

FREMONT ENVIRONMENTAL INC.

January 19, 2023

Mr. Daniel Peterson
Noble Energy Inc.
2115 117th Ave,
Greeley, CO 80634

Subject: **Groundwater Monitoring Report**
 Weezer G02-32 (Wellhead)
 API # 05-123-25720
 Weld County, Colorado
 Fremont Project No. C019-078
 Facility #336707, Remediation # 14376

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Groundwater Monitoring Report for the Weezer G02-32 wellhead site in Weld County, Colorado. The enclosed report describes monitoring and sampling efforts to assess groundwater quality at the site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.



Paul V. Henahan, P.E.
Senior Consultant

Enclosure

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE ENERGY INC.
WEEZER G02-32 (WELLHEAD), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C019-078

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-1	10/21/19	NA	NA	NA	100.00	2.98	97.02	NP
	03/17/20	2070	51.1	<20.0		3.27	96.73	NP
	07/16/20	648	<10.0	<20.0		3.88	96.12	NP
	10/29/20	202	<10.0	<10.0		3.51	96.49	NP
	01/22/21	1550	29.6	<10.0		3.60	96.40	NP
	04/27/21	1090	<10.0	<10.0		2.83	97.17	NP
	09/02/21	<2.0	<2.0	<2.0		3.21	96.79	NP
	12/06/21	1190	<2.0	<2.0		2.85	97.15	NP
	03/30/22	1720	90	<2.0		3.23	96.77	NP
	06/30/22	2000	1500	2		2.97	97.03	NP
	09/29/22	1360	<2.0	<2.0		3.14	96.86	NP
MW-2	10/21/19	NA	NA	NA	100.06	3.03	97.03	NP
	03/17/20	287	<10.0	<20.0		3.32	96.74	NP
	07/16/20	575	<10.0	<20.0		3.93	96.13	NP
	10/29/20	402	<10.0	<10.0		3.58	96.48	NP
	01/22/21	71	<10.0	<10.0		3.62	96.44	NP
	04/27/21	56.2	<10.0	<10.0		2.84	97.22	NP
	09/02/21	1350	<2.0	<2.0		3.27	96.79	NP
	12/06/21	590	70	<2.0		2.92	97.14	NP
	03/30/22	290	20	<2.0		3.30	96.76	NP
	06/30/22	1540	<2.0	<2.0		3.04	97.02	NP
	09/29/22	1650	<2.0	<2.0		3.22	96.84	NP
MW-3	10/21/19	NA	NA	NA	99.80	2.83	96.97	NP
	03/17/20	141	<10.0	<20.0		3.07	96.73	NP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-3	07/16/20	944	<10.0	<20.0	99.80	3.68	96.12	NP
	10/29/20	180	<10.0	<10.0		3.35	96.45	NP
	01/22/21	307	<10.0	<10.0		3.37	96.43	NP
	04/28/21	181	<10.0	<10.0		2.35	97.45	NP
	09/02/21	110	<2.0	<2.0		3.01	96.79	NP
	12/06/21	90	<2.0	<2.0		2.64	97.16	NP
	03/30/22	240	30	<2.0		3.28	96.52	NP
	06/30/22	770	<2.0	<2.0		2.75	97.05	NP
	09/29/22	1290	110	80		2.93	96.87	NP
MW-4	10/21/19	NA	NA	NA	99.94	2.97	96.97	NP
	03/17/20	8960	1690	24.2		3.21	96.73	NP
	07/16/20	6350	1320	<20.0		3.83	96.11	NP
	10/29/20	5970	1070	28.6		3.48	96.46	NP
	01/22/21	5620	1330	15.5		3.65	96.29	NP
	04/27/21	2110	815	194		2.79	97.15	NP
	09/02/21	8880	380	<2.0		3.21	96.73	NP
	12/06/21	8590	1980	<2.0		2.82	97.12	NP
	03/30/22	6750	1450	<2.0		3.03	96.91	NP
	06/30/22	8940	1920	90		2.94	97.00	NP
	09/29/22	8720	1860	90		3.07	96.87	NP
MW-5	10/21/19	NA	NA	NA	99.87	2.88	96.99	NP
	03/17/20	9710	4310	733		3.13	96.74	NP
	07/16/20	4680	724	43.0		3.78	96.09	NP
	10/29/20	4890	1180	136.0		3.47	96.40	NP
	01/22/21	2090	608	120.0		3.48	96.39	NP
	04/27/21	3330	1150	255.0		2.51	97.36	NP
	09/02/21	4340	<2.0	<2.0		3.13	96.74	NP
	12/06/21	5440	1230	70.0		2.59	97.28	NP
	03/30/22	9660	460	<2.0		3.13	96.74	NP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-5	06/30/22	11950	3630	630	99.87	2.87	97.00	NP
	09/29/22	9350	2250	200		3.06	96.81	NP
MW-6	08/21/20	<10.0	<13.0	<18.6	99.12	4.03	95.09	NP
	10/29/20	118	14.6	<10.0		2.82	96.30	NP
	01/21/21	12.1	<10.0	<10.0		2.83	96.29	NP
	04/27/21	<10.0	<10.0	<10.0		2.10	97.02	NP
	09/02/21	<2.0	<2.0	<2.0		2.75	96.37	NP
	12/06/21	<2.0	<2.0	<2.0		2.10	97.02	NP
	03/30/22	60	10	<2.0		2.46	96.66	NP
	06/29/22	<2.0	<2.0	<2.0		2.52	96.60	NP
	09/29/22	<2.0	<2.0	<2.0		2.49	96.63	NP
MW-7	08/21/20	<10.0	<13.0	<18.6	99.39	4.21	95.18	NP
	10/29/20	<6.6	<5.6	<10.0		2.92	96.47	NP
	01/21/21	<10.0	<10.0	<10.0		2.97	96.42	NP
	04/27/21	<10.0	<10.0	<10.0		2.25	97.14	NP
	09/02/21	<2.0	<2.0	<2.0		2.61	96.78	NP
	12/06/21	<2.0	<2.0	<2.0		2.23	97.16	NP
	03/30/22	<2.0	<2.0	<2.0		2.65	96.74	NP
	06/29/22	<2.0	<2.0	<2.0		2.59	96.80	NP
	09/29/22	<2.0	<2.0	<2.0		2.42	96.97	NP
MW-8	08/21/20	135	<13.0	<18.6	99.71	4.41	95.30	NP
	10/29/20	115	<10.0	<10.0		3.08	96.63	NP
	01/21/21	158	<10.0	<10.0		3.18	96.53	NP
	04/27/21	147	<10.0	<10.0		2.43	97.28	NP
	09/02/21	<2.0	<2.0	<2.0		2.82	96.89	NP
	12/06/21	<2.0	<2.0	<2.0		2.40	97.31	NP
	03/30/22	240	70	40		2.86	96.85	NP
	06/29/22	<2.0	<2.0	<2.0		2.75	96.96	NP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-8	09/29/22	<2.0	<2.0	<2.0	99.71	2.56	97.15	NP
MW-9	08/21/20	2950	<13.0	<18.6	98.84	4.56	94.28	NP
	10/29/20	994	<10.0	<10.0		3.21	95.63	NP
	01/21/21	2140	127	<10.0		3.28	95.56	NP
	04/27/21	3110	317	42.9		2.55	96.29	NP
	09/02/21	2910	<2.0	<2.0		3.11	95.73	NP
	12/06/21	600	<2.0	<2.0		2.64	96.20	NP
	03/30/22	370	<2.0	<2.0		3.03	95.81	NP
	06/29/22	140	<2.0	<2.0		2.96	95.88	NP
	09/29/22	40	<2.0	<2.0		2.61	96.23	NP
MW-10	08/21/20	34.1	<13.0	<18.6	99.89	4.61	95.28	NP
	10/29/20	<5.8	<10.0	<10.0		3.27	96.62	NP
	01/21/21	<10.0	<10.0	<10.0		3.31	96.58	NP
	04/27/21	<10.0	<10.0	<10.0		2.59	97.30	NP
	09/02/21	DES	DES	DES		DES	DES	DES
MW-11	08/21/20	<10.0	<13.0	<18.6	99.18	4.11	95.07	NP
	10/29/20	<10.0	<10.0	<10.0		2.75	96.43	NP
	01/22/21	<10.0	<10.0	<10.0		2.75	96.43	NP
	04/27/21	<10.0	<10.0	<10.0		1.67	97.51	NP
	09/02/21	<2.0	<2.0	<2.0		2.66	96.52	NP
	12/06/21	<2.0	<2.0	<2.0		2.07	97.11	NP
	03/30/22	90	<2.0	<2.0		2.35	96.83	NP
	06/29/22	<2.0	<2.0	<2.0		2.52	96.66	NP
	09/29/22	130	<2.0	<2.0		2.81	96.37	NP
MW-12	08/21/20	<10.0	<13.0	<18.6	98.88	3.94	94.94	NP
	10/29/20	<10.0	<10.0	<10.0		2.67	96.21	NP
	01/21/21	<10.0	<10.0	<10.0		2.64	96.24	NP
	04/27/21	<10.0	<10.0	<10.0		1.22	97.66	NP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-12	09/02/21	INA	INA	INA	98.88	INA	INA	INA
	12/06/21	<2.0	<2.0	<2.0		2.19	96.69	NP
	03/30/22	30	<2.0	<2.0		2.26	96.62	NP
	06/29/22	<2.0	<2.0	<2.0		2.39	96.49	NP
	09/29/22	<2.0	<2.0	<2.0		2.27	96.61	NP
MW-13	01/21/21	2360	17.3	<10.0	99.26	2.61	96.65	NP
	04/27/21	1440	41.4	<10.0		1.87	97.39	NP
	09/02/21	2510	<2.0	<2.0		2.43	96.83	NP
	12/06/21	2930	<2.0	<2.0		1.91	97.35	NP
	03/30/22	4970	300	<2.0		2.27	96.99	NP
	06/29/22	6210	190	<2.0		2.22	97.04	NP
	09/29/22	4410	220	<2.0		2.10	97.16	NP
MW-14	01/21/21	<10.0	<10.0	<10.0	98.71	1.98	96.73	NP
	04/27/21	<10.0	<10.0	<10.0		1.29	97.42	NP
	09/02/21	<2.0	<2.0	<2.0		1.75	96.96	NP
	12/06/21	<2.0	<2.0	<2.0		1.26	97.45	NP
	03/30/22	10	<2.0	<2.0		1.67	97.04	NP
	06/29/22	<2.0	<2.0	<2.0		1.49	97.22	NP
	09/29/22	<2.0	<2.0	<2.0		1.39	97.32	NP
MW-15	01/21/21	<10.0	<10.0	<10.0	99.51	2.81	96.70	NP
	04/27/21	<10.0	<10.0	<10.0		2.08	97.43	NP
	09/02/21	<2.0	<2.0	<2.0		2.46	97.05	NP
	12/06/21	<2.0	<2.0	<2.0		2.05	97.46	NP
	03/30/22	10	<2.0	<2.0		2.49	97.02	NP
	06/29/22	<2.0	<2.0	<2.0		2.24	97.27	NP
	09/29/22	<2.0	<2.0	<2.0		2.15	97.36	NP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
MW-16	01/21/21	<10.0	<10.0	<10.0	99.23	2.56	96.67	NP
	04/27/21	<10.0	<10.0	<10.0		1.83	97.40	NP
	09/02/21	<2.0	<2.0	<2.0		2.19	97.04	NP
	12/06/21	<2.0	<2.0	<2.0		1.79	97.44	NP
	03/30/22	20	<2.0	<2.0		2.25	96.98	NP
	06/29/22	<2.0	<2.0	<2.0		1.96	97.27	NP
	09/29/22	<2.0	<2.0	<2.0		1.90	97.33	NP
MW-17	01/21/21	1240	<10.0	<10.0	99.09	2.54	96.55	NP
	04/27/21	563	<10.0	<10.0		1.85	97.24	NP
	09/02/21	<2.0	<2.0	<2.0		2.13	96.96	NP
	12/06/21	60	<2.0	<2.0		1.75	97.34	NP
	03/30/22	300	<2.0	<2.0		2.22	96.87	NP
	06/29/22	30	<2.0	<2.0		1.99	97.10	NP
	09/29/22	<2.0	<2.0	<2.0		1.88	97.21	NP
Weezer G3-21 (surface)	12/17/19	14200	6070	2850	NAP	NAP	NAP	NAP
	08/28/20	447	169	67.5	NAP	NAP	NAP	NAP
	07/30/21	253	45.6	<10.0	NAP	NAP	NAP	NAP
Weezer G3-22 (surface) aka G2-32, G2-22	12/17/19	16400	6750	3180	NAP	NAP	NAP	NAP
	08/28/20	1340	416	154	NAP	NAP	NAP	NAP
	07/30/21	Insuffcient	Insuffcient	Insufficient	NAP	NAP	NAP	NAP
Weezer G3-24 (surface)	12/17/19	3320	1020	437	NAP	NAP	NAP	NAP
	08/28/20	2570	1050	439	NAP	NAP	NAP	NAP
	07/30/21	20.7	<10.0	<10.0	NAP	NAP	NAP	NAP

SAMPLE LOCATION	DATE	METHANE (µg/L)	ETHANE (µg/L)	PROPANE (µg/L)	TOC ELEVATION (feet)	DEPTH TO GROUND WATER (ft)	GROUND WATER ELEVATION (ft)	FREE PRODUCT THICKNESS (ft)
Weezer G3-23 (surface) aka G3-33	12/17/19	12400	5500	2580	NAP	NAP	NAP	NAP
	08/28/20	5610	2340	100	NAP	NAP	NAP	NAP
	07/30/21	109	22.1	<10.0	NAP	NAP	NAP	NAP
	06/30/22	7420	2790	1140	NAP	NAP	NAP	
Weezer G2-33 (surface)	08/28/20	3000	1170	472	NAP	NAP	NAP	NAP
	07/30/21	38.9	<10.0	<10.0	NAP	NAP	NAP	NAP
Table 915-1 Standards		NA	NA	NA				

Bold face values exceed the COGCC standards

NP - No Free Product

NA - Not Analyzed

NAP - Not Applicable

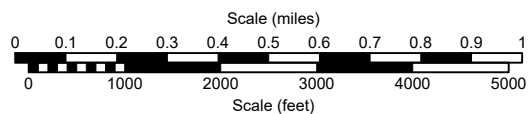
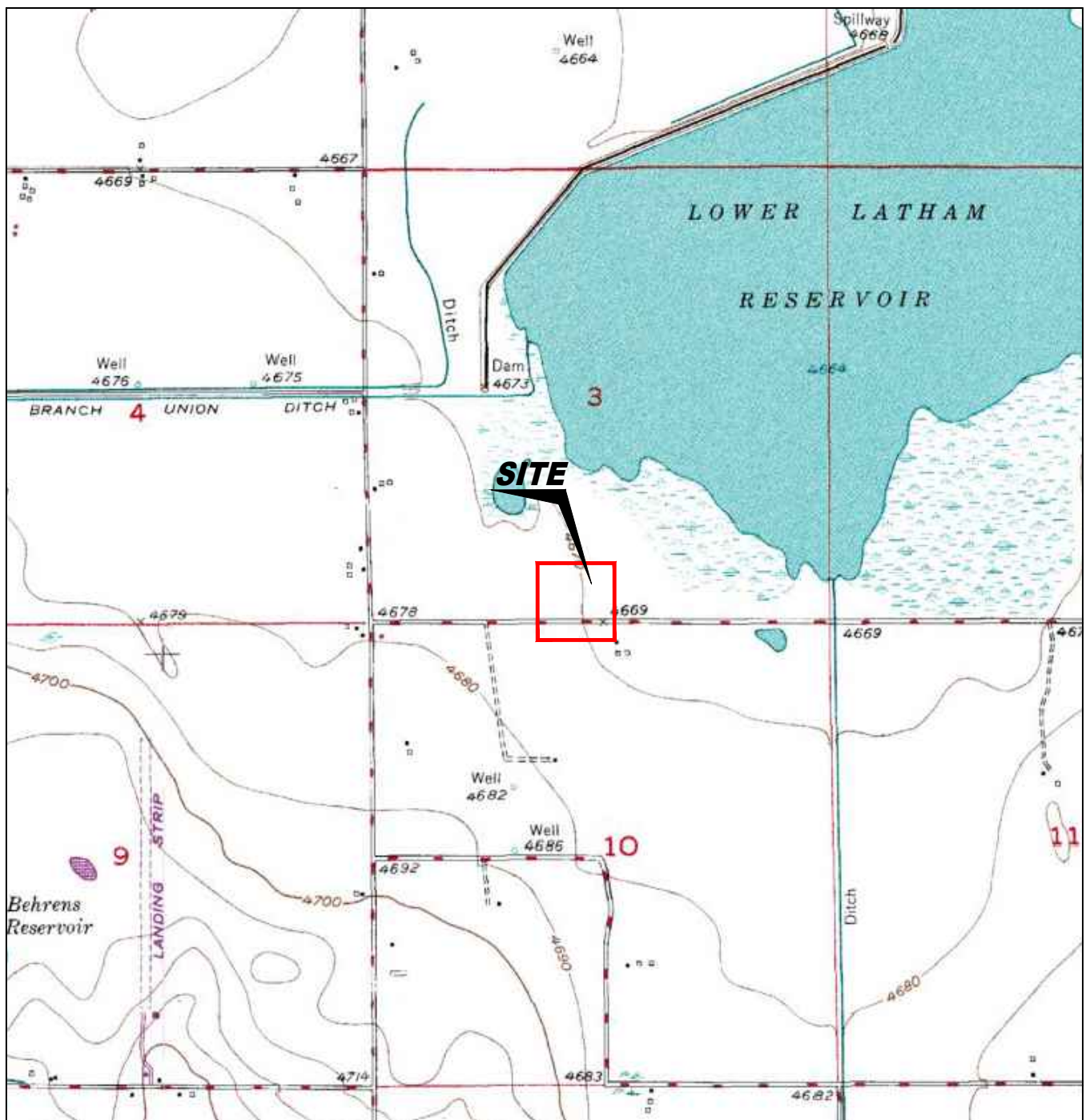
INA - Inaccessible

DES - Destroyed

TABLE 2
SUMMARY OF SOIL VAPOR CHEMISTRY DATA
NOBLE ENERGY INC.
WEEZER G02-32 (WELLHEAD), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C019-078

SAMPLE LOCATION	DATE SAMPLED	TOC ELEVATION (feet)	METHANE (%)	ETHANE (%)	PROPANE (%)
VP-2	8/21/2020	99.39	0.00028	<0.0010	<0.0010
	1/21/2021		<0.00022	<0.0022	<0.0022
	4/28/2021		0.00082	<0.0017	<0.0017
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		<0.005	<0.005	<0.005
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005
VP-3	8/21/2020	99.72	0.11	0.014	<0.0019
	1/21/2021		<0.00014	<0.0014	<0.0014
	4/28/2021		9.2	1.5	0.31
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		0.176	0.030	0.018
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005
VP-4	8/21/2020	99.64	0.0023	<0.0010	<0.0010
	1/21/2021		0.00021	<0.0015	<0.0015
	4/28/2021		0.22	0.016	0.0035
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		0.013	<0.005	<0.005
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005


SAMPLE LOCATION	DATE SAMPLED	TOC ELEVATION (feet)	METHANE (%)	ETHANE (%)	PROPANE (%)
VP-19	1/21/2021	NM	<0.00021	<0.002	<0.002
	4/28/2021		0.00021	<0.0016	<0.0016
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		NS	NS	NS
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005
VP-20	1/21/2021	NM	<0.00023	<0.0023	<0.0023
	4/28/2021		0.00018	<0.0017	<0.0017
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		<0.005	<0.005	<0.005
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005
VP-21	1/21/2021	NM	<0.00022	<0.0022	<0.0022
	4/28/2021		<0.00017	<0.0017	<0.0017
	9/2/2021		<0.005	<0.005	<0.005
	12/17/2021		<0.005	<0.005	<0.005
	3/30/2022		<0.005	<0.005	<0.005
	6/30/2022		<0.005	<0.005	<0.005
	9/29/2022		<0.005	<0.005	<0.005

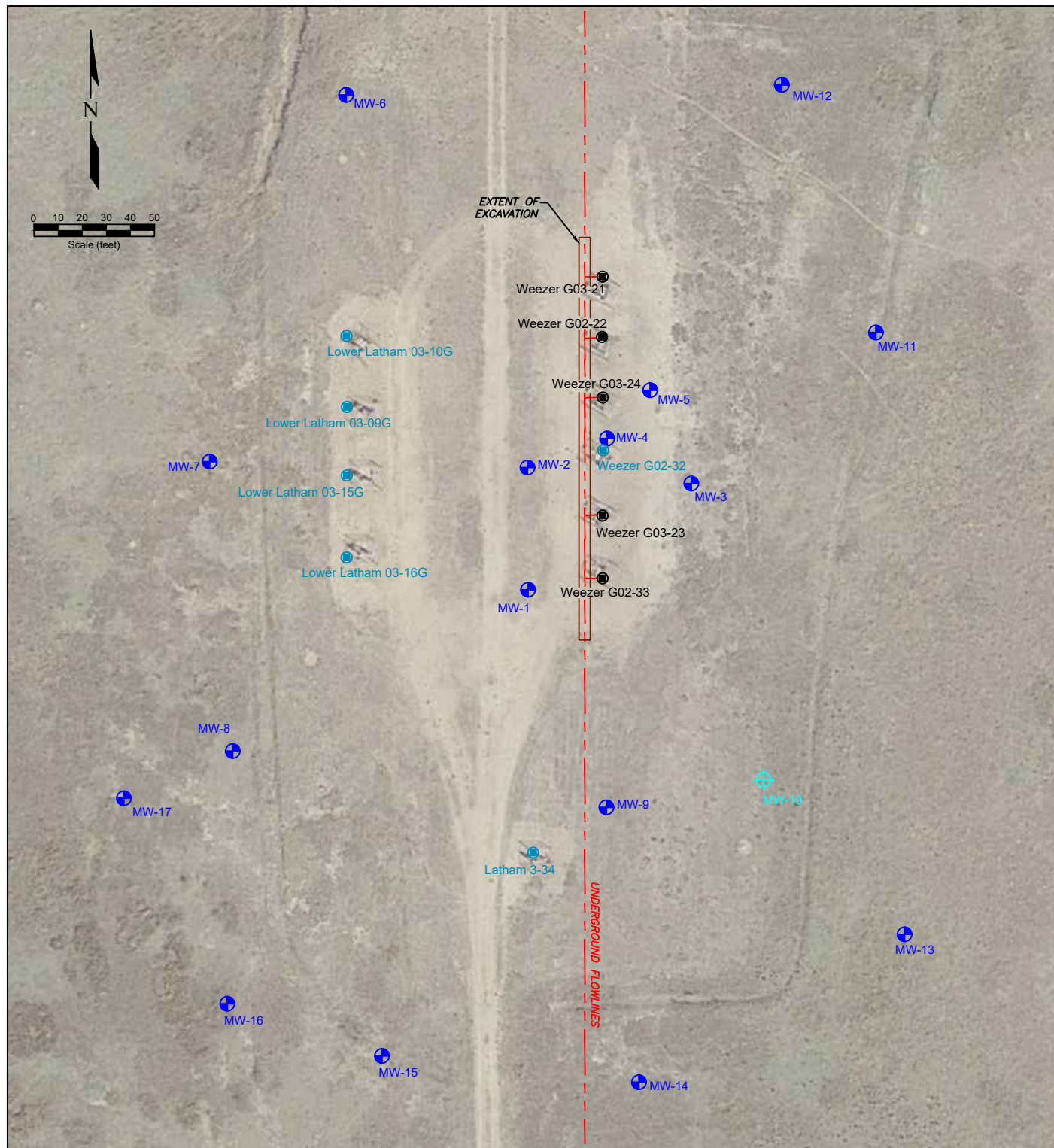


USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY, INC. ~ WEEZER G02-32
 SESW Section 3, T4N, R65W, 6th PM
 Weld County, Colorado
 40.33602°, -104.65135°

Project No. C019-078	Prepared by TA	Drawn by TA	
Date 12/12/2022	Reviewed by EB	Filename 19078T	



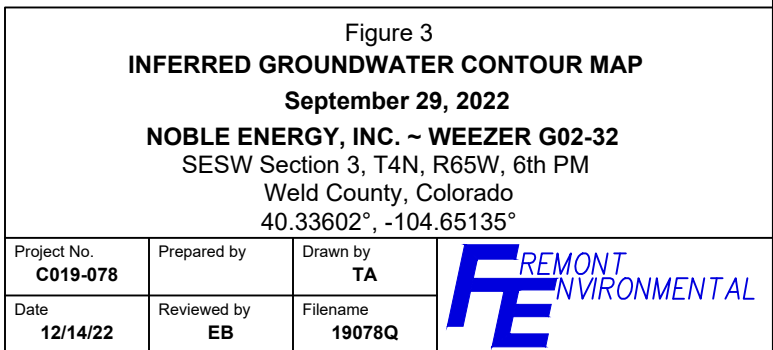
LEGEND

	WELL HEAD LOCATION
	MONITORING WELL LOCATION
	DESTROYED MONITORING WELL LOCATION
	FORMER FACILITY
	UNDERGROUND FLOW LINE
	EXTENT OF EXCAVATION

Figure 2
SITE MAP

NOBLE ENERGY, INC. ~ WEEZER G02-32
 SESW Section 3, T4N, R65W, 6th PM
 Weld County, Colorado
 40.33602°, -104.65135°

Project No. C019-078	Prepared by TA	Drawn by TA	
Date 12/12/2022	Reviewed by EB	Filename 19078Q	



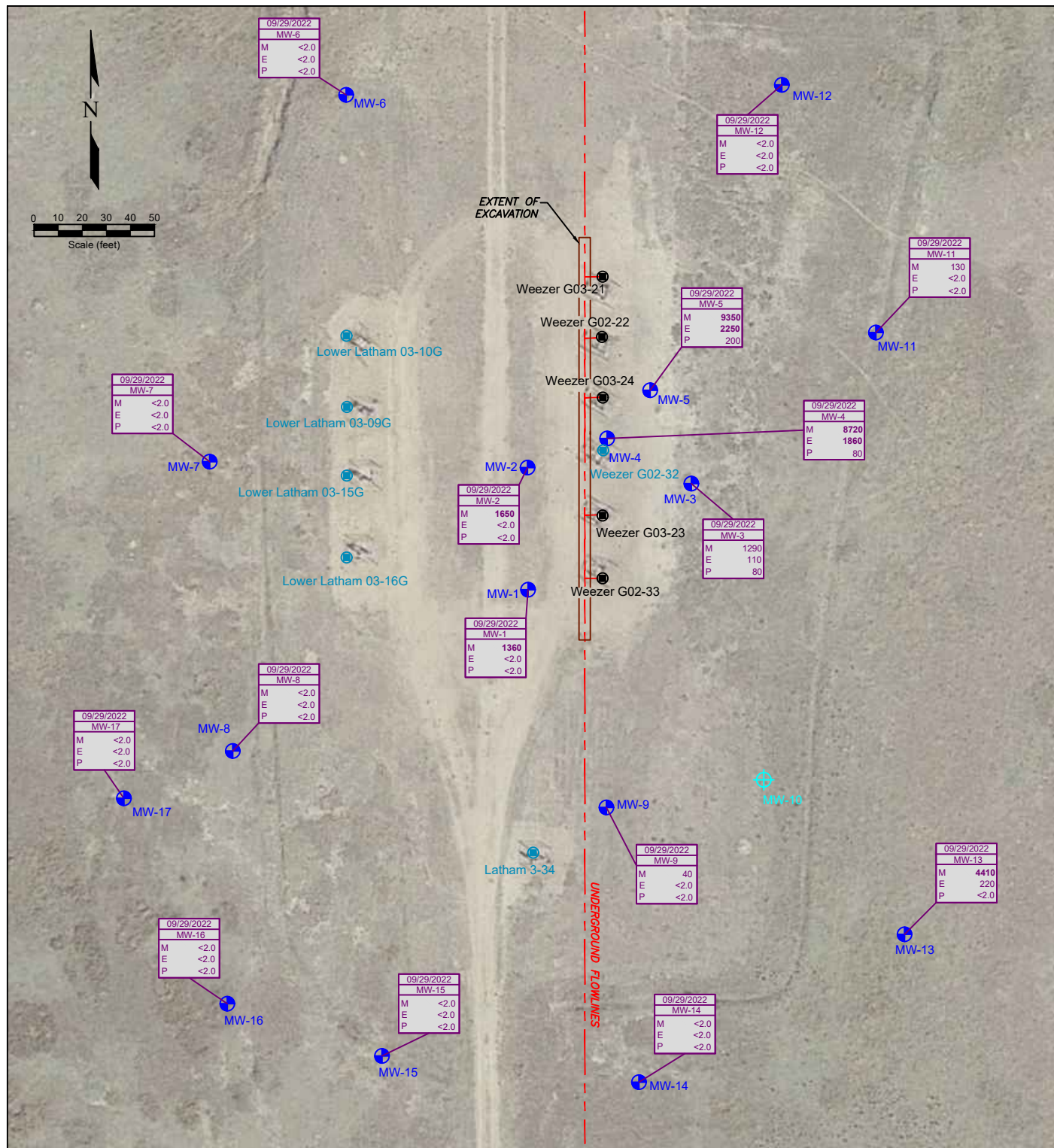
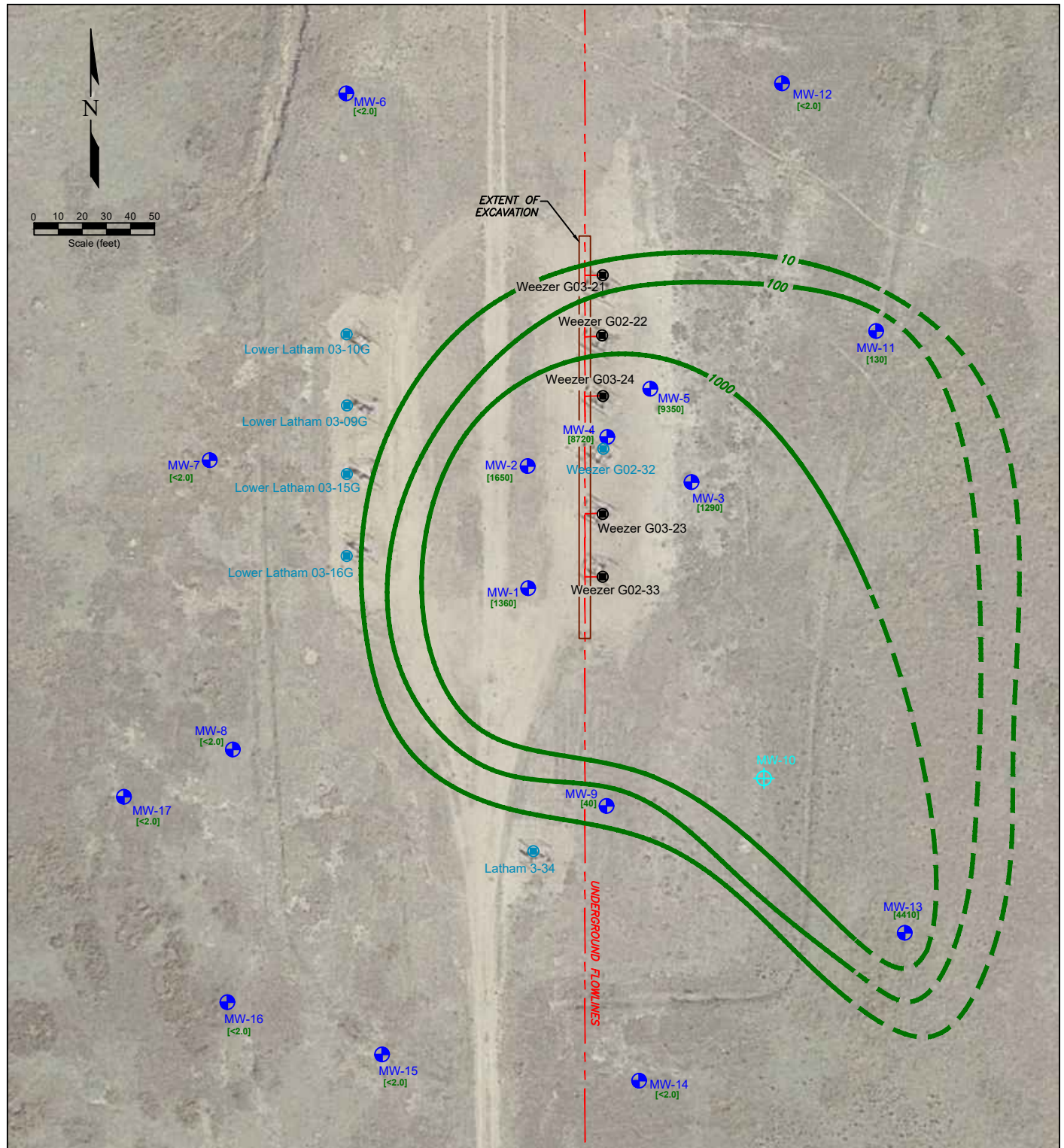


Figure 4
GROUNDWATER CHEMISTRY MAP
 September 29, 2022
NOBLE ENERGY, INC. ~ WEEZER G02-32
 SESW Section 3, T4N, R65W, 6th PM
 Weld County, Colorado
 40.33602°, -104.65135°

Project No. C019-078	Prepared by TA	Drawn by TA
Date 12/12/22	Reviewed by EB	Filename 19078Q





LEGEND

- WELL HEAD LOCATION
- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL LOCATION
- FORMER FACILITY
- UNDERGROUND FLOW LINE
- EXTENT OF EXCAVATION

1000
 5970

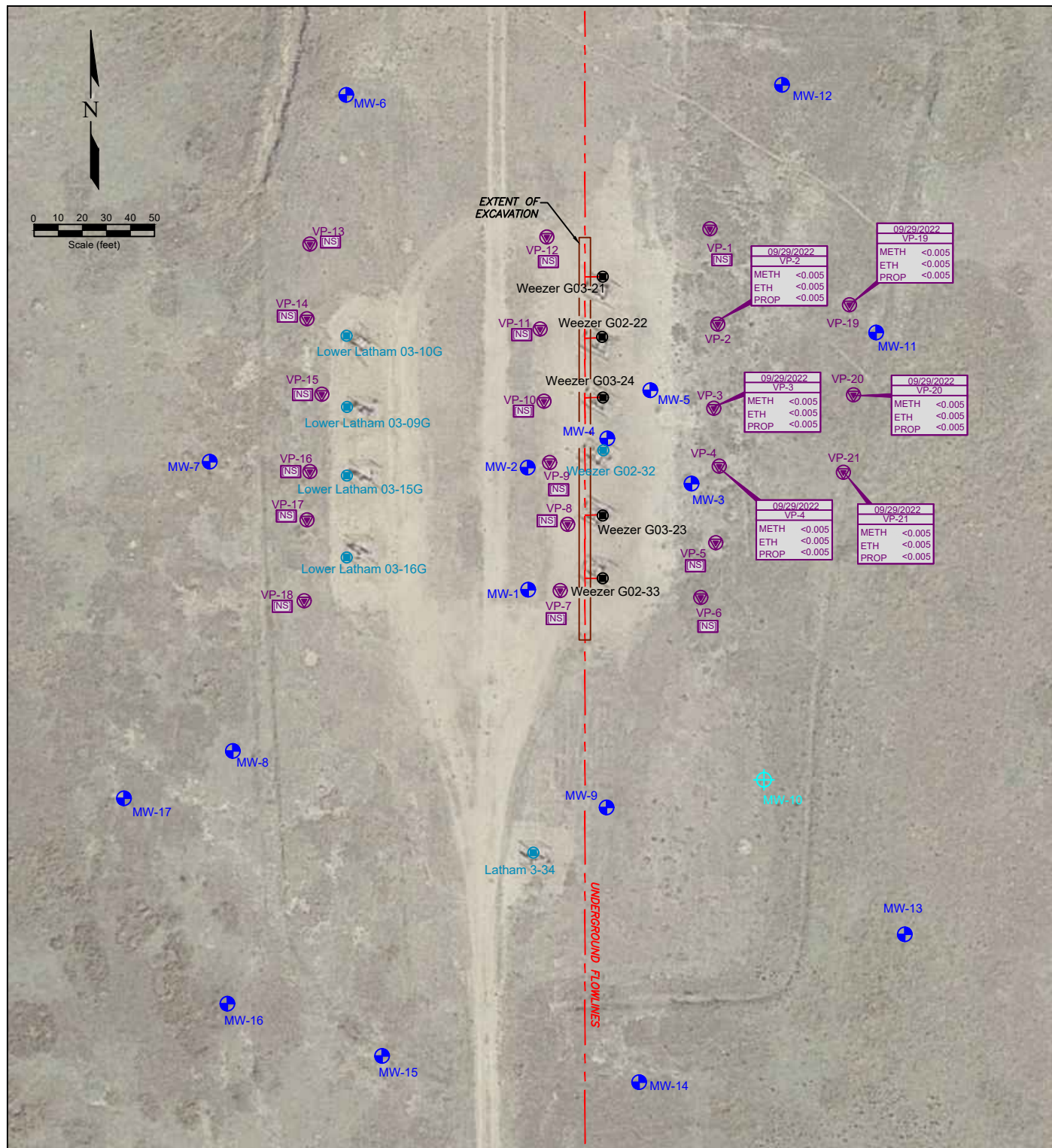
METHANE ISO-CONCENTRATION
 (dashed where inferred)
 METHANE CONCENTRATION (ug/L)

Figure 5
METHANE ISO-CONCENTRATION MAP
 September 29, 2022

NOBLE ENERGY, INC. ~ WEEZER G02-32
 SESW Section 3, T4N, R65W, 6th PM
 Weld County, Colorado
 40.33602°, -104.65135°

Project No. C019-078	Prepared by TA	Drawn by TA
Date 12/14/22	Reviewed by EB	Filename 19078Q





LEGEND








	WELL HEAD LOCATION	<table><tr><td>06/30/2022</td><td>VP-2</td></tr><tr><td>METH</td><td><0.005</td></tr><tr><td>ETH</td><td><0.005</td></tr><tr><td>PROP</td><td><0.005</td></tr></table>	06/30/2022	VP-2	METH	<0.005	ETH	<0.005	PROP	<0.005	DATE SAMPLED SAMPLE ID METHANE (mol %) ETHANE (mol %) PROPANE (mol %)
06/30/2022	VP-2										
METH	<0.005										
ETH	<0.005										
PROP	<0.005										
	MONITORING WELL LOCATION										
	DESTROYED MONITORING WELL LOCATION										
	FORMER FACILITY		NOT SAMPLED								
	UNDERGROUND FLOW LINE										
	EXTENT OF EXCAVATION										

Figure 6

SOIL VAPOR CHEMISTRY MAP September 29, 2022

NOBLE ENERGY, INC. ~ WEEZER G02-32
SESW Section 3, T4N, R65W, 6th PM
Weld County, Colorado
40.33602°, -104.65135°

Project No. C019-078	Prepared by TA	Drawn by TA	
Date 12/12/22	Reviewed by EB	Filename 19078Q	



dig
Dolan Integration Group

Geochemistry for Energy

11025 Dover Street Unit 800
Westminster, CO 80021
p: 303.531.2030

Analytical Report

Dissolved Methane, Ethane and Propane Analysis

Job #: 22098404-22098419
Lab #: DIG-029397-029419
Client: Fremont Environmental Inc.
Sample Name(s): MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8,
MW-9, MW-11, MW-12, MW-13, MW-14, MW-15,
MW-16, MW-17

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Analytical Report



Job #: 22098404
 Lab #: DIG-029397
 Client: Fremont Environmental Inc.
 Sample Name: MW-1
 Date Sampled: 09/29/22
 Time Sampled: 13:03
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	151446	71.67	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	34145	16.16	-	-	-	-	
Carbon Dioxide (CO ₂)	21814	10.32	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	3895	1.84	100.00	1.36	-25.9	-63	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	3895
Gas Wetness (mol % C ₂ +C ₁ +))	0.00
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098405
 Lab #: DIG-029398
 Client: Fremont Environmental Inc.
 Sample Name: MW-2
 Date Sampled: 09/29/22
 Time Sampled: 12:40
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	77149	65.33	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	16933	14.34	-	-	-	-	
Carbon Dioxide (CO ₂)	19721	16.7	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	4284	3.63	100.00	1.65	-24.4	50	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	4284
Gas Wetness (mol % C ₂ +C ₁ +))	0.00
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098406
 Lab #: DIG-029399
 Client: Fremont Environmental Inc.
 Sample Name: MW-3
 Date Sampled: 09/29/22
 Time Sampled: 12:14
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	67742	62.65	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	15484	14.32	-	-	-	-	
Carbon Dioxide (CO ₂)	21348	19.74	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	3330	3.08	93.80	1.29	-25.9	-71	
Ethane (C ₂ H ₆)	150	0.14	4.21	0.11	na	na	
Propane (C ₃ H ₈)	71	0.07	1.99	0.08	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	3550
Gas Wetness (mol % C ₂ +C ₁ +))	6.20
C ₁ /(C ₂ +C ₃) (mol/mol)	15

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

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HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098407
 Lab #: DIG-029400
 Client: Fremont Environmental Inc.
 Sample Name: MW-4
 Date Sampled: 09/29/22
 Time Sampled: 11:45
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	46041	45.32	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	14534	14.31	-	-	-	-	
Carbon Dioxide (CO ₂)	13343	13.13	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	24857	24.47	89.80	8.72	-43.7	-160	
Ethane (C ₂ H ₆)	2728	2.68	9.85	1.86	na	na	
Propane (C ₃ H ₈)	96	0.09	0.35	0.09	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	27680
Gas Wetness (mol % C ₂ +/C ₁ +))	10.20
C ₁ /(C ₂ +C ₃) (mol/mol)	9

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098408
 Lab #: DIG-029401
 Client: Fremont Environmental Inc.
 Sample Name: MW-5
 Date Sampled: 09/29/22
 Time Sampled: 11:10
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	41804	45.57	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	5800	6.32	-	-	-	-	
Carbon Dioxide (CO ₂)	13842	15.09	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	26760	29.17	88.37	9.35	-45.1	-205	
Ethane (C ₂ H ₆)	3312	3.61	10.94	2.25	na	na	
Propane (C ₃ H ₈)	210	0.23	0.69	0.20	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	30281
Gas Wetness (mol % C ₂ +C ₁ +))	11.63
C ₁ /(C ₂ +C ₃) (mol/mol)	8

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098409
 Lab #: DIG-029402
 Client: Fremont Environmental Inc.
 Sample Name: MW-6
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	54222	68.77	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	12942	16.42	-	-	-	-	
Carbon Dioxide (CO ₂)	11678	14.81	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +/C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098410
 Lab #: DIG-029403
 Client: Fremont Environmental Inc.
 Sample Name: MW-7
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	57973	74.28	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	15333	19.65	-	-	-	-	
Carbon Dioxide (CO ₂)	4737	6.07	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098411
 Lab #: DIG-029404
 Client: Fremont Environmental Inc.
 Sample Name: MW-8
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	55756	73.70	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	16083	21.26	-	-	-	-	
Carbon Dioxide (CO ₂)	3810	5.04	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098412
 Lab #: DIG-029405
 Client: Fremont Environmental Inc.
 Sample Name: MW-9
 Date Sampled: 09/29/22
 Time Sampled: 13:30
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments: Mass Spec Date: 10/11/22

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	55375	71.91	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	9853	12.79	-	-	-	-	
Carbon Dioxide (CO ₂)	11676	15.16	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	102	0.13	100.00	0.04	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	102
Gas Wetness (mol % C ₂ +/C ₁ +)	0.00
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098413
 Lab #: DIG-029406
 Client: Fremont Environmental Inc.
 Sample Name: MW-11
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	55347	61.26	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	12309	13.62	-	-	-	-	
Carbon Dioxide (CO ₂)	22322	24.71	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	366	0.41	100.00	0.13	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	366
Gas Wetness (mol % C ₂ +C ₁ +)	0.00
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098414
 Lab #: DIG-029407
 Client: Fremont Environmental Inc.
 Sample Name: MW-12
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	52956	62.56	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	13764	16.26	-	-	-	-	
Carbon Dioxide (CO ₂)	17932	21.18	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +)	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098415
 Lab #: DIG-029408
 Client: Fremont Environmental Inc.
 Sample Name: MW-13
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	45586	54.04	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	14827	17.58	-	-	-	-	
Carbon Dioxide (CO ₂)	12248	14.52	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	11398	13.51	97.50	4.41	na	na	
Ethane (C ₂ H ₆)	292	0.35	2.50	0.22	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	11690
Gas Wetness (mol % C ₂ +/C ₁ +)	2.50
C ₁ /(C ₂ +C ₃) (mol/mol)	39

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098416
 Lab #: DIG-029409
 Client: Fremont Environmental Inc.
 Sample Name: MW-14
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	48486	62.96	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	11645	15.12	-	-	-	-	
Carbon Dioxide (CO ₂)	16877	21.92	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098417
 Lab #: DIG-029410
 Client: Fremont Environmental Inc.
 Sample Name: MW-15
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/07/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	47815	71.75	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	14871	22.32	-	-	-	-	
Carbon Dioxide (CO ₂)	3953	5.93	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098418
 Lab #: DIG-029411
 Client: Fremont Environmental Inc.
 Sample Name: MW-16
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/08/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	48525	72.47	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	14504	21.66	-	-	-	-	
Carbon Dioxide (CO ₂)	3930	5.87	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +)	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Analytical Report



Job #: 22098419
 Lab #: DIG-029412
 Client: Fremont Environmental Inc.
 Sample Name: MW-17
 Date Sampled: 09/28/22
 Time Sampled:
 Sample Description: 40ml Vial
 Sampling Notes:
 Date Received: 09/30/22
 Date Analyzed: Gas Composition: 10/08/22
 Date Reported: 10/14/22
 Comments:

Measured Values:	Measured ppm	Analyte mol % ^a	HC mol %	Total Conc mg/L ^c	$\delta^{13}\text{C}$ ‰ VPDB	δD ‰ VSMOW	Comments
Nitrogen (N ₂)	49338	67.70	-	-	-	-	
Oxygen + Argon (O ₂ +Ar)	16582	22.75	-	-	-	-	
Carbon Dioxide (CO ₂)	6957	9.55	-	-	-	-	
Helium (He) ^b	na	na	-	-	-	-	Helium added to create headspace.
Hydrogen (H ₂)	na	na	-	-	-	-	Helium interference
Methane (CH ₄)	nd	nd	nd	na	na	na	
Ethane (C ₂ H ₆)	nd	nd	nd	na	na	na	
Propane (C ₃ H ₈)	nd	nd	nd	na	na	na	
iso-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
n-Butane (C ₄ H ₁₀)	nd	nd	nd	na	na	na	
iso-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
n-Pentane (C ₅ H ₁₂)	nd	nd	nd	na	na	na	
Hexanes + (C ₆ H ₁₄)	nd	nd	nd	na	na	na	

Calculated Values:	
Total HCs (ppm)	0
Gas Wetness (mol % C ₂ +C ₁ +))	
C ₁ /(C ₂ +C ₃) (mol/mol)	

^a Analyte concentrations normalized to 100% (Mol. % is approximately equal to Vol. %)

^b Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

HC= Hydrocarbons

nd = not detected

na = not analyzed

Stable isotope results based on multi-point laboratory calibration

Error $\delta^{13}\text{C}$ < 0.5 ‰

Error δD < 5.0 ‰

Chain of Custody Form



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Office and Lab 11025 Dover St • Ste 800 • Westminster, CO 80021

JOB 22098404 - 22098425

DIG-029397-029418

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G03-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time**: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	MW-1			Water									
	MW-2			Water									
	MW-3			Water									
	MW-4			Water									
	MW-5			Water									
	MW-6			Water									
	MW-7			Water									
	MW-8			Water									
	MW-9			Water									
	MW-11			Water									

Chain of Custody Record

Comments: Please send report as a single combine .pdf. Thanks.

Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
<i>Ethan Black</i>	Fremont Env.	9/24/22	1637	<i>Bob Gilman</i>	DIG	9/24/22	1637

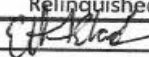
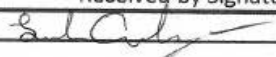
*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G02-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time**: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	MW-12			Water									
	MW-13			Water									
	MW-14			Water									
	MW-15			Water									
	MW-16			Water									
	MW-17			Water									
	VP-02			Other									
	VP-03			Other									
	VP-04			Other									
	VP-19			Other									

Chain of Custody Record				Comments:			
Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
	Fremont Env	9/29/22	1637		DIG	9/29/22	1637

*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.



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Office and Lab 11025 Dover St • Ste 800 • Westminster, CO 80021

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G03-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time **: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	VP-20			Other									
	VP-21			Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									

Chain of Custody Record				Comments:			
Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
<i>Ethan Black</i>	Fremont Env.	9/24/22	1637	<i>Sam Gaby</i>	DIG	9/29/22	1637

*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.



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Geochemistry for Energy

11025 Dover Street Unit 800
Westminster, CO 80021
p: 303.531.2030

Hydrocarbon Gas Composition and Stable Isotopes Data and Interpretation

Job #: 220984520-22098425
Lab #: Various
Client: Fremont Environmental Inc.
Well Name: VP-02, VP-03, VP-04, VP-19, VP-20, VP-21

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Client/Well Name:
Job #:
Lab #:

Fremont Environmental Inc.
220984520-22098425
Various

SAMPLE INFORMATION					
Job Number	Lab Number	Well ID	Sample Type	Sample Date	Sample Time
22098420	DIG-029413	VP-02 Soil gas	Soil gas	9/29/2022	2:00:00 PM
22098421	DIG-029414	VP-03 Soil gas	Soil gas	9/29/2022	1:50:00 PM
22098422	DIG-029415	VP-04 Soil gas	Soil gas	9/29/2022	1:40:00 PM
22098423	DIG-029416	VP-19 Soil gas	Soil gas	9/29/2022	2:10:00 PM
22098424	DIG-029417	VP-20 Soil gas	Soil gas	9/29/2022	2:20:00 PM
22098425	DIG-029418	VP-21 Soil gas	Soil gas	9/29/2022	2:30:00 PM

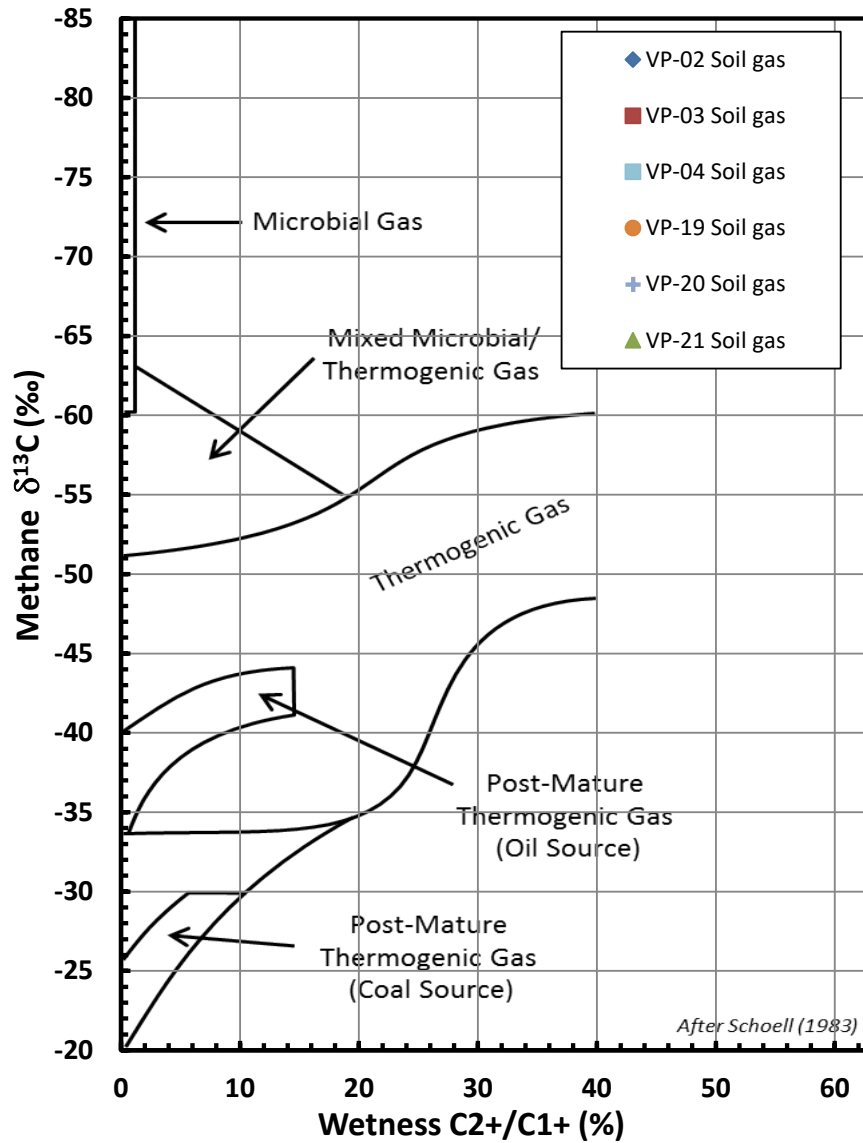
SAMPLE INFORMATION			COMPLETE GAS ANALYSIS														
Job Number	Lab Number	Well ID	GC Date	N ₂ ppm	O ₂ + Ar ppm	CO ₂ ppm	C ₁ ppm	C ₂ ppm	C ₃ ppm	iC ₄ ppm	nC ₄ ppm	iC ₅ ppm	nC ₅ ppm	C ₆ + ppm	He ppm	H ₂ ppm	
22098420	DIG-029413	VP-02 Soil gas	10/7/2022	791053	219841	1575	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
22098421	DIG-029414	VP-03 Soil gas	10/7/2022	789308	219007	2199	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
22098422	DIG-029415	VP-04 Soil gas	10/7/2022	789961	216606	6804	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
22098423	DIG-029416	VP-19 Soil gas	10/7/2022	791229	220367	1126	78	nd	nd	nd	nd	nd	nd	nd	nd	nd	
22098424	DIG-029417	VP-20 Soil gas	10/7/2022	790094	218342	3695	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	
22098425	DIG-029418	VP-21 Soil gas	10/7/2022	788952	219786	917	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	

SAMPLE INFORMATION			HYDROCARBON GAS ANALYSIS (normalized to hydrocarbon content)							
Job Number	Lab Number	Well ID	C ₁ mol%	C ₂ mol%	C ₃ mol%	iC ₄ mol%	nC ₄ mol%	iC ₅ mol%	nC ₅ mol%	C ₆ + mol%
22098420	DIG-029413	VP-02 Soil gas	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22098421	DIG-029414	VP-03 Soil gas	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22098422	DIG-029415	VP-04 Soil gas	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22098423	DIG-029416	VP-19 Soil gas	100.0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22098424	DIG-029417	VP-20 Soil gas	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
22098425	DIG-029418	VP-21 Soil gas	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

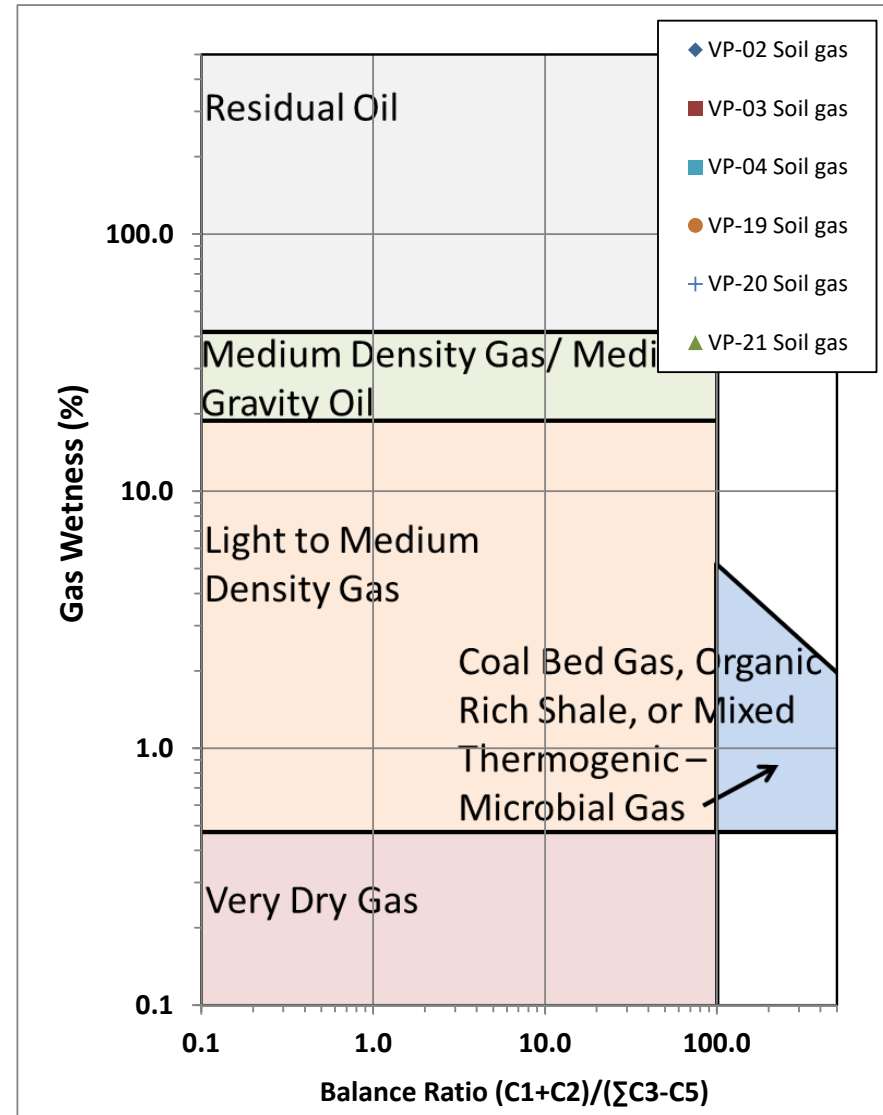
SAMPLE INFORMATION			HYDROCARBON RATIOS			
Job Number	Lab Number	Well ID	Total HC ppm	Wetness % C ₂ to C ₅	C ₁ /C ₂ +C ₃ mol/mol	Balance (C ₁ +C ₂)/(C ₃ -C ₅)
22098420	DIG-029413	VP-02 Soil gas	0	#N/A	#N/A	#N/A
22098421	DIG-029414	VP-03 Soil gas	0	#N/A	#N/A	#N/A
22098422	DIG-029415	VP-04 Soil gas	0	#N/A	#N/A	#N/A
22098423	DIG-029416	VP-19 Soil gas	78	0.0	#N/A	#N/A
22098424	DIG-029417	VP-20 Soil gas	0	#N/A	#N/A	#N/A
22098425	DIG-029418	VP-21 Soil gas	0	#N/A	#N/A	#N/A

SAMPLE INFORMATION			STABLE ISOTOPE ANALYSIS											
Job Number	Lab Number	Well ID	Mass Spec Date	δ ¹³ C ₁ ‰ VPDB	δ ¹³ C ₂ ‰ VPDB	δ ¹³ C ₃ ‰ VPDB	δ ¹³ iC ₄ ‰ VPDB	δ ¹³ nC ₄ ‰ VPDB	δ ¹³ iC ₅ ‰ VPDB	δ ¹³ nC ₅ ‰ VPDB	δ ¹³ CO ₂ ‰ VPDB	δD _{C1} ‰ VSMOW	Comments	
													Values in Red represent low signal results; Interpret with caution.	
22098420	DIG-029413	VP-02 Soil gas											No Methane for isotopic analysis	
22098421	DIG-029414	VP-03 Soil gas											No Methane for isotopic analysis	
22098422	DIG-029415	VP-04 Soil gas											No Methane for isotopic analysis	
22098423	DIG-029416	VP-19 Soil gas											Methane concentration too low for isotopic analysis	
22098424	DIG-029417	VP-20 Soil gas											No Methane for isotopic analysis	
22098425	DIG-029418	VP-21 Soil gas											No Methane for isotopic analysis	

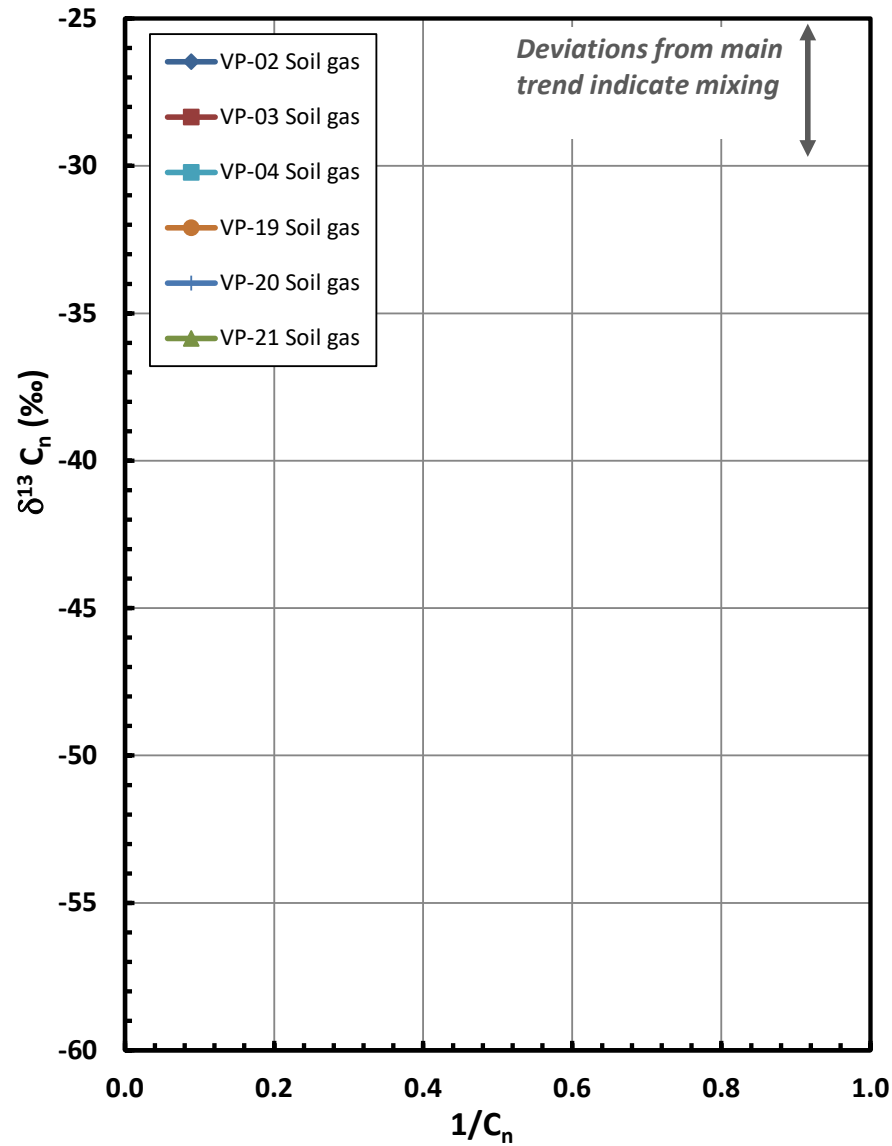
Genetic Classification Plot



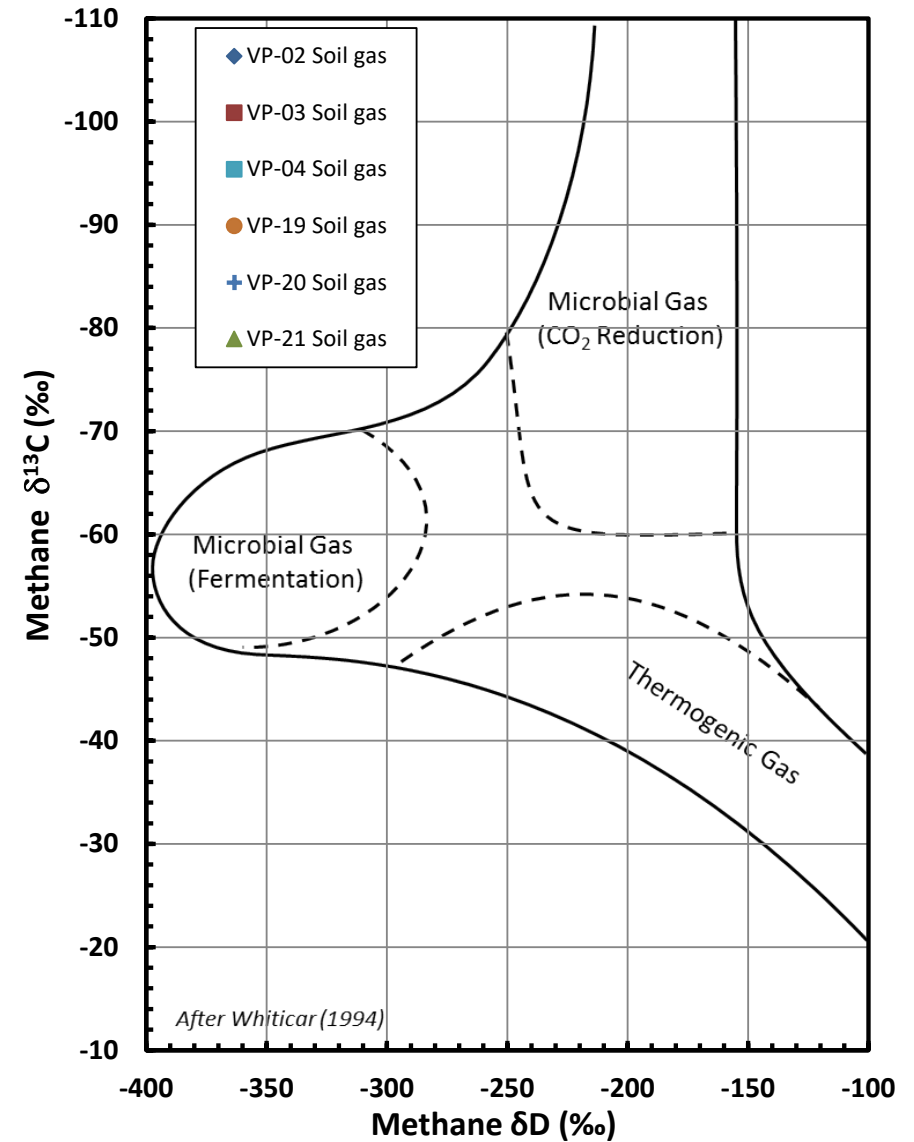
Haworth Ratio Plot - Characterization of Hydrocarbon Type



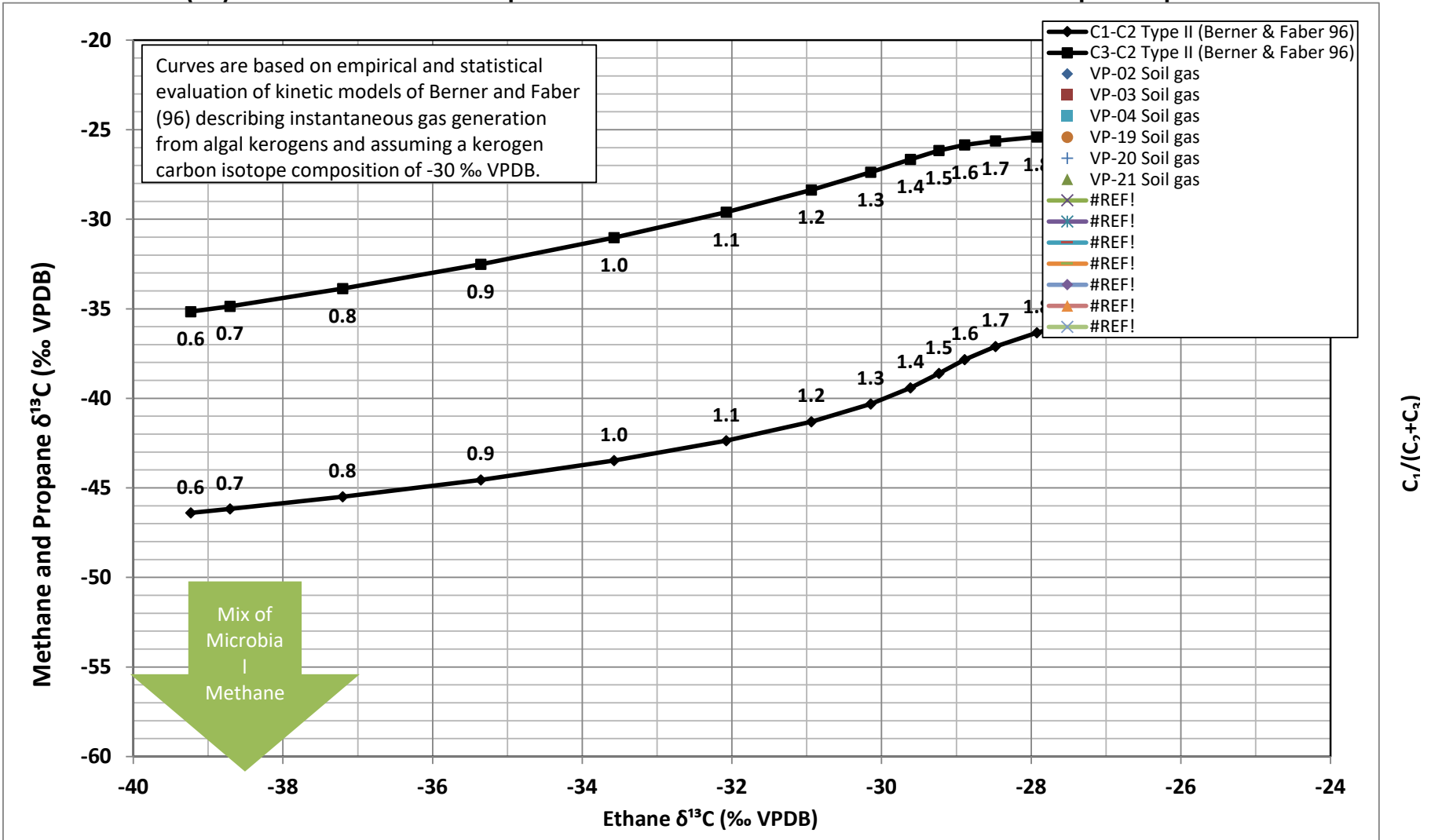
Natural Gas Plot



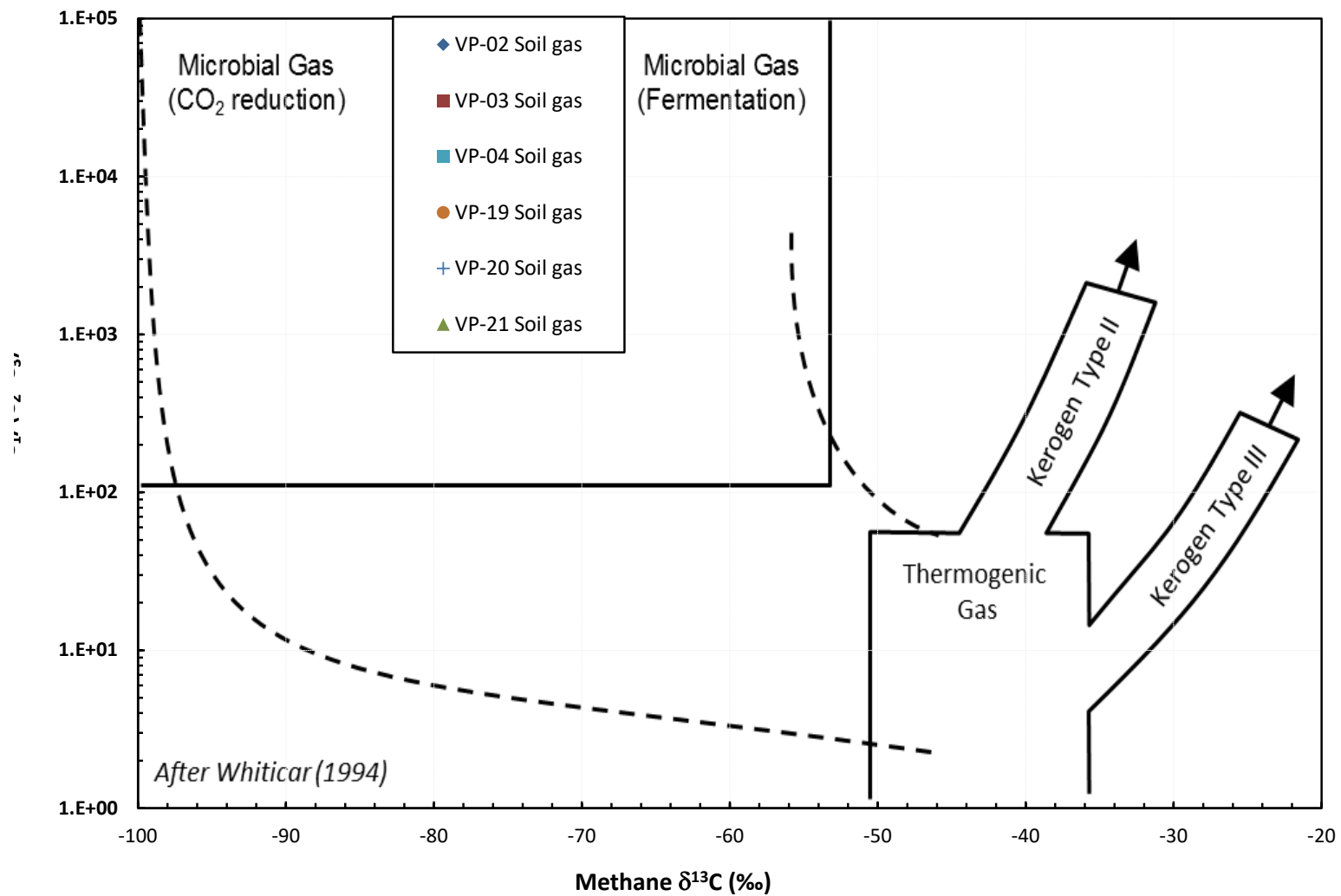
Methane $\delta^{13}C$ vs δD Genetic Classification Plot



Berner & Faber (96) - Vitrinite Reflectance Equivalent based on Natural Gas Stable Carbon Isotope Composition



Methane $\delta^{13}\text{C}$ vs $\text{C}_1/(\text{C}_2+\text{C}_3)$ Genetic Classification Plot



[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Chain of Custody Form



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main 303.531.2030 • info@digforenergy.com • digforenergy.com

Office and Lab 11025 Dover St • Ste 800 • Westminster, CO 80021

JOB 22098404 - 22098425

DIG-029397-029418

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G03-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time**: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	MW-1			Water									
	MW-2			Water									
	MW-3			Water									
	MW-4			Water									
	MW-5			Water									
	MW-6			Water									
	MW-7			Water									
	MW-8			Water									
	MW-9			Water									
	MW-11			Water									

Chain of Custody Record				Comments: Please send report as a single combine .pdf. Thanks.			
Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
<i>Ethan Black</i>	Fremont Env.	9/24/22	1637	<i>Bob Gilman</i>	DIG	9/29/22	1637

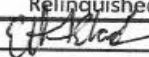
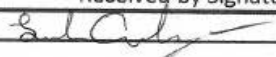
*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G02-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time**: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	MW-12			Water									
	MW-13			Water									
	MW-14			Water									
	MW-15			Water									
	MW-16			Water									
	MW-17			Water									
	VP-02			Other									
	VP-03			Other									
	VP-04			Other									
	VP-19			Other									

Chain of Custody Record				Comments:			
Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
	Fremont Env	9/29/22	1637		DIG	9/29/22	1637

*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

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main 303.531.2030 • info@digforenergy.com • digforenergy.com

Office and Lab 11025 Dover St • Ste 800 • Westminster, CO 80021

Send Data to:	Send Invoice to (if different):	Additional Information:
Name: Ethan Black	Name:	AFE #:
Company: Fremont Environmental, Inc.	Company:	Project: Noble - Weezer G03-22
Address:	Address:	PO #: C019-078
City, State:	City, State:	Location:
Phone: 603-477-6907	Phone:	Sampled By: Ethan Black
Email: ethanb@fremontenv.com	Email:	API #:

Turnaround Time **: ☒ Standard (≤ 10 Business days) ☐ Rush (≤ 5 Business days) ☐ Expedited Rush (≤ 3 Business days)

Container Number	Sample Identification	Date Sampled	Time	Sample Type*	Gas Composition	d13C of Methane (C1)	d13C of Ethane (C2)	d13C of Propane+ (C3+)	d13C of Carbon Dioxide (CO2)	dD of Methane (C1)	Whole Oil Gas Chromatography	d18O and dD Isotopes of Water	RSK 175 Dissolved Gas Quantification
	VP-20			Other									
	VP-21			Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									
				Other									

Chain of Custody Record				Comments:			
Relinquished by Signature	Company	Date	Time	Received by Signature	Company	Date	Time
<i>Ethan Black</i>	Fremont Env.	9/24/22	1637	<i>Sam Gaby</i>	DIG	9/29/22	1637

*Gas composition vs RSK-175 - Gas composition is a basic analysis of the concentration (ppm) of gases within the headspace of the sample (headspace is created at the lab). RSK-175 is a specific analysis technique combined with calculations to give the total dissolved gas of each species in the water sample (mg/L). Why one or the other? Gas composition gives us a quick, general look at relative concentrations and ratios (e.g., gas wetness). RSK-175 gives us an exact total of gas present in the sample (headspace and dissolved in the water). Questions? Give us a call at 303-531-2030.

** Rush and Expedited Rush turnaround time analysis will incur additional costs at 2x and 3x the standard turnaround time pricing.