02	5/9/2005	--	29.94	--	72.20
				7/6/2005	--	27.89	--	74.25
				10/19/2005	--	26.70	--	75.44
				2/16/2006	--	29.85	--	72.29
				5/15/2006	--	28.11	--	74.03
				8/2/2006	--	25.83	--	76.31
				11/14/2006	--	27.91	--	74.23
				2/20/2007	--	30.52	--	71.62
				5/15/2007	--	28.61	--	73.53
				8/21/2007	--	26.67	--	75.47
				11/7/2007	--	27.52	--	74.62
				1/16/2008	--	29.43	--	72.71
				3/18/2008	--	30.85	--	71.29
				7/24/2008	--	27.26	--	74.88
				10/22/2008	--	26.85	--	75.29
				1/21/2009	--	29.52	--	72.62
				4/1/2009	--	31.00	--	71.14
				6/10/2009	--	28.44	--	73.70
				10/1/2009	--	24.75	--	77.39
				12/17/2009	--	27.90	--	74.24
				3/29/2010	--	30.29	--	71.85
				6/11/2010	--	27.58	--	74.56
				9/24/2010	--	26.74	--	75.40
				2/7/2011	--	30.35	--	71.79
				3/18/2011	--	31.21	--	70.93
				6/20/2011	--	28.50	--	73.64
				9/30/2011	--	25.85	--	76.29
				12/15/2011	--	28.41	--	73.73
				9/21/2012	--	26.03	--	76.11
				4/4/2013	--	31.24	--	70.90
				9/30/2013	--	25.43	--	76.71
				9/26/2014	--	27.38	--	74.76
				12/18/2014	--	29.28	--	72.86
				1/28/2015	--	30.33	--	71.81
				6/18/2015	--	28.73	--	73.41
				9/23/2015	--	27.91	--	74.23
				12/3/2015	--	29.31	--	72.83
				3/28/2016	--	31.52	--	70.62
				6/22/2016	--	28.00	--	74.14
				9/6/2016	--	28.21	--	73.93
				11/28/2016	--	29.33	--	72.81
				3/6/2017	--	31.54	--	70.60
				6/12/2017	--	29.55	--	72.59
				10/27/2017	--	27.92	--	74.22
				12/6/2017	--	28.87	--	73.27
				3/13/2018	--	31.59	--	70.55
				6/28/2018	--	27.8	--	74.34
				9/6/2018	--	27.12	--	75.02
				12/19/2018	--	28.36	--	73.78
				3/5/2019	--	30.39	--	71.75
				5/21/2019	--	29.51	--	72.63
				8/26/2019	--	28.00	--	74.14
				10/29/2019	--	27.73	--	74.41
				1/29/2020	--	30.46	--	71.68
				4/21/2020	--	30.85	--	71.29
				7/16/2020	--	26.73	--	75.41
				10/1/2020	--	26.45	--	75.69

Notes:

- (1) - surface elevation based on an arbitrary datum of 100 feet
 (2) - when PSH is present, groundwater elevation is adjusted using a PSH density correction factor of 0.8
 AMSL = Above mean sea level
 bgs - below ground surface
 BTOC - below top of casing
 ft = feet
 NM = Not measured
 PSH - phase separated hydrocarbons

TABLE 2
FIELD PARAMETER RESULTS

FARMINGTON B COM #1E
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	9/26/2014	18.30	7.17	0.824	1,268	1.60	-198.0	3.50
	9/26/2014	18.23	7.17	0.810	1,245	0.98	-210.3	3.75
	9/26/2014	18.15	7.18	0.800	1,231	1.01	-221.4	4.00
	12/18/2014	18.93	12.95	10.310	15,860	25.02	-166.1	2.00
	12/18/2014	19.28	12.80	8.800	15,732	23.02	-161.7	2.50
	12/18/2014	19.35	12.76	10.270	15,765	24.24	-159.5	3.00
	1/28/2015	18.78	11.91	4.202	6,495	10.54	-36.4	1.75
	1/28/2015	18.78	12.01	3.378	5,192	10.11	-48.4	2.25
	1/28/2015	18.76	12.06	3.249	5,014	9.89	-57.4	2.75
	6/18/2015	17.81	9.44	13.390	21,782	1.34	42.0	3.25
	6/18/2015	17.37	9.52	14.140	21,793	1.27	46.5	3.50
	6/18/2015	17.00	9.59	14.610	22,480	1.41	51.7	3.75
	6/18/2015	16.88	9.62	14.640	22,830	1.51	61.5	4.00
	6/18/2015	16.87	9.64	14.640	22,516	2.07	63.3	4.25
	9/23/2015	17.97	7.90	3.224	4,960	1.41	-127.6	2.50
	9/23/2015	17.86	7.97	3.126	4,808	1.92	-122.7	3.00
	9/23/2015	17.82	8.10	3.013	4,033	1.61	-120.3	3.50
	12/3/2015	17.42	7.98	1.404	2,158	7.79	-144.8	1.25
	12/3/2015	18.03	7.93	1.344	2,068	3.55	-191.4	1.75
	12/3/2015	17.97	7.92	1.311	2,016	2.45	-200.0	2.25
	3/28/2016	18.35	7.35	0.800	1,190	3.77	-101.0	2.00
	6/22/2016	16.70	7.30	--	2,620	0.50	-176.1	2.25
	9/7/2016	17.54	6.65	2.083	3,205	1.10	-127.8	3.50
	3/6/2017	15.98	8.72	1.564	2,398	0.86	-247.1	2.00
	6/12/2017	15.98	7.76	3.880	5,967	1.27	-103.8	2.75
	10/27/2017	18.65	7.22	0.783	1,273	5.27	-125.9	3.75
	12/6/2017	17.04	6.92	2.783	1,202	1.21	55.6	3.25
	3/13/2018	17.41	7.25	--	1,109	-0.05	-125.4	1.80
	6/28/2018	17.65	7.03	--	1,593	1.07	-109.6	3.75
	9/6/2018	18.50	7.40	--	2,248	1.60	-116.7	4.00
	3/5/2019	16.90	7.46	--	1,090	--	-22.5	--
	5/21/2019	16.90	7.19	0.550	1,100	--	-19.8	2.75
	8/26/2019	21.70	7.13	0.640	1,270	--	-17.8	3.50
	10/30/2019	--	6.31	0.710	1,290	--	12.1	3.50
	1/29/2020	13.00	6.60	0.510	1,050	20.17	-14.3	--
	4/21/2020	17.50	6.33	0.580	1,160	1.66	7.1	--
	7/16/2020	22.20	6.23	1.120	2,230	0.76	7.8	--
	10/1/2020	22.00	6.39	0.740	1,450	1.70	7.3	4.33
MW-2	9/23/2015	18.01	7.11	0.782	1,204	2.86	0.9	3.50
	9/23/2015	18.05	7.06	0.790	1,217	2.79	-1.4	4.00
	9/23/2015	18.06	7.01	0.798	1,227	2.99	-2.8	4.50
	9/7/2016	17.45	6.95	0.703	1,081	3.89	5.7	4.00
	3/13/2018	17.86	7.23	--	1,046	2.50	48.5	1.80
	6/28/2018	17.19	7.02	--	1,142	3.47	45.1	4.50
	9/6/2018	23.70	7.30	--	1,199	2.63	-7.4	5.00
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	16.20	6.38	0.550	1,100	--	-28.5	4.25
	1/29/2020	14.90	6.55	0.590	1,180	13.50	-30.5	--
	4/22/2020	15.10	6.52	0.500	1,010	3.09	-18.1	--
	7/17/2020	18.80	6.52	0.650	1,320	2.87	-11.6	--
	10/2/2020	15.50	6.54	0.550	1,090	4.64	-20.4	4.91

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-3	9/23/2015	17.49	7.28	0.787	1,211	9.40	-45.2	3.25
	9/23/2015	17.29	7.11	0.769	1,182	4.40	-38.7	3.75
	9/7/2016	16.37	6.81	0.673	1,035	3.54	17.5	3.50
	11/28/2016	16.68	7.92	--	1,072	4.09	62.3	3.50
	3/6/2017	15.38	7.65	0.782	1,202	3.26	-117.1	1.50
	6/12/2017	14.88	7.33	0.612	943	4.51	-95.6	3.00
	10/27/2017	17.27	7.37	--	800	6.11	35.0	3.75
	12/6/2017	16.08	7.01	0.596	918	3.42	-56.9	3.00
	3/13/2018	16.97	7.21	--	1,034	0.06	35.9	1.50
	6/28/2018	18.39	7.53	--	676	3.88	47.0	4.25
	9/6/2018	18.17	8.14	--	583	2.84	6.6	4.25
	3/5/2019	NA	7.47	0.530	1,050	NA	-24.6	--
	5/21/2019	16.30	7.25	0.310	560	--	-28.1	3.00
	8/26/2019	21.50	7.46	0.500	1,000	--	-28.7	3.75
	10/30/2019	17.40	6.60	0.990	990	--	-45.1	3.75
	1/29/2020	13.00	6.78	0.500	1,000	15.04	-42.5	--
	4/22/2020	17.10	6.57	0.550	1,090	3.63	-23.3	--
	7/17/2020	18.60	6.85	0.300	600	2.97	-53.7	--
	10/2/2020	14.80	6.91	0.290	580	5.57	-44.0	4.44
MW-4	9/23/2015	17.73	7.52	0.411	632	10.50	-18.5	3.25
	9/23/2015	17.61	7.11	0.709	1,091	2.90	-48.1	3.50
	9/7/2016	16.75	6.80	0.693	1,066	3.59	14.9	2.50
	11/28/2016	16.93	7.32	--	1,003	3.11	113.1	2.00
	3/13/2018	17.12	7.24	--	985	2.19	52.4	0.68
	6/28/2018	19.87	7.07	--	1,098	3.62	61.6	3.00
	9/6/2018	18.26	7.49	--	1,007	2.94	44.0	4.00
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	15.90	6.44	0.630	1,250	--	-24.6	2.75
	1/28/2020	14.30	6.63	0.530	1,050	11.56	-25.7	--
	4/21/2020	18.30	6.28	0.540	1,080	4.51	-20.5	--
	7/16/2020	21.40	6.51	0.640	1,280	2.76	-19.9	--
	10/1/2020	17.90	6.61	0.510	1,020	4.82	-30.0	3.37
MW-5	9/23/2015	18.12	7.04	0.892	1,373	6.29	-109.5	2.75
	9/23/2015	18.06	7.03	0.888	1,366	6.41	-101.7	3.25
	9/23/2015	17.77	6.99	0.885	1,362	6.16	-103.8	3.75
	9/7/2016	16.82	6.90	0.931	1,433	6.49	41.1	4.50
	11/28/2016	17.58	7.37	--	1,141	6.64	104.1	2.00
	3/13/2018	16.60	7.23	--	1,033	1.80	51.1	0.81
	6/8/2018	16.38	7.12	--	1,097	6.17	70.5	3.00
	9/6/2018	17.90	7.28	--	1,023	7.28	51.6	3.25
	3/5/2019	--	--	--	--	--	--	--
	5/21/2019	--	--	--	--	--	--	--
	8/26/2019	--	--	--	--	--	--	--
	10/30/2019	14.70	6.78	0.880	1,460	--	-26.3	2.75
	1/28/2020	12.50	6.92	0.520	1,080	6.61	-28.6	--
	4/21/2020	16.20	6.20	0.530	1,070	4.80	-25.0	--
	7/16/2020	20.70	6.40	0.650	1,320	4.34	-23.3	--
	10/1/2020	16.60	6.64	0.500	1,060	5.89	-37.6	3.48

Table 2 - Farmington B Com 1E Field Parameters

Well ID	Sample Date	Temperature (°C)	pH	TDS (g/L)	Conductivity (uS/cm)	DO (mg/L)	ORP (mV)	Volume (gallons)
MW-6	9/26/2014	17.65	7.22	0.712	1,096	1.38	-39.5	2.75
	9/26/2014	17.65	7.21	0.712	1,096	1.39	-42.7	3.00
	9/26/2014	17.62	7.21	0.711	1,094	1.29	-45.9	3.25
	12/18/2014	18.09	7.83	0.933	1,436	2.61	-148.7	1.25
	12/18/2014	18.28	7.86	0.975	1,500	1.95	-158.7	1.75
	12/18/2014	18.31	7.87	0.985	1,515	1.99	-161.7	2.25
	1/28/2015	17.73	7.52	0.868	1,335	4.17	-122.1	1.50
	1/28/2015	17.70	7.52	0.862	1,326	3.08	-125.1	2.00
	1/28/2015	17.60	7.52	0.860	1,323	2.84	-125.3	2.50
	6/18/2015	17.33	8.27	1.232	1,895	5.75	-69.8	1.50
	6/18/2015	17.24	8.16	1.236	1,901	2.28	-49.0	2.00
	6/18/2015	17.09	8.18	1.194	1,836	1.81	-89.5	2.50
	9/23/2015	18.03	8.55	0.982	1,511	3.46	-78.2	2.00
	9/23/2015	18.08	8.25	1.014	1,560	2.56	-73.4	2.50
	9/23/2015	17.98	8.10	1.014	1,559	2.45	-73.5	3.00
	12/3/2015	17.72	8.20	0.936	1,441	4.02	-136.6	1.25
	12/3/2015	18.00	8.09	0.937	1,441	2.63	-163.4	1.75
	12/3/2015	18.04	8.06	0.931	1,433	4.07	-177.6	2.25
	3/28/2016	18.05	7.04	0.600	1,000	5.16	-9.0	1.25
	6/22/2016	17.00	7.38	--	1,060	1.63	1.8	3.00
	9/7/2016	16.94	7.03	0.777	1,196	2.46	8.5	2.50
	11/28/2016	17.79	9.12	--	3,150	3.50	115.9	2.00
	3/6/2017	15.90	7.42	0.810	1,247	1.53	-160.6	1.50
	6/12/2017	15.22	7.42	0.763	1,174	2.56	-116.3	2.00
	10/27/2017	17.98	7.21	--	1,196	3.06	74.1	3.00
	12/6/2017	16.64	7.09	0.851	1,307	2.53	-63.8	2.50
	3/13/2018	17.05	7.23	--	1,043	0.15	14.6	1.14
	6/28/2018	17.56	7.08	--	1,198	1.28	60.1	3.00
	9/6/2018	18.06	7.43	--	1,395	1.31	51.6	3.50
	3/5/2019	14.20	7.56	--	1,370	--	-24.4	--
	5/21/2019	14.30	7.26	0.500	1,010	--	-29.6	2.00
	8/26/2019	19.10	7.05	0.580	1,170	--	-25.2	2.75
	10/29/2019	17.70	6.47	0.630	1,300	--	-25.6	3.00
	1/29/2020	12.20	6.80	0.540	1,070	6.75	-26.2	--
	4/21/2020	18.80	6.55	0.580	1,180	3.10	-20.0	--
	7/16/2020	22.30	6.37	0.770	1,550	2.17	-11.6	--
	10/1/2020	19.20	6.78	0.730	1,460	3.69	-22.2	3.64
TMW-1	12/3/2015	17.12	8.23	2.072	3,188	7.40	-205.6	--
TMW-2	12/3/2015	17.54	9.40	5.043	7,761	2.47	-231.2	--

Notes:

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
FARMINGTON B COM #1E
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)	TPH GRO (mg/L)	TPH DPO (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Sodium (dissolved) (mg/L)	Iron (total) (mg/L)	Manganese (total) (mg/L)	Nitrate (as N) (mg/L)	Sulfate (mg/L)
NMWQCC Standards	MW-1	2/19/1983	(orig)	0.010	0.75	0.75	0.82	NE	NE	1.0	0.20	NE	NE	NE	10	600
	MW-1	12/29/1998	(orig)	0.21	0.034	0.37	2.044	--	--	--	--	--	--	--	--	--
	MW-1	5/9/2005	(orig)	0.35	ND	0.42	2.8	--	--	--	--	--	--	--	--	--
	MW-1	10/19/2005	(orig)	0.017	<0.0007	0.074	0.25	--	--	--	--	--	--	--	<0.40	77.8
	MW-1	11/14/2006	(orig)	0.034	<0.0007	0.17	1.4	--	--	--	--	--	--	--	0.15	39.9
	MW-1	11/17/2007	(orig)	0.038	<0.0007	0.19	1.6	--	--	--	--	--	--	--	<0.015	145
	MW-1	7/24/2008	(orig)	0.007	<0.0005	0.12	0.25	--	--	--	--	--	--	--	<0.015	38.4
	MW-1	7/24/2008	(orig)	<0.0005	<0.0005	0.09	0.035	--	--	--	--	--	--	--	<0.5	4.76
	MW-1 Duplicate	7/24/2008	(orig)	<0.0005	<0.0005	0.11	0.059	--	--	--	--	--	--	--	--	--
	MW-1	10/22/2008	(orig)	<0.005	<0.005	0.088	0.165	--	--	--	--	--	--	--	<0.5	17
	MW-1 Duplicate	10/22/2008	(orig)	<0.005	<0.005	0.095	0.186	--	--	--	--	--	--	--	--	--
	MW-1	1/21/2009	(orig)	--	--	--	--	--	--	--	--	--	--	--	--	--
	MW-1	4/1/2009	(orig)	<0.005	<0.005	0.011	<0.005	--	--	--	--	--	--	--	--	--
	MW-1	6/10/2009	(orig)	<0.005	<0.005	0.096	<0.005	--	--	--	--	--	--	--	--	--
	MW-1	10/1/2009	(orig)	0.0013	<0.001	0.058	0.142	--	--	0.233	--	--	--	--	--	--
	MW-1	12/17/2009	(orig)	0.0014	<0.001	0.1	0.028	--	--	0.521	--	--	--	--	--	--
	MW-1	3/29/2010	(orig)	<0.001	<0.001	0.051	<0.001	--	--	0.0603	--	--	--	--	--	--
	MW-1	6/11/2010	(orig)	0.0011	<0.001	0.098	0.008	--	--	0.0217	--	--	--	--	--	--
	MW-1	9/24/2010	(orig)	<0.001	<0.001	0.092	<0.001	--	--	0.0285	--	--	--	--	--	--
	MW-1	2/7/2011	(orig)	<0.001	<0.001	0.026	<0.001	--	--	0.459	--	--	--	--	--	--
MW-1	MW-1	3/18/2011	(orig)	<0.001	<0.001	0.01	<0.001	--	--	<0.02	0.477	--	--	--	--	--
	MW-1	6/20/2011	(orig)	<0.0010	<0.0010	0.0912	0.0018	--	--	0.157	0.424	--	--	--	--	--
	GW-BCOM-062011-CMB-002	6/20/2011	Duplicate	<0.0010	<0.0010	0.0952	<0.0030	--	--	--	--	--	--	--	--	--
	GW-BCOM-062011-CMB-003	6/20/2011	Duplicate	<0.0010	<0.0010	0.0912	0.0018	--	--	4.1	0.268	--	--	--	--	--
	GW-074938-093011-CM-005	9/30/2011	(orig)	<0.001	<0.001	0.0618	0.0062	--	--	1.91	0.35	--	--	--	--	--
	GW-074938-093011-CM-006	9/30/2011	Duplicate	<0.001	<0.001	0.0618	0.0062	--	--	--	--	--	--	--	--	--
	GW-074938-121511-CB-MW-1	12/15/2011	(orig)	<0.001	<0.001	0.0948	0.0085	--	--	--	--	--	--	--	--	--
	GW-074938-121511-CB-DUP	12/15/2011	Duplicate	<0.001	<0.001	0.0907	0.0082	--	--	--	--	--	--	--	--	--
	GW-074938-092112-3P-MW-1	9/21/2012	(orig)	--	--	--	--	--	--	2.9	0.27	--	--	--	--	--
	GW-074938-040413-CM-MW-1	4/4/2013	(orig)	--	--	--	--	--	--	1.8	0.47	--	--	--	--	--
	GW-074938-063013-CM-MW-1	9/30/2013	(orig)	--	--	--	--	--	--	1.7	0.29	--	--	--	--	--
	GW-074938-063014-CM-MW-1	9/26/2014	(orig)	--	--	--	--	--	--	2.3	0.34	--	--	--	--	16.3
	GW-074938-121814-CM-MW-1	12/18/2014	(orig)	--	--	--	--	--	--	0.0665	<0.0015	1.200	139	0.844	--	1.420
	GW-074938-012915-NM-MW-1	1/29/2015	(orig)	--	--	--	--	--	--	<0.003	<0.005	333	332	0.0335	--	217
	GW-074938-092115-CB-MW-1	9/21/2015	(orig)	--	--	--	--	--	--	<0.05	<0.05	5.500	--	--	--	8.230
	GW-074938-061815-CB-DUP	6/18/2015	Duplicate	--	--	--	--	--	--	<0.5	<0.05	5.800	--	--	--	--
	GW-074938-092115-CB-MW-1	9/21/2015	(orig)	--	--	--	--	--	--	<0.05	<0.005	970	--	--	--	1370
	GW-074938-092115-CB-DUP	9/21/2015	Duplicate	--	--	--	--	--	--	<0.05	<0.005	989	--	--	--	--
	GW-074938-123115-CB-MW-1	12/31/2015	(orig)	--	--	--	--	--	--	0.678	0.568	264	9.27	0.671	--	300
	GW-074938-123115-CB-DUP	12/31/2015	Duplicate	--	--	--	--	--	--	0.716	0.597	265	--	--	--	--
	GW-074938-032816-CM-MW-1	3/28/2016	(orig)	--	--	--	--	--	--	--	0.454	--	--	--	--	--
	GW-074938-032816-CM-DUP	3/28/2016	Duplicate	--	--	--	--	--	--	--	0.445	--	--	--	--	--
	GW-074938-062216-SP-MW-1	6/22/2016	(orig)	--	--	--	--	--	--	16.2*	1.72*	--	--	--	--	--
	GW-074938-090716-SP-MW-1	9/7/2016	(orig)	--	--	--	--	--	--	7.66*	1.63	--	--	--	--	689
	GW-074938-090716-SP-DUP	9/7/2016	Duplicate	--	--	--	--	--	--	10.2*	1.77	--	--	--	--	767
MW-1	GW-074938-030617-CM-MW-1	3/6/2017	(orig)	--	--	--	--	--	--	<0.05	0.022	--	--	--	--	408
	GW-074938-061217-CM-MW-1	6/12/2017	(orig)	--	--	--	--	--	--	0.662	0.839	--	--	--	--	2420
	GW-11146003-102717-CM-MW-1	10/27/2017	(orig)	--	--	--	--	--	--	6.69	1.15	--	--	--	--	105
	GW-11146003-120617-SP-MW-1	12/06/2017	(orig)	--	--	--	--	--	--	4.89	1.02	--	--	--	--	44.9
	GW-11146003-031318-NM-MW-1	3/13/2018	(orig)	--	--	--	--	--	--	3.44	0.961	--	--	--	--	64.2
	GW-11146003-062818-CM-MW-1	6/28/2018	(orig)	--	--	--	--	--	--	8.35	1.14	--	--	--	--	296
	GW-11146003-090618-CM-MW-1	9/6/2018	(orig)	--	--	--	--	--	--	9.04	3.76	--	--	--	--	517
	MW-1	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	1.07	--	--	--	--	35.3
	MW-1	3/5/2019	(orig)	--	--	--	--	--	--	<0.10	1.07	--	--	--	--	47.2
	MW-1	5/21/2019	(orig)	--	--	--	--	--	--	<0.10	1.02	--	--	--	--	36.9
	MW-1	8/28/2019	(orig)	--	--	--	--	--	--	<0.10	1.07	--	--	--	--	62.8
	MW-1	10/30/2019	(orig)	--	--	--	--	--	--	<0.10	1.01	--	--	--	--	83.4
	MW-1	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	1.14	--	--	--	--	58.9
	MW-1	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	1.20	--	--	--	--	81.7
	MW-1	Q3	(orig)	--	--	--	--	--	--	Invalid Sample due to lab issues	--	--	--	--	--	--
	MW-1	10/1/2020	(orig)	--	--	--	--	--	--	0.11	2.91	--	--	--	--	211

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	TPH GPO (mg/L)	TPH DPO (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Sodium (dissolved) (mg/L)	Iron (total) (mg/L)	Manganese (total) (mg/L)	Nitrate (as N) (mg/L)	Sulfate (mg/L)
NMWQC Standards	GW-074938-040413-CN-MW-2	4/4/2013	(orig)	0.010	0.75	0.75	0.62	NE	NE	1.0	0.20	NE	NE	NE	10	600
	GW-074938-093013-CN-MW-2	9/30/2013	(orig)	--	--	--	--	--	--	<0.05	0.006	--	--	--	--	--
	GW-074938-092315-CN-MW-2	9/23/2015	(orig)	--	--	--	--	--	--	<0.05	0.0077	--	--	--	--	--
	GW-074938-092315-CN-MW-2	9/23/2015	(orig)	--	--	--	--	--	--	<0.05	0.0077	--	--	--	--	213
	GW-074938-090716-SP-MW-2	9/7/2016	(orig)	--	--	--	--	--	--	<0.05	0.006	--	--	--	--	106
	GW-11146003-031318-NW-MW-2	3/13/2018	(orig)	--	--	--	--	--	--	<0.05	0.0167	--	--	--	--	--
	GW-11146003-062818-CN-MW-2	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	0.006	--	--	--	--	--
	GW-11146003-062818-CN-MW-2	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	0.006	--	--	--	--	--
	GW-11146003-090618-CN-MW-2	9/6/2018	(orig)	--	--	--	--	--	--	<0.05	0.006	--	--	--	--	--
	MW-2	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
MW-2	MW-2	10/30/2019	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-2	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-2	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-2	Q3	(orig)	--	--	--	--	--	--	Invalid Sample due to lab issues	--	--	--	--	--	--
	MW-2	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-2	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-2	12/15/2011	(orig)	--	--	--	--	--	--	0.246	0.112	--	--	--	--	--
	GW-074938-040413-CN-MW-3	4/4/2013	(orig)	--	--	--	--	--	--	<0.05	0.34	--	--	--	--	--
	GW-074938-093013-CN-MW-3	9/30/2013	(orig)	--	--	--	--	--	--	<0.05	0.047	--	--	--	--	--
	GW-074938-092315-CN-MW-3	9/23/2015	(orig)	--	--	--	--	--	--	<0.05	0.121	--	--	--	--	219
MW-3	GW-074938-090716-SP-MW-3	9/7/2016	(orig)	--	--	--	--	--	--	<0.05	0.85	--	--	--	--	192
	GW-074938-112816-CN-MW-3	11/28/2016	(orig)	--	--	--	--	--	--	0.218	0.959	--	--	--	--	214
	GW-074938-030617-CN-MW-3	3/6/2017	(orig)	--	--	--	--	--	--	0.149	0.211	--	--	--	--	116
	GW-074938-061217-CN-MW-3	6/12/2017	(orig)	--	--	--	--	--	--	0.0726	0.0604	--	--	--	--	102
	GW-11146003-102717-CN-MW-3	10/27/2017	(orig)	--	--	--	--	--	--	<0.05	0.136	--	--	--	--	171
	GW-11146003-120617-SP-MW-3	12/06/2017	(orig)	--	--	--	--	--	--	<0.05	0.0861	--	--	--	--	189
	GW-11146003-031318-NW-MW-3	3/13/2018	(orig)	--	--	--	--	--	--	<0.05	0.084	--	--	--	--	--
	GW-11146003-062818-CN-MW-3	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	0.0336	--	--	--	--	--
	GW-11146003-090618-CN-MW-3	9/6/2018	(orig)	--	--	--	--	--	--	<0.05	0.143	--	--	--	--	--
	MW-3	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	0.157	--	--	--	--	--
MW-4	MW-3	3/6/2019	(orig)	--	--	--	--	--	--	<0.10	0.0341	--	--	--	--	--
	MW-3	5/21/2019	(orig)	--	--	--	--	--	--	<0.10	<0.01	--	--	--	--	--
	MW-3	8/26/2019	(orig)	--	--	--	--	--	--	<0.10	0.249	--	--	--	--	--
	MW-3	10/30/2019	(orig)	--	--	--	--	--	--	<0.10	0.145	--	--	--	--	--
	MW-3	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	0.066	--	--	--	--	--
	MW-3	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	0.0156	--	--	--	--	--
	MW-3	Q3	(orig)	--	--	--	--	--	--	Invalid Sample due to lab issues	--	--	--	--	--	--
	MW-3	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	0.041	--	--	--	--	--
	GW-074938-040413-CN-MW-4	4/4/2013	(orig)	--	--	--	--	--	--	<0.05	0.069	--	--	--	--	--
	GW-074938-093013-CN-MW-4	9/30/2013	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
MW-5	GW-074938-092315-CN-MW-4	9/23/2015	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	86.8
	GW-074938-090716-SP-MW-4	9/7/2016	(orig)	--	--	--	--	--	--	<0.05	0.0064	--	--	--	--	70.5
	GW-074938-112816-CN-MW-4	11/28/2016	(orig)	--	--	--	--	--	--	<0.05	0.0066	--	--	--	--	112
	GW-11146003-031318-NW-MW-4	3/13/2018	(orig)	--	--	--	--	--	--	<0.05	0.0063	--	--	--	--	--
	GW-11146003-062818-CN-MW-4	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
	GW-11146003-090618-CN-MW-4	9/6/2018	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
	MW-4	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-4	10/30/2019	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-4	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-4	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
MW-5	MW-4	Q3	(orig)	--	--	--	--	--	--	Invalid Sample due to lab issues	--	--	--	--	--	--
	MW-4	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	GW-074938-040413-CN-MW-5	4/4/2013	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
	GW-074938-040413-CN-DUP	4/4/2013	(Duplicate)	--	--	--	--	--	--	0.62*	0.025*	--	--	--	--	--
	GW-074938-093013-CN-MW-5	9/30/2013	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
	GW-074938-092315-CN-MW-5	9/23/2015	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	115
	GW-074938-090716-SP-MW-5	9/7/2016	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	144
	GW-074938-112816-CN-MW-5	11/28/2016	(orig)	--	--	--	--	--	--	0.166	0.0063	--	--	--	--	155
	GW-11146003-031318-NW-MW-5	03/13/2018	(orig)	--	--	--	--	--	--	0.0668	<0.005	--	--	--	--	--
	GW-11146003-062818-CN-MW-5	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
MW-5	GW-11146003-090618-CN-MW-5	9/6/2018	(orig)	--	--	--	--	--	--	<0.05	<0.005	--	--	--	--	--
	MW-5	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	10/30/2019	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	Q3	(orig)	--	--	--	--	--	--	Invalid Sample due to lab issues	--	--	--	--	--	--
	MW-5	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	0.0131	--	--	--	--	--
	MW-5	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--
	MW-5	10/2/2020	(orig)	--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	--

Well ID	Sample ID	Sample Date	Sample Type	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (total) (mg/L)	TPH GPO (mg/L)	TPH DPO (mg/L)	Iron (dissolved) (mg/L)	Manganese (dissolved) (mg/L)	Sodium (dissolved) (mg/L)	Iron (total) (mg/L)	Manganese (total) (mg/L)	Nitrate (as N) (mg/L)	Sulfate (mg/L)
MW-6	NMWQC Standards															
	MW-6	9/15/1993	(orig)	0.010	0.75	0.75	0.62	NE	NE	1.0	0.20	NE	NE	NE	10	600
	MW-6	12/29/1998	(orig)	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
	MW-6	3/3/1999	(orig)	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
	MW-6	6/15/1999	(orig)	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
	MW-6	9/15/1999	(orig)	ND	0.0007	0.0011	ND	--	--	--	--	--	--	--	--	--
	MW-6	12/14/1999	(orig)	ND	0.0018	0.0007	0.0019	--	--	--	--	--	--	--	--	--
	MW-6	1/22/2004	(orig)	ND	ND	ND	ND	--	--	--	--	--	--	--	--	--
	MW-6	5/9/2005	(orig)	<0.0005	<0.0007	<0.0008	<0.0008	--	--	--	--	--	--	--	<0.4	97
	MW-6	10/19/2005	(orig)	<0.0005	<0.0007	<0.0008	<0.0008	--	--	--	--	--	--	--	5.4	52.6
	MW-6	11/14/2006	(orig)	<0.0005	<0.0007	<0.0008	0.001	--	--	--	--	--	--	--	<0.015	159
	MW-6	1/17/2007	(orig)	<0.0005	<0.0007	<0.0008	<0.0008	--	--	--	--	--	--	--	<0.015	112
	MW-6	7/24/2008	(orig)	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	<0.5	44.4
	MW-6	10/22/2008	(orig)	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	<0.5	43.7
	MW-6	1/21/2009	(orig)	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	<0.5	31.1
	MW-6	4/1/2009	(orig)	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--
	MW-6	6/10/2009	(orig)	<0.005	<0.005	<0.005	<0.005	--	--	--	--	--	--	--	--	--
	MW-6	10/17/2009	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	0.0511	--	--	--	--	--	--
	MW-6	12/17/2009	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.020	--	--	--	--	--	--
	MW-6	3/29/2010	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.020	--	--	--	--	--	--
	MW-6	6/11/2010	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.020	--	--	--	--	--	--
	MW-6	9/24/2010	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.020	--	--	--	--	--	--
	MW-6	2/7/2011	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	0.543	--	--	--	--	--	--
	MW-6	3/18/2011	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	0.0679	--	--	--	--	--	--
	MW-6	6/20/2011	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.1	--	--	--	--	0.43	--
	MW-6	9/30/2011	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	<0.05	0.0261	--	--	--	--	--
	MW-6	12/15/2011	(orig)	<0.001	<0.001	<0.001	<0.001	--	--	0.429	1.06	--	--	--	--	--
	MW-6	9/21/2012	(orig)	--	--	--	--	--	--	<0.05	0.058	--	--	--	--	--
	MW-6	9/21/2012	(Duplicate)	--	--	--	--	--	--	<0.05	0.055	--	--	--	--	--
	MW-6	4/4/2013	(orig)	--	--	--	--	--	--	0.056	0.33	--	--	--	--	--
	MW-6	9/30/2013	(orig)	--	--	--	--	--	--	<0.05	0.17	--	--	--	--	--
	MW-6	9/30/2013	(Duplicate)	--	--	--	--	--	--	<0.05	0.17	--	--	--	--	--
	MW-6	9/26/2014	(orig)	--	--	--	--	--	--	0.24	0.41	--	--	--	--	--
	MW-6	9/26/2014	(Duplicate)	--	--	--	--	--	--	0.27	0.41	--	--	--	--	--
MW-6	--	1/15/2014														
	GW-074938-121814-CN-MW-6	12/18/2014	(orig)	--	--	--	--	<0.50	<0.50	1.33	0.268	177	4.6	0.351	--	112
	GW-074938-121814-CN-MW-DUP	12/18/2014	(Duplicate)	--	--	--	--	--	--	1.11	0.255	166	--	--	--	112
	GW-074938-121815-W-MW-6	1/29/2015	(orig)	--	--	--	--	--	--	<0.05	0.402	93.5	13.9	0.0668	--	29.8
	GW-074938-121815-W-MW-6	3/17/2015	(orig)	--	--	--	--	IN SITU CHEMICAL OXIDATION - 2nd INJECTION EVENT	IN SITU CHEMICAL OXIDATION - 2nd INJECTION EVENT	0.0336	0.0225	402	--	--	--	236
	GW-074938-121815-CB-MW-6	6/19/2015	(orig)	--	--	--	--	--	--	<0.05	0.0152	342	--	--	--	238
	GW-074938-121815-CB-MW-6	9/23/2015	(orig)	--	--	--	--	--	--	0.0709	0.194	252	7.61	0.428	--	75.8
	GW-074938-121815-CB-MW-6	12/15/2015	(orig)	--	--	--	--	--	--	--	0.456	--	--	--	--	--
	GW-074938-121816-CN-MW-6	3/28/2016	(orig)	--	--	--	--	--	--	<0.05	0.463	--	--	--	--	--
	GW-074938-121816-SP-MW-6	6/22/2016	(orig)	--	--	--	--	--	--	<0.05	0.409	--	--	--	--	86.7
	GW-074938-090716-SP-MW-6	9/7/2016	(orig)	--	--	--	--	IN SITU CHEMICAL OXIDATION - 3rd INJECTION EVENT	IN SITU CHEMICAL OXIDATION - 3rd INJECTION EVENT	<0.05	0.409	--	--	--	--	--
	--	10/18/2016														
	GW-074938-112816-CN-MW-6	11/28/2016	(orig)	--	--	--	--	--	--	<0.05	0.0051	--	--	--	--	1130
	GW-074938-030617-CN-MW-6	3/6/2017	(orig)	--	--	--	--	--	--	0.0598	0.428	--	--	--	--	142
	GW-074938-061217-CN-MW-6	6/12/2017	(orig)	--	--	--	--	--	--	0.0543	0.0618	--	--	--	--	145
	GW-11146003-102717-CN-MW-6	10/27/2017	(orig)	--	--	--	--	--	--	<0.05	0.218	--	--	--	--	171
	GW-11146003-120617-SP-MW-6	12/06/2017	(orig)	--	--	--	--	--	--	<0.05	0.311	--	--	--	--	176
	GW-11146003-031318-W-MW-6	3/13/2018	(orig)	--	--	--	--	--	--	<0.05	0.925	--	--	--	--	88.9
	GW-11146003-062818-CN-MW-6	6/28/2018	(orig)	--	--	--	--	--	--	<0.05	0.973	--	--	--	--	104
	GW-11146003-090618-CN-MW-6	9/6/2018	(orig)	--	--	--	--	--	--	<0.05	0.848	--	--	--	--	289
	MW-6	12/19/2018	(orig)	--	--	--	--	--	--	<0.10	0.306	--	--	--	--	142
	MW-6	3/05/2019	(orig)	--	--	--	--	--	--	<0.10	0.017	--	--	--	--	59.2
	MW-6	5/21/2019	(orig)	--	--	--	--	--	--	<0.10	0.42	--	--	--	--	32.6
	MW-6	8/26/2019	(orig)	--	--	--	--	--	--	<0.10	0.367	--	--	--	--	74.2
	MW-6	10/29/2019	(orig)	--	--	--	--	--	--	<0.10	0.211	--	--	--	--	150
	MW-6	1/29/2020	(orig)	--	--	--	--	--	--	<0.10	0.524	--	--	--	--	74.1
	MW-6	4/21/2020	(orig)	--	--	--	--	--	--	<0.10	0.556	--	--	--	--	86.8
	Q3			--	--	--	--	--	--	Invalid Sample due to Lab Issues	--	--	--	--	--	--
	MW-6	10/1/2020		--	--	--	--	--	--	<0.10	<0.010	--	--	--	--	300

Notes:

mg/L - milligrams per liter

ND - not detected, practical quantitation limit unknown

NE - not established

NMWQC - 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 NMEPA standard

-- - not analyzed

HilCorp-Farmington, NM

Sample Delivery Group: L1184716
Samples Received: 01/31/2020
Project Number:
Description: Farmington B-Com No.1E
Site: FMT. B-COM #1E
Report To: Kurt Hoekstra
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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Sr: Sample Results	5	³ Ss
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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L1184716-01 GW

				Collected by Kurt	Collected date/time 01/29/20 10:45	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1420675	5	02/02/20 11:57	02/02/20 11:57	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 19:49	EL	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

MW-2 L1184716-02 GW

				Collected by Kurt	Collected date/time 01/29/20 13:20	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 19:52	EL	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

MW-3 L1184716-03 GW

				Collected by Kurt	Collected date/time 01/29/20 14:15	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 19:54	EL	Mt. Juliet, TN

⁷ Gl

⁸ Al

MW-4 L1184716-04 GW

				Collected by Kurt	Collected date/time 01/28/20 11:20	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 19:57	EL	Mt. Juliet, TN

⁹ Sc

MW-5 L1184716-05 GW

				Collected by Kurt	Collected date/time 01/28/20 10:10	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 20:13	EL	Mt. Juliet, TN

MW-6 L1184716-06 GW

				Collected by Kurt	Collected date/time 01/29/20 10:05	Received date/time 01/31/20 08:40
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1420675	5	02/02/20 12:10	02/02/20 12:10	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1420613	1	02/02/20 11:18	02/03/20 20:16	EL	Mt. Juliet, TN



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Collected date/time: 01/29/20 10:45

L1184716

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	58.9		25.0	5	02/02/2020 11:57	WG1420675

¹Cp

²Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 19:49	WG1420613
Manganese,Dissolved	1.14		0.0100	1	02/03/2020 19:49	WG1420613

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 19:52	WG1420613
Manganese,Dissolved	ND		0.0100	1	02/03/2020 19:52	WG1420613

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 19:54	WG1420613
Manganese,Dissolved	0.0660		0.0100	1	02/03/2020 19:54	WG1420613

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Al

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Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 19:57	WG1420613
Manganese,Dissolved	ND		0.0100	1	02/03/2020 19:57	WG1420613

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 20:13	WG1420613
Manganese,Dissolved	ND		0.0100	1	02/03/2020 20:13	WG1420613

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Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	74.1		25.0	5	02/02/2020 12:10	WG1420675

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	02/03/2020 20:16	WG1420613
Manganese,Dissolved	0.524		0.0100	1	02/03/2020 20:16	WG1420613



Method Blank (MB)

(MB) R3496311-1 02/02/20 09:36

Analyte	MB Result		MB Qualifier		MB MDL		MB RDL	
	mg/l		mg/l		mg/l		mg/l	
Sulfate	U		0.0774		5.00			

L1184650-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1184650-01 02/02/20 10:52 • (DUP) R3496311-3 02/02/20 11:05

Analyte	Original Result		DUP Result		Dilution		DUP RPD		DUP Qualifier		DUP RPD Limits	
	mg/l		mg/l			%		%		%		%
Sulfate	9.35		9.11		1	2.67					15	

L1184956-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1184956-06 02/02/20 16:18 • (DUP) R3496311-6 02/02/20 16:31

Analyte	Original Result		DUP Result		Dilution		DUP RPD		DUP Qualifier		DUP RPD Limits	
	mg/l		mg/l			%		%		%		%
Sulfate	43.6		45.5		1	4.42					15	

Laboratory Control Sample (LCS)

(LCS) R3496311-2 02/02/20 09:49

Analyte	Spike Amount		LCS Result		LCS Rec.		Rec. Limits		LCS Qualifier	
	mg/l		mg/l		%		%			
Sulfate	40.0		39.0		97.6		80.0-120			

L1184650-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1184650-01 02/02/20 10:52 • (MS) R3496311-4 02/02/20 11:18 • (MSD) R3496311-5 02/02/20 11:31

Analyte	Spike Amount		Original Result		MS Result		MSD Result		MS Rec.		MSD Rec.		Dilution		Rec. Limits		MSD Qualifier		RPD		RPD Limits	
	mg/l		mg/l		mg/l		mg/l		%	%	%	%			%	%		%	%	%		%
Sulfate	50.0		9.35		60.9		59.6		103		101		1		80.0-120		2.07		15			

L1184956-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1184956-06 02/02/20 16:18 • (MS) R3496311-7 02/02/20 16:44

Analyte	Spike Amount		Original Result		MS Result		MS Rec.		Dilution		Rec. Limits		MS Qualifier	
	mg/l		mg/l		mg/l		%	%			%	%		
Sulfate	50.0		43.6		91.5		96.0		1		80.0-120			



Method Blank (MB)

(MB) R3496591-1 02/03/20 19:33

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Iron,Dissolved	U		0.0141	0.100
Manganese,Dissolved	U		0.00120	0.0100

Laboratory Control Sample (LCS)

(LCS) R3496591-2 02/03/20 19:36

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Iron,Dissolved	10.0	9.93	99.3	80.0-120	
Manganese,Dissolved	1.00	0.970	97.0	80.0-120	

L1184653-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1184653-01 02/03/20 19:39 • (MS) R3496591-4 02/03/20 19:44 • (MSD) R3496591-5 02/03/20 19:46

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 %
Iron,Dissolved	10.0	ND	9.93	9.97	98.6	99.0	1	75.0-125		0.436	20	20
Manganese,Dissolved	1.00	0.354	1.30	1.31	94.3	95.6	1	75.0-125		1.01	20	20

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Cp

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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.
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.





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.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

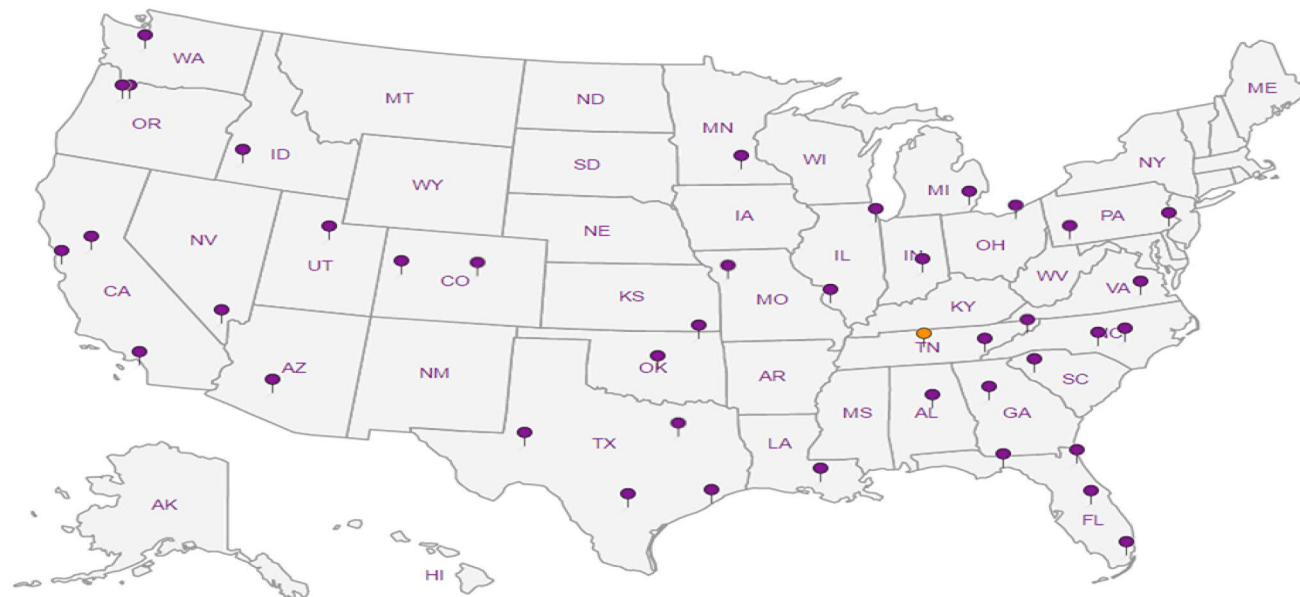
Third Party Federal Accreditations

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		

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

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HilCorp-Farmington, NM 382 Road 3100 Aztec, NM 87401		Billing Information: PO Box 61529 Houston, TX 77208		Pres Chk	Chain of Custody	Page ____ of ____
Report to: Kurt Hoekstra		Email To: ideal@hilcorp.com; khoekstra@hilcorp.com		Pace Analytical National Center for Testing & Innovation		
Project: Description: Farmington B-Com No.1E		City/State Collected:		12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859		
Phone: 505-486-9543 Fax:		Client Project # HILCORANIM-FARMINGTON		SDG # 618 4716 Tab. M094		
Collected by (print): <i>Kurt Hoekstra</i>		Site/Facility ID # Farm B-Com #1E		Acctnum: HILCORANIM Template: T146864 Prelogin: P750461 PM: 823 - Olivia Studebaker PB:		
Collected by (signature): <i>Kurt Hoekstra</i>		Rush? (Lab MUST Be Notified) Same Day ☒ Five Day Next Day ☐ 5 Day (Rad Only) Two Day ☐ 10 Day (Rad Only) Three Day ☐		Shipped Via:		
Immediately Packed on Ice N ☐ Y ☒		Date Results Needed		Remarks		
Sample ID		Date		Sample # (lab only)		
Comp/Grab		Matrix *		Dissolved Fe, Mn 250mHDP-NOPres		
Depth		Date		SULFATE 125mHDP-NOPres		
No. of Cntrs		Time		NO SAMPLES FIELD FILTERED		
MW-1		1-29 10:45		X		
MW-2		1-29 1:20		X		
MW-3		1-29 2:15		X		
MW-4		1-28 11:20		X		
MW-5		1-28 10:10		X		
MW-6		1-29 10:05		X		
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks:		pH _____ Temp _____ Flow _____ Other _____		
Relinquished by: (Signature) <i>Kurt Hoekstra</i>		Date: 1-30-20		Trip Blank Received: Yes (No) 8 HCL / MeOH TBR		
Relinquished by: (Signature)		Date:		Temp: 18.1-19.1 °C Bottles Received:		
Relinquished by: (Signature)		Date:		Date: 1-31 Time: 0840		
Relinquished by: (Signature)		Date:		If preservation required by Login: Date/Time		
Relinquished by: (Signature)		Date:		Hold:		
Relinquished by: (Signature)		Date:		Condition: NCF / OK		

April 30, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

HilCorp-Farmington, NM

Sample Delivery Group: L1212070
Samples Received: 04/24/2020
Project Number:
Description: Farmington B-Com No.1E
Site: FARMINGTON B-COM NO.1E
Report To: Kurt Hoekstra
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
MW-1 L1212070-01	5	
MW-2 L1212070-02	6	⁴ Cn
MW-3 L1212070-03	7	⁵ Sr
MW-4 L1212070-04	8	
MW-5 L1212070-05	9	⁶ Qc
MW-6 L1212070-06	10	
Qc: Quality Control Summary	11	⁷ Gl
Wet Chemistry by Method 9056A	11	
Metals (ICP) by Method 6010B	12	⁸ Al
Gl: Glossary of Terms	13	⁹ Sc
Al: Accreditations & Locations	14	
Sc: Sample Chain of Custody	15	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L1212070-01 GW

				Collected by Kurt	Collected date/time 04/21/20 14:05	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1466490	1	04/27/20 15:30	04/27/20 15:30	ST	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 01:56	CCE	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

MW-2 L1212070-02 GW

				Collected by Kurt	Collected date/time 04/22/20 09:35	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 01:59	CCE	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

MW-3 L1212070-03 GW

				Collected by Kurt	Collected date/time 04/22/20 10:50	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 02:02	CCE	Mt. Juliet, TN

⁷ Gl

⁸ Al

MW-4 L1212070-04 GW

				Collected by Kurt	Collected date/time 04/21/20 11:20	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 02:04	CCE	Mt. Juliet, TN

⁹ Sc

MW-5 L1212070-05 GW

				Collected by Kurt	Collected date/time 04/21/20 09:55	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 02:12	CCE	Mt. Juliet, TN

MW-6 L1212070-06 GW

				Collected by Kurt	Collected date/time 04/21/20 12:45	Received date/time 04/24/20 08:30
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1466490	1	04/28/20 01:51	04/28/20 01:51	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1466424	1	04/28/20 19:37	04/30/20 02:15	CCE	Mt. Juliet, TN



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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Collected date/time: 04/21/20 14:05

L1212070

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	81.7		5.00	1	04/27/2020 15:30	WG1466490

¹ Cp

² Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 01:56	WG1466424
Manganese,Dissolved	1.20		0.0100	1	04/30/2020 01:56	WG1466424

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 01:59	WG1466424
Manganese,Dissolved	ND		0.0100	1	04/30/2020 01:59	WG1466424

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 02:02	WG1466424
Manganese,Dissolved	0.0156		0.0100	1	04/30/2020 02:02	WG1466424

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 02:04	WG1466424
Manganese,Dissolved	ND		0.0100	1	04/30/2020 02:04	WG1466424

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 02:12	WG1466424
Manganese,Dissolved	ND		0.0100	1	04/30/2020 02:12	WG1466424

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	86.8		5.00	1	04/28/2020 01:51	WG1466490

¹ Cp

² Tc

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	04/30/2020 02:15	WG1466424
Manganese,Dissolved	0.556		0.0100	1	04/30/2020 02:15	WG1466424

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3522447-1 04/27/20 10:32

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U		0.594	5.00

L1211796-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1211796-01 04/27/20 13:49 • (DUP) R3522447-3 04/27/20 14:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	ND	1.85	1	3.13	J	15

L1212216-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1212216-05 04/28/20 09:18 • (DUP) R3522569-3 04/28/20 09:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	226	225	5	0.318		15

Laboratory Control Sample (LCS)

(LCS) R3522447-2 04/27/20 10:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	39.1	97.8	80.0-120	

L1211796-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1211796-02 04/27/20 14:18 • (MS) R3522447-4 04/27/20 14:32 • (MSD) R3522447-5 04/27/20 14:46

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 %
Sulfate	50.0	ND	49.3	49.9	96.7	98.1	1	80.0-120		1.39	15	

L1212216-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1212216-06 04/28/20 05:49 • (MS) R3522569-2 04/28/20 06:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Sulfate	50.0	226	236	19.4	1	80.0-120	EV



Method Blank (MB)

(MB) R3523397-1 04/30/20 01:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Iron,Dissolved	U		0.0458	0.100
Manganese,Dissolved	U		0.00327	0.0100

Laboratory Control Sample (LCS)

(LCS) R3523397-2 04/30/20 01:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Iron,Dissolved	10.0	9.83	98.3	80.0-120	
Manganese,Dissolved	1.00	0.967	96.7	80.0-120	

L1212152-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1212152-09 04/30/20 01:46 • (MS) R3523397-4 04/30/20 01:51 • (MSD) R3523397-5 04/30/20 01:54

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 %
Iron,Dissolved	10.0	0.207	10.1	9.95	98.8	97.4	1	75.0-125			1.41	20
Manganese,Dissolved	1.00	0.200	1.16	1.15	95.6	95.4	1	75.0-125			0.212	20



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.
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

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



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Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
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Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

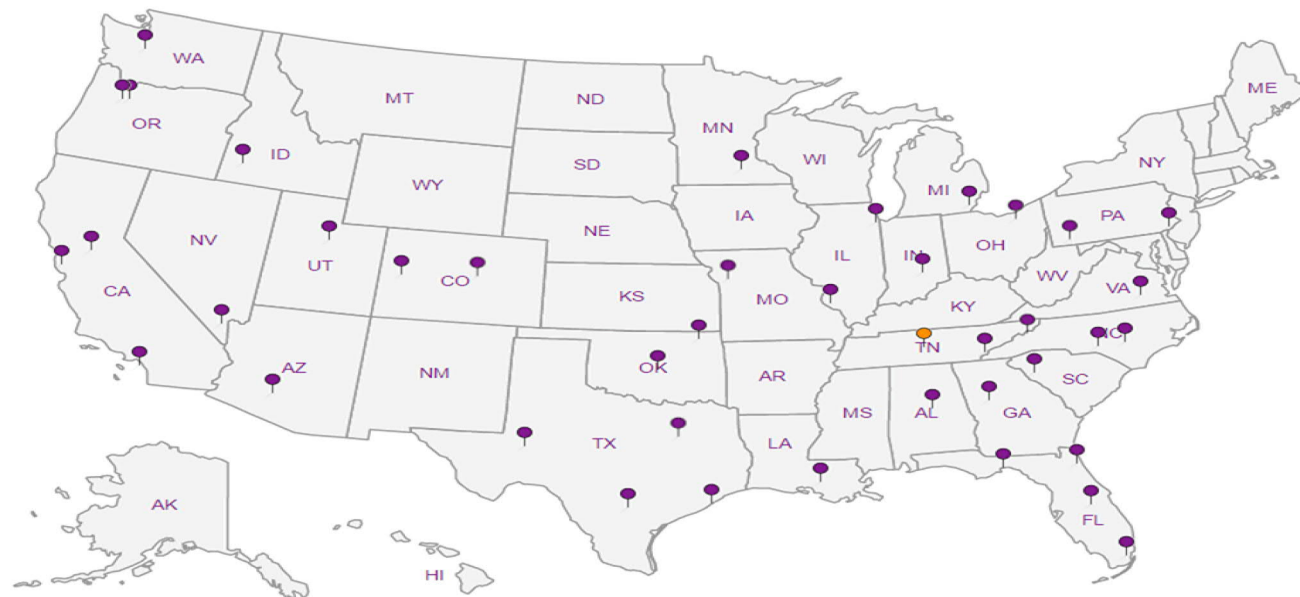
Third Party Federal Accreditations

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A2LA – ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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HilCorp-Farmington, NM 382 Road 3100 Aztec, NM 87401		Billing Information: PO Box 61529 Houston, TX 77208		Chain of Custody Page ____ of ____	
Report to: Kurt Hoekstra		Email To: jideal@hilcorp.com; khoekstra@hilcorp.com		Pace Analytical National Center for Testing & Innovation	
Project Description: Farmington B-Com No.1E		City/State Collected:		12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859	
Phone: 505-486-9543		Client Project #		SDG # A044	
Collected by (print): <i>Kurt Hoekstra</i>		Site/Facility ID # FARMINGTON B-Com #1E		Actnum: HILCORANM	
Collected by (signature): <i>Kurt Hoekstra</i>		Rush? (Lab MUST Be Notified) ☒ Same Day ☐ Next Day ☐ Two Day ☐ Three Day		Template: T146864	
Immediately Packed on Ice N ☒ Y ☐		Date Results Needed		Prelogin: P768578	
Sample ID		Comp/Grab		PM: 823 - Olivia Studebaker	
Matrix *		Depth		PB:	
Date		Date		Shipped Via:	
Time		Time		Remarks	
Crits		No. of		Sample # (lab only)	
MW-1	GW	4-21	2:05	2	X
MW-2	GW	4-22	9:35	1	X
MW-3	GW	4-22	10:50	1	X
MW-4	GW	4-21	11:20	1	X
MW-5	GW	4-21	9:55	1	X
MW-6	GW	4-21	12:45	2	X
Dissolved Fe, Mn 250mlHDPE-NoPres					
SULFATE 125mlHDPE-NoPres					
No Samples Field Filtered					
Analysis / Container / Preservative					
Pres Chk					
Sample Receipt Checklist					
COC Seal Present/Intact: ☒ 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					
If preservation required by Login: Date/Time					
Hold:					
Condition: NCF / ☒					
* Matrix:		Remarks:		pH ____ Temp ____	
SS - Soil AIR - Air F - Filter		Samples returned via:		Flow ____ Other ____	
GW - Groundwater B - Bioassay		UPS FedEx Courier		Tracking #	
WW - Waste Water		Date:		Received by: (Signature)	
DW - Drinking Water		Date:		Received by: (Signature)	
OT - Other		Date:		Received for lab by: (Signature)	
Relinquished by: (Signature)		Date:		Time:	
Relinquished by: (Signature)		Date:		Time:	
Relinquished by: (Signature)		Date:		Time:	

Jennifer Deal

From: Olivia Studebaker <Olivia.Studebaker@pacelabs.com>
Sent: Friday, February 19, 2021 8:08 AM
To: Kurt Hoekstra
Cc: Jennifer Deal
Subject: RE: [EXTERNAL] RE: Samples on Hold

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Kurt,

Thank you for speaking with me this morning. I am following up to confirm that we unfortunately missed getting this set of samples logged off hold in July. I sincerely apologize for the error and the inconvenience caused here. Please let me know if you need anything else.

Thank you,
Olivia

Please note that email addresses for staff at the Pace Analytical National Center for Testing & Innovation have changed. My new email address is olivia.studebaker@pacelabs.com. Please update your records accordingly.



Olivia Studebaker

Project Manager 1
12065 Lebanon Road | Mt. Juliet, TN 37122
Office: 615.773.9663
olivia.studebaker@pacelabs.com | pacenational.com

ESC Lab Sciences is now Pace Analytical National Center for Testing & Innovation! Please make note of my new email address and website.

From: Kurt Hoekstra <khoekstra@hilcorp.com>
Sent: Thursday, February 18, 2021 4:48 PM
To: Olivia Studebaker <Olivia.Studebaker@pacelabs.com>
Cc: Jennifer Deal <jdeal@hilcorp.com>
Subject: FW: [EXTERNAL] RE: Samples on Hold

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Olivia, we are looking for the Sample results for Q3 for the Farmington B Com # 1E. You should have received them on 7-18-2020 and then we had a couple of them on hold maybe because they were out of temp. but I actually had you run them all. Would you see if you have these results and send them to me and Jennifer please.

Thank you.

From: Kurt Hoekstra
Sent: Wednesday, July 22, 2020 7:13 AM

To: Olivia Studebaker <OStudebaker@pacenational.com>
Subject: RE: [EXTERNAL] RE: Samples on Hold

Thanks Olivia

From: Olivia Studebaker [<mailto:OStudebaker@pacenational.com>]
Sent: Wednesday, July 22, 2020 7:12 AM
To: Kurt Hoekstra <khoekstra@hilcorp.com>
Cc: Jennifer Deal <jdeal@hilcorp.com>
Subject: [EXTERNAL] RE: Samples on Hold

Hi Kurt,

Sure thing, I will have these set up to be ran for analysis.

Thank you,
Olivia

Olivia Studebaker

Project Manager

Pace Analytical National Center for Testing & Innovation

12065 Lebanon Road | Mt. Juliet, TN 37122

615-773-9663

ostudebaker@pacenational.com | pacenational.com

ESC Lab Sciences is now Pace Analytical National Center for Testing & Innovation! Please make note of my new email address and website.

From: Kurt Hoekstra <khoekstra@hilcorp.com>
Sent: Wednesday, July 22, 2020 7:30 AM
To: Olivia Studebaker <OStudebaker@pacenational.com>
Cc: Jennifer Deal <jdeal@hilcorp.com>
Subject: Samples on Hold

CAUTION: This email originated from outside Pace Analytical. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hello Olivia, would you please RUN the ground water samples from the Farmington B-Com # 1E that I asked you to put on hold a couple of days ago.

Thank you.

Kurt Hoekstra
Field Environmental Specialist
505-486-9543
khoekstra@hilcorp.com

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While all reasonable care has been taken to avoid the transmission of viruses, it is the responsibility of the recipient to ensure that the onward transmission, opening, or use of this message and any attachments will not adversely affect its systems or data. No responsibility is accepted by the company in this regard and the recipient should carry out such virus and other checks as it considers appropriate.

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 Please consider the environment before printing this email

October 15, 2020

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

HilCorp-Farmington, NM

Sample Delivery Group: L1269624
Samples Received: 10/03/2020
Project Number:
Description: Farmington B-Com No.1E
Site: FARMINGTON B-COM NO.1E
Report To: Kurt Hoekstra
382 Road 3100
Aztec, NM 87401

Entire Report Reviewed By:



Olivia Studebaker
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
MW-1 L1269624-01	5	
MW-2 L1269624-02	6	⁴ Cn
MW-3 L1269624-03	7	⁵ Sr
MW-4 L1269624-04	8	
MW-5 L1269624-05	9	⁶ Qc
MW-6 L1269624-06	10	
Qc: Quality Control Summary	11	⁷ Gl
Wet Chemistry by Method 9056A	11	
Metals (ICP) by Method 6010B	12	⁸ Al
Gl: Glossary of Terms	13	⁹ Sc
Al: Accreditations & Locations	14	
Sc: Sample Chain of Custody	15	

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



MW-1 L1269624-01 GW

				Collected by Kurt	Collected date/time 10/01/20 13:30	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1555496	5	10/10/20 03:59	10/10/20 03:59	MSP	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:13	EL	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

MW-2 L1269624-02 GW

				Collected by Kurt	Collected date/time 10/02/20 08:56	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:16	EL	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

MW-3 L1269624-03 GW

				Collected by Kurt	Collected date/time 10/02/20 09:40	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:19	EL	Mt. Juliet, TN

⁷ Gl

⁸ Al

MW-4 L1269624-04 GW

				Collected by Kurt	Collected date/time 10/01/20 10:30	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:22	EL	Mt. Juliet, TN

⁹ Sc

MW-5 L1269624-05 GW

				Collected by Kurt	Collected date/time 10/01/20 09:45	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:30	EL	Mt. Juliet, TN

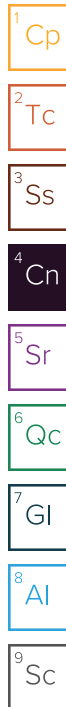
MW-6 L1269624-06 GW

				Collected by Kurt	Collected date/time 10/01/20 11:28	Received date/time 10/03/20 09:15
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9056A	WG1555496	5	10/10/20 04:12	10/10/20 04:12	MSP	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1555480	1	10/07/20 11:39	10/07/20 13:34	EL	Mt. Juliet, TN



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





Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	211		25.0	5	10/10/2020 03:59	WG1555496

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	0.110		0.100	1	10/07/2020 13:13	WG1555480
Manganese,Dissolved	2.91		0.0100	1	10/07/2020 13:13	WG1555480

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	10/07/2020 13:16	WG1555480
Manganese,Dissolved	ND		0.0100	1	10/07/2020 13:16	WG1555480

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	10/07/2020 13:19	WG1555480
Manganese,Dissolved	0.0410		0.0100	1	10/07/2020 13:19	WG1555480

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	10/07/2020 13:22	WG1555480
Manganese,Dissolved	ND		0.0100	1	10/07/2020 13:22	WG1555480

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	10/07/2020 13:30	WG1555480
Manganese,Dissolved	0.0131		0.0100	1	10/07/2020 13:30	WG1555480

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfate	300		25.0	5	10/10/2020 04:12	WG1555496

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Iron,Dissolved	ND		0.100	1	10/07/2020 13:34	WG1555480
Manganese,Dissolved	ND		0.0100	1	10/07/2020 13:34	WG1555480

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Method Blank (MB)

(MB) R3579932-1 10/09/20 11:29

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfate	U	0.594	5.00	

L1269526-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1269526-01 10/09/20 12:32 • (DUP) R3579932-3 10/09/20 12:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution %	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	635	640	20	0.758		15

L1269928-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1269928-05 10/09/20 17:35 • (DUP) R3579932-6 10/09/20 17:48

Analyte	Original Result mg/l	DUP Result mg/l	Dilution %	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfate	59.0	59.3	1	0.497		15

Laboratory Control Sample (LCS)

(LCS) R3579932-2 10/09/20 11:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfate	40.0	38.2	95.5	80.0-120	

L1269624-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1269624-06 10/09/20 14:05 • (MS) R3579932-4 10/09/20 14:44 • (MSD) R3579932-5 10/09/20 14:58

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 %
Sulfate	50.0	305	336	337	62.4	64.0	1	80.0-120	E.V.	E.V.	0.241	15

L1270072-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1270072-01 10/09/20 18:15 • (MS) R3579932-7 10/09/20 18:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution %	Rec. Limits %	MS Qualifier
Sulfate	50.0	8.62	61.2	105	1	80.0-120	



Method Blank (MB)

(MB) R3578864-1 10/07/20 12:55

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

Laboratory Control Sample (LCS)

(LCS) R3578864-2 10/07/20 12:58

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Iron,Dissolved	10.0	9.63	96.3	80.0-120	
Manganese,Dissolved	1.00	0.960	96.0	80.0-120	

L1261167-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1261167-02 10/07/20 13:01 • (MS) R3578864-4 10/07/20 13:07 • (MSD) R3578864-5 10/07/20 13:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Iron,Dissolved	10.0	9.62	96.2	95.1	96.2	95.1	1	75.0-125	1.13		1.13	20
Manganese,Dissolved	1.00	0.960	95.8	0.953	95.8	95.1	1	75.0-125	0.752		0.752	20



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.
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

E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
V	The sample concentration is too high to evaluate accurate spike recoveries.





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.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

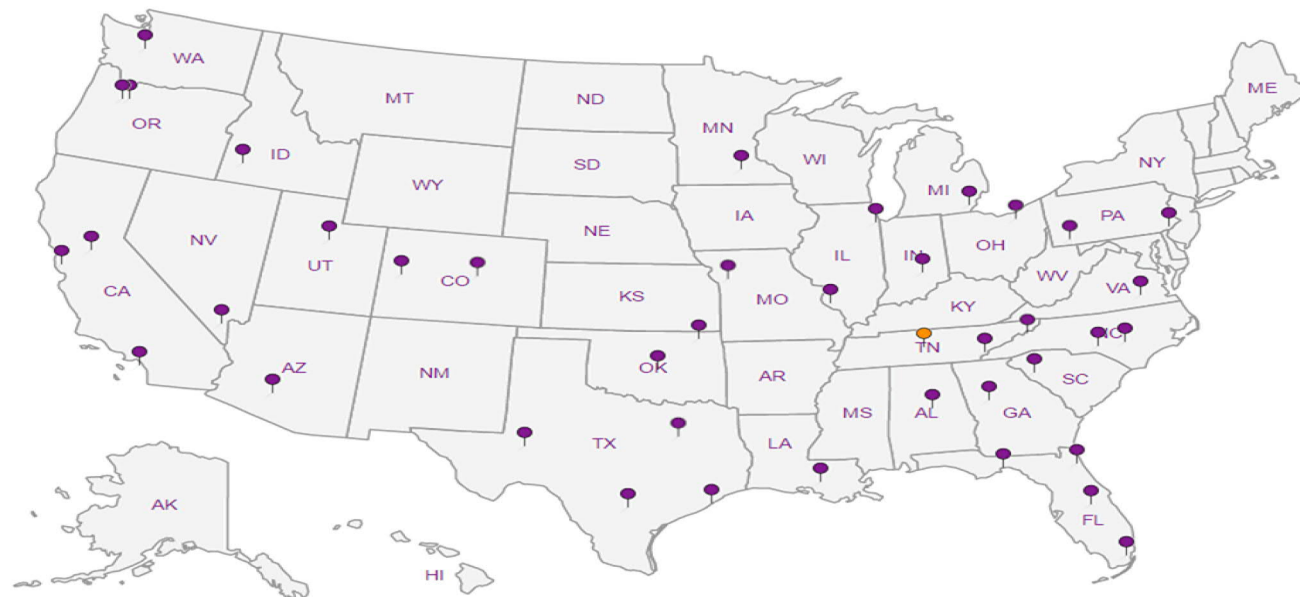
Third Party Federal Accreditations

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		

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HilCorp-Farmington, NM 382 Road 3100 Aztec, NM 87401		Billing Information: Clara Cardoza PO Box 61529 Houston, TX 77208		Chain of Custody Page ____ of ____	
Report to: Kurt Hoekstra		City/State Collected: Farmington B-Com No.1E		Analysis / Container / Preservative	
Project Description: Farmington B-Com No.1E		Client Project # HILCORANM-FARMINGTON		Pres Chk	
Phone: 505-486-9543		Site/Facility ID # FARMINGTON B-Com #1E		SDG # U269624	
Collected by (print): Kurt Hoekstra		Quote #		Table # H241	
Collected by (signature): Kurt Hoekstra		Rush? (Lab MUST Be Notified) Same Day _____ Five Day _____ Next Day _____ 5 Day (Rad Only) _____ Two Day _____ 10 Day (Rad Only) _____ Three Day _____		Acctnum: HILCORANM	
Packed on Ice N ____ Y <u>X</u>		Date Results Needed		Template: T146864	
Sample ID		Date		Prelogin: P800094	
Comp/Grab		Depth		PM: 823 - Olivia Studebaker	
Matrix *		No. of Cntrs		PB: 92520 MW	
GW		Time		Shipped Via: FedEx Ground	
MW-1		10-1 1:30 2		Remarks	
MW-2		10-2 8:56 1		Sample # (lab only)	
MW-3		10-2 9:40 1		-01	
MW-4		10-1 10:30 1		-02	
MW-5		10-1 9:45 1		-03	
MW-6		10-1 11:28 2		-04	
F - Filter		Date		-05	
SS - Soil		Date		-06	
AIR - Air		Date		-07	
GW - Groundwater		Date		-08	
B - Bioassay		Date		-09	
WW - WasteWater		Date		-10	
DW - Drinking Water		Date		-11	
OT - Other		Date		-12	
Relinquished by (Signature) Kurt Hoekstra		Time: 2:30		pH ____ Temp ____	
Relinquished by (Signature)		Time:		Flow ____ Other ____	
Relinquished by (Signature)		Time:		Samples returned via: UPS ____ FedEx ____ Courier ____	
Tracking # 9196 2504 4109		Received by (Signature)		Trip Blank Received: Yes / No HCL / MeOH TBR	
Received by (Signature)		Time: 9:15		Bottles Received: 8	
Received by (Signature)		Time:		If preservation required by Login: Date/Time	
Received by (Signature)		Time:		Hold:	
Condition: NCF / OK		Condition:		Sample Receipt Checklist	

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 20511

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 20511
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Review of 2020 Annual Groundwater Report: Content satisfactory 1. Continue quarterly sampling for groundwater quality in 2021 2. Continue quarterly sampling for monitoring wells MW-1 – MW-6 to monitor dissolved iron and dissolved manganese constituents 3. Submit the Annual Monitoring Report to the OCD no later than March 31, 2022	12/28/2021