

FREMONT ENVIRONMENTAL INC.

December 6, 2023

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

Subject: **Flowline Closure Data Submittal**
Bethyl GW 29-12
API # 05-123-36782
NWSW Sec. 29, T8N, R63W
Weld County, Colorado
Fremont Project No. C023-254
Remediation # 30216

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted Flowline Closure activities for Noble Energy Inc. (Noble) Bethyl GW 29-12. Impacted soil was not encountered during abandonment activities. Details of the Bethyl GW 29-12 flowline closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (603) 477-6907 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Ethan D. Black, P.G.
Consultant

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Report

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

Flowline Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

<i>Additional Attachments:</i>		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
<i>Site Name & COGCC Facility Number:</i>		<i>Date:</i>						<i>Remediation Project #:</i>
<i>Associated Wells:</i>		<i>Age of Site:</i>						<i>Number of Photos Attached:</i>

Starting point: (GPS coordinates and descriptions)

End point: (GPS coordinates and descriptions)

USCS Soil Type: _____ *Estimated Depth to Groundwater:* _____

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

Flowlines

<i>Flowline type</i>								
<i>Depth</i>								
<i>Age</i>								
<i>Length</i>								
<i>Construction Material</i>								
<i>Were flowlines pulled?</i>								
<i>Visual Integrity of lines</i>								
<i>Visual impacts if trenched</i>								
<i>PID Readings if trenched</i>								
<i>Sample taken?</i>								
<i>Location/Sample ID#</i>								
<i>Photo Number(s)</i>								

Other observations regarding on location flowlines:

Summary

Was impacted soil identified?
 No Yes - less than 10 cubic yards Yes - more than 10 cubic yards

Total number of samples field screened: _____ *Total number of samples collected:* _____

Highest PID Reading: _____ *Total number of samples submitted to lab for analysis:* _____

If more than 10 cubic yards of impacted soil were observed:

Vertical extent: _____ *Estimated spill volume:* _____

Lateral extent: _____ *Volume of soil removed:* _____

Is additional investigation required?

Was groundwater encountered during the investigation?
 No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils

Measured depth to groundwater: _____ *Was remedial groundwater removal conducted?* Yes No

Date Groundwater was encountered: _____ *Commencement date of removal:* _____

Sheen on groundwater? Yes No *Volume of groundwater removed prior to sampling:* _____

Free product observed? Yes No *Volume of groundwater removed post sampling:* _____

Total number of samples collected: _____ *Total Volume of groundwater removed:* _____

Total number of samples submitted to lab for analysis: _____

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
BETHYL GW 29-12 (FLOWLINE), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-254

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
FL01 4'	09/26/2023	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
FL02 4'	09/26/2023	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the ECMC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

Green highlighted cells indicate soil removed via excavation

* Indicates laboratory minimum detection limit in excess of SSL

** Summation of GRO+DRO+ORO must be less than 500 mg/kg

NA - Not analyzed

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
BETHYL GW 29-12 (FLOWLINE), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-254

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01 4'	09/26/2023	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL02 4'	09/26/2023	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Bold faced values exceed the ECMC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

Green highlighted cells indicate soil removed via excavation

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
BETHYL GW 29-12 (FLOWLINE), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-254

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01 4'	09/26/2023	4	7.98	0.22	0.109	<2.00
FL02 4'	09/26/2023	4	8.00	0.52	0.293	<2.00
BKG 4'	09/26/2023	4	8.59	0.505	0.379	<2.00

Bold faced, yellow highlighted values exceed the ECMC Table 915-1 concentrations

Green highlighted cells indicate soil removed via excavation

Yellow highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

NA - Not analyzed

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
BETHYL GW 29-12 (FLOWLINE), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-254

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01 4'	09/26/2023	4'	0.963	323	<0.200	<0.30	3.04	9.65	1.66	<0.260	<0.0200	6.8
FL02 4'	09/26/2023	4'	0.975	67.4	<0.200	<0.30	1.89	4.06	1.45	<0.260	<0.0200	5.88
BKG 4'	09/26/2023	4'	1.1	69.1	<0.200	<0.30	2.01	4.66	1.68	<0.260	<0.0200	6.57
Max. Background Concentration			1.1	69	NA	NA	NA	NA	NA	NA	NA	NA
125% Max. Background Concentration			1.375	86	NA	NA	NA	NA	NA	NA	NA	NA

Bold faced values exceed the ECMC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

Orange highlighted cells indicate soil samples exceeding 125% of the maximum background concentration

* Indicates laboratory minimum detection limit in excess of SSL

Green highlighted cells indicate soil removed via excavation

NA - Not analyzed

Photo Log



Description:

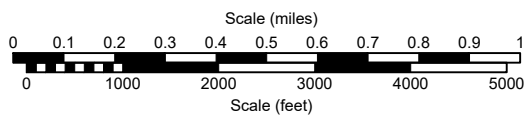
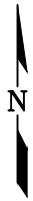
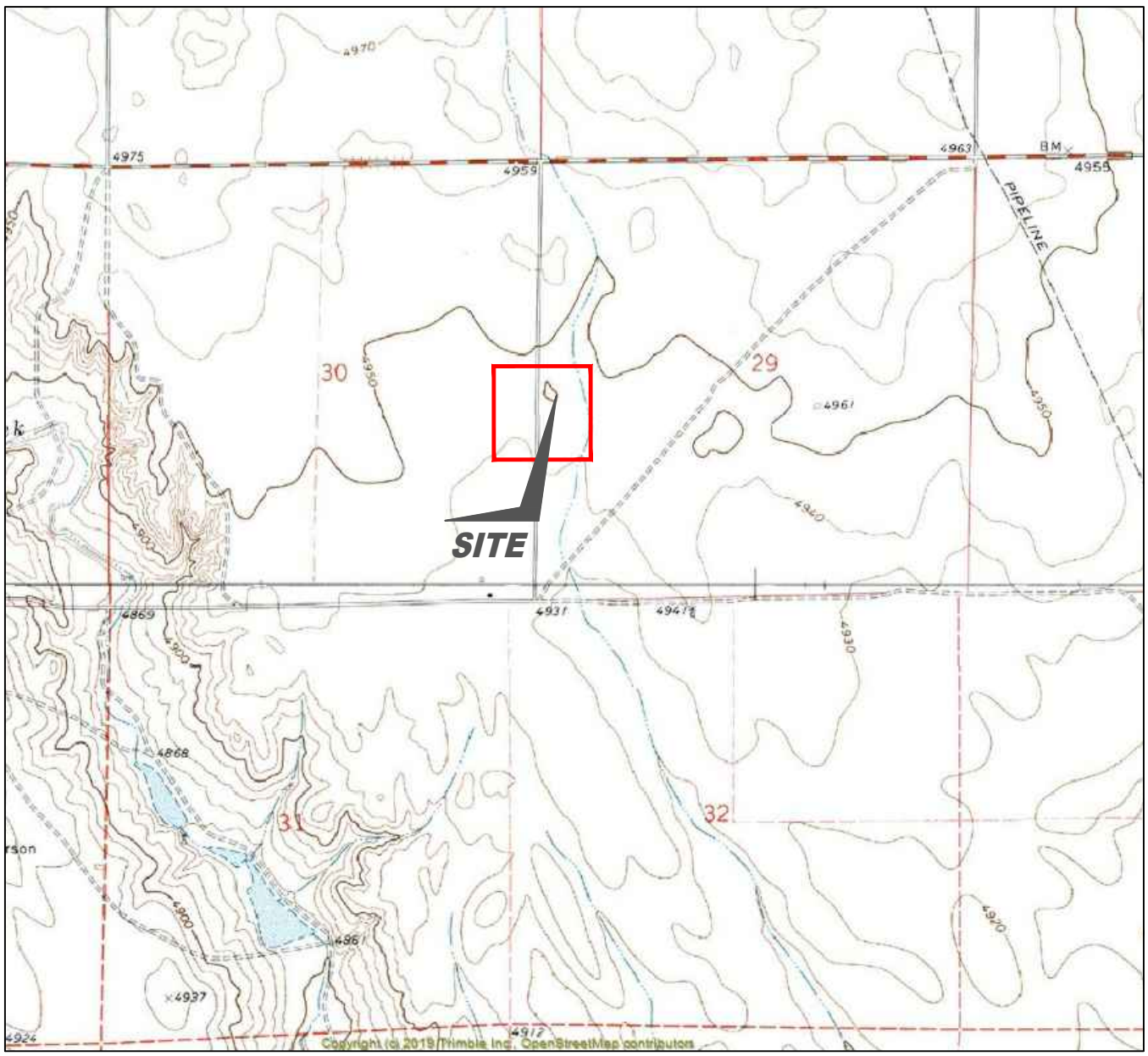
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Photo Log



Description:

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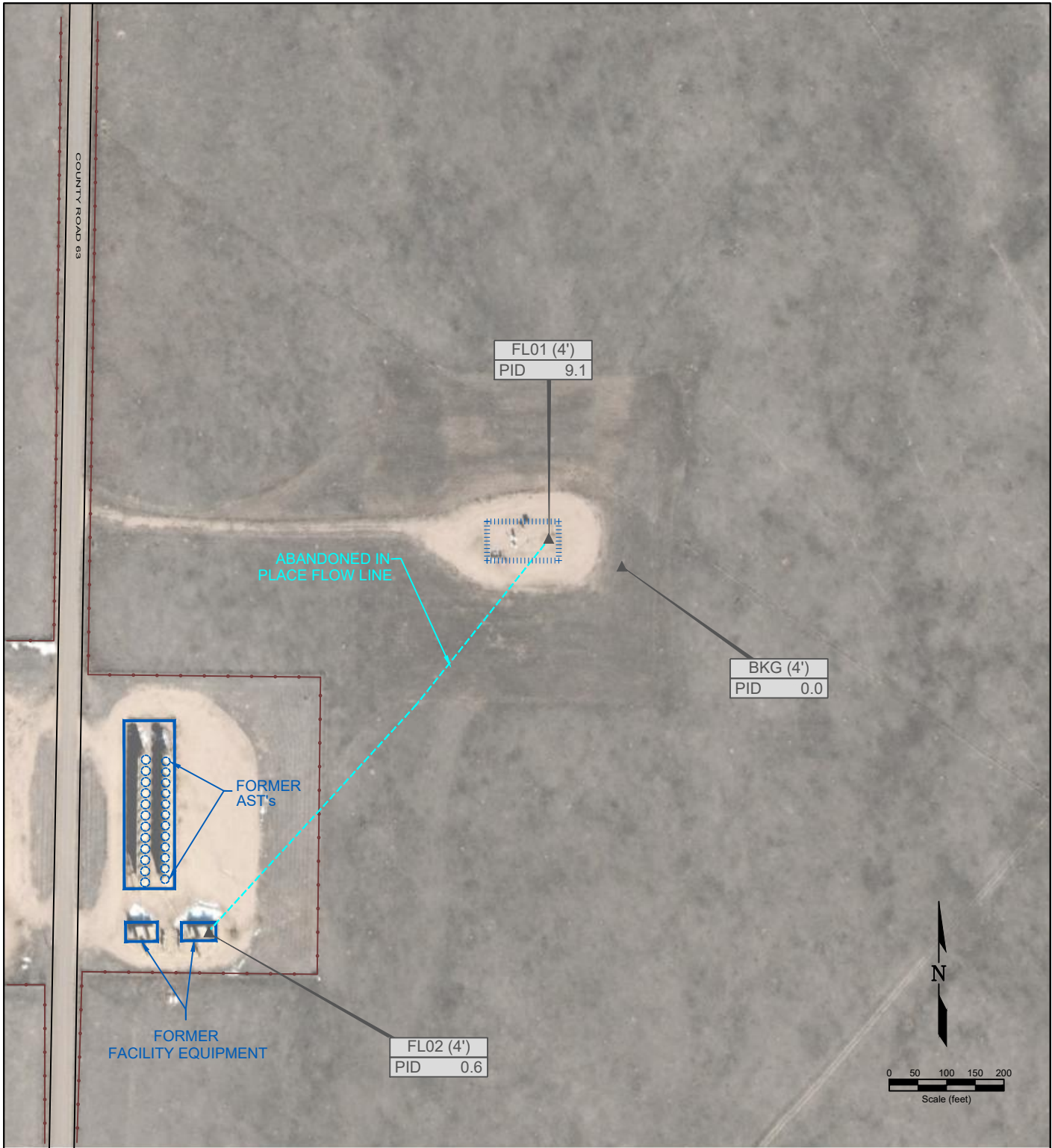
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY INC - Bethyl GW 29-12
 NWSW Sec. 29, T8N, R63W, 6th PM
 Weld County, Colorado
 40.629892°, -104.465929°

Project # CO23-254	API # 05-123-36782	Facility #
Date 12/07/2023	Remediation # 30216	Filename 23254TFL





LEGEND

- WELLHEAD LOCATION
- ▲ PID READING LOCATION
- ABOVE GROUND STORAGE TANK
- ▭ FORMER FACILITY
- ABANDONED IN-PLACE FLOW LINE
- ▭ CONTAINMENT BERM
- ▭ CONTAINMENT WALL
- ▭ FENCE LINE

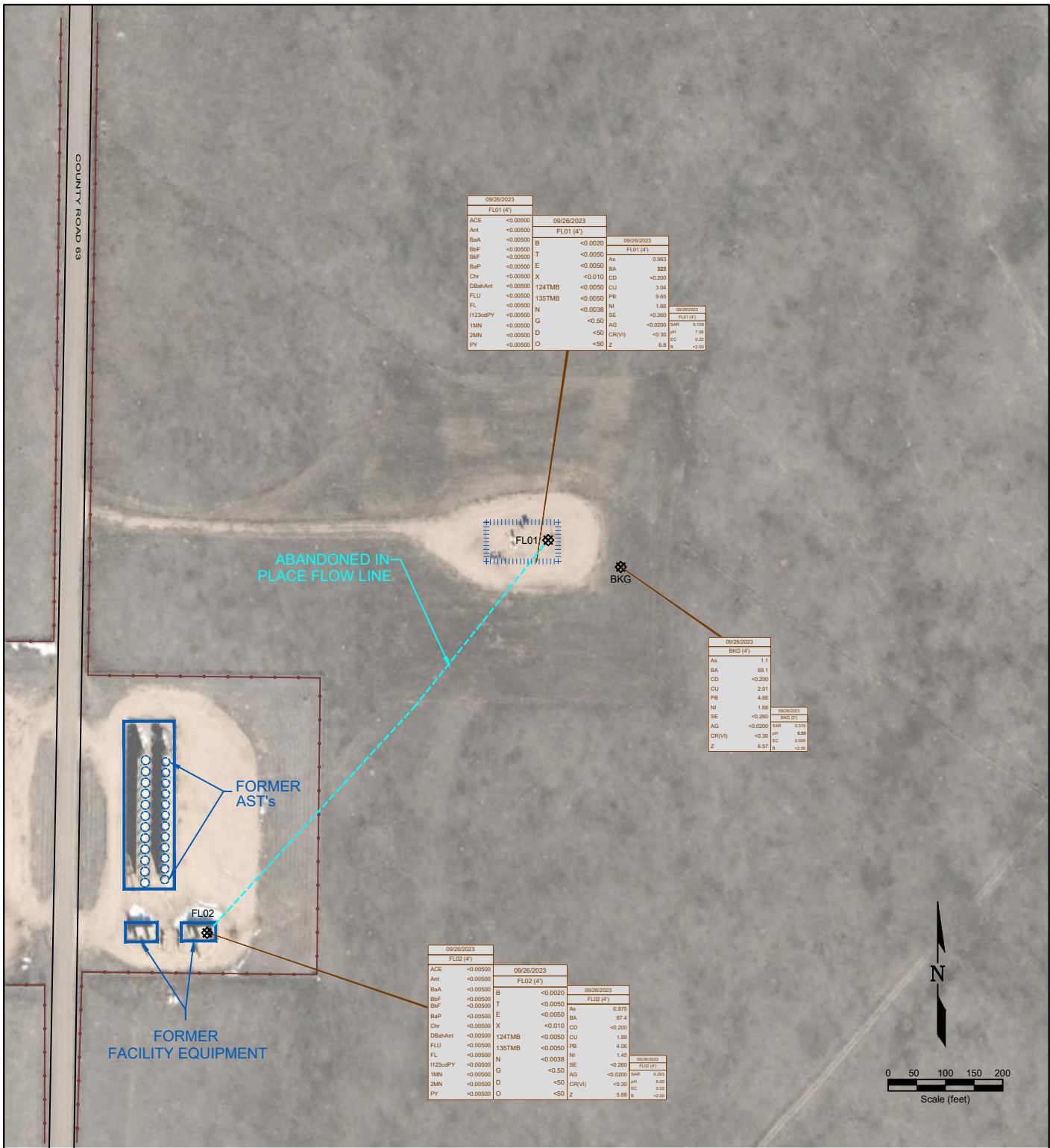
FL01 PID READING LOCATION IDENTIFICATION
PID 0.1 PHOTO IONIZATION DETECTION (ppm)

**Figure 2
SITE MAP**

NOBLE ENERGY INC - Bethyl GW 29-12
NWSW Sec. 29, T8N, R63W, 6th PM
Weld County, Colorado
40.629892°, -104.465929°

Project # CO23-254	API # 05-123-36782	Facility #
Date 12/07/2023	Remediation # 30216	Filename 23254QFL





LEGEND

- WELLHEAD LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- ABANDONED IN PLACE FLOW LINE
- ▬ CONTAINMENT BERM
- ▬ CONTAINMENT WALL
- ▬ FENCE LINE

4/7/2022	DATE SAMPLED	4/7/2023	DATE SAMPLED	4/7/2023	DATE SAMPLED
FL01 (4)	SAMPLE ID & DEPTH (ft)	FL01 (4)	SAMPLE ID & DEPTH (ft)	FL01 (4)	SAMPLE ID & DEPTH (ft)
ACE	<0.0050	ACE	<0.0050	ACE	<0.0050
Ant	<0.0050	Ant	<0.0050	Ant	<0.0050
BaA	<0.0050	BaA	<0.0050	BaA	<0.0050
BbF	<0.0050	BbF	<0.0050	BbF	<0.0050
BbP	<0.0050	BbP	<0.0050	BbP	<0.0050
Ch	<0.0050	Ch	<0.0050	Ch	<0.0050
DBahAnt	<0.0050	DBahAnt	<0.0050	DBahAnt	<0.0050
FLU	<0.0050	FLU	<0.0050	FLU	<0.0050
FL	<0.0050	FL	<0.0050	FL	<0.0050
1123dPY	<0.0050	1123dPY	<0.0050	1123dPY	<0.0050
1MN	<0.0050	1MN	<0.0050	1MN	<0.0050
2MN	<0.0050	2MN	<0.0050	2MN	<0.0050
PY	<0.0050	PY	<0.0050	PY	<0.0050

Figure 3
SOIL CHEMISTRY MAP

NOBLE ENERGY INC - Bethyl GW 29-12
NWSW Sec. 29, T8N, R63W, 6th PM
Weld County, Colorado
40.629892°, -104.465929°

Project # CO23-254	API # 05-123-36782	Facility #
Date 12/07/2023	Remediation # 30216	Filename 23254QFL

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 10, 2023

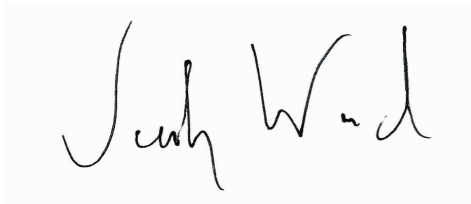
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Bethyl GW 29-12 FL

Work Order #2309528

Enclosed are the results of analyses for samples received by Summit Scientific on 09/27/23 16:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and "W".

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 4'	2309528-01	Soil	09/26/23 12:05	09/27/23 16:40
FL02 4'	2309528-02	Soil	09/26/23 12:15	09/27/23 16:40
BKG 4'	2309528-03	Soil	09/26/23 12:04	09/27/23 16:40

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2309528	

Send Data To:		Send Invoice To:
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble
Address:	E-Mail: Fremont Distribution List	Project Name/Location:
City/State/Zip:		AFE#:
Phone: 303-261-6246	Project Name: BETHYL GW 29-12 FL	PO/Billing Codes: UWRWE-A3309-ABN
Sampler Name: Stanley Gilbert	Project Number:	Contact: Mike Montoya

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	
1	FLO2 4'	9/26/23	12:05	2			X			X		X	X	X	X	X			
2	FLO2 4'	9/26/23	12:15	2			X			X		X	X	X	X	X			
3	BKG 4'	9/26/23	12:04	1			X			X				X	X				
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>[Signature]</i>	Date/Time: 9/27/23 15:33	Received by: Summit North	Date/Time: 9/27/23 15:33	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: S2	Date/Time: 9/27/23 1640	Received by: <i>[Signature]</i>	Date/Time: 9/27/23 1640	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: 3.5	Corrected Temperature: —	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2309528

Client: Noble / Fremont Client Project ID: Bethyl GW 29-12 FL

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #:

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) 3.5 Thermometer # 2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? (1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	received 3 jars labeled FLO24'
Do the sample IDs on the bottle labels match the COC? (1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	no time st
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): <u>determined extra jar was meant for project 2309529</u>				
<small>(1) If NO, then contact the client before proceeding with analysis and note in case narrative.</small>				

AS
Custodian Printed Name

9/27/23
Date/Time

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL01 4'
2309528-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0923	09/28/23	09/30/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0314	78.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0368	91.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0360	90.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0925	09/28/23	10/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.14	73.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL01 4'
2309528-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10948	09/29/23	09/30/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0245	73.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0205	61.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0034	10/02/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL01 4'
2309528-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.963	0.200	mg/kg dry	1	BGI0959	09/29/23	10/02/23	EPA 6020B	
Barium	323	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.04	0.400	"	"	"	"	"	"	
Lead	9.65	0.200	"	"	"	"	"	"	
Nickel	1.66	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	6.80	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0054	10/02/23	10/04/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.3	0.0558	mg/L dry	1	BGJ0108	10/03/23	10/05/23	EPA 6020B	
Magnesium	7.51	0.0558	"	"	"	"	"	"	
Sodium	3.06	0.0558	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.109	0.00100	units	1	BGJ0300	10/07/23	10/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

FL01 4'
2309528-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.7		%	1	BGJ0038	10/02/23	10/03/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.220	0.0100	mmhos/cm	1	BGJ0169	10/04/23	10/04/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.98		pH Units	1	BGJ0168	10/04/23	10/04/23	EPA 9045D	

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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL02 4'
2309528-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGI0923	09/28/23	09/30/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0308	76.9 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0370	92.6 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0365	91.4 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGI0925	09/28/23	10/04/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	9.89	79.1 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL02 4'
2309528-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BG10948	09/29/23	09/30/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0241	72.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0226	67.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0034	10/02/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

FL02 4'
2309528-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.975	0.200	mg/kg dry	1	BGI0959	09/29/23	10/02/23	EPA 6020B	
Barium	67.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.89	0.400	"	"	"	"	"	"	
Lead	4.06	0.200	"	"	"	"	"	"	
Nickel	1.45	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	5.88	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0054	10/02/23	10/04/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.3	0.0543	mg/L dry	1	BGJ0108	10/03/23	10/05/23	EPA 6020B	
Magnesium	10.5	0.0543	"	"	"	"	"	"	
Sodium	9.01	0.0543	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.293	0.00100	units	1	BGJ0300	10/07/23	10/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Bethyl GW 29-12 FL
 Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

FL02 4'
2309528-02 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0		%	1	BGJ0038	10/02/23	10/03/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.520	0.0100	mmhos/cm	1	BGJ0169	10/04/23	10/04/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.00		pH Units	1	BGJ0168	10/04/23	10/04/23	EPA 9045D	

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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

BKG 4'
2309528-03 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0034	10/02/23	10/03/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.10	0.200	mg/kg dry	1	BGJ0959	09/29/23	10/02/23	EPA 6020B	
Barium	69.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.01	0.400	"	"	"	"	"	"	
Lead	4.66	0.200	"	"	"	"	"	"	
Nickel	1.68	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	6.57	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0054	10/02/23	10/04/23	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	52.7	0.0557	mg/L dry	1	BGJ0108	10/03/23	10/06/23	EPA 6020B	
Magnesium	9.55	0.0557	"	"	"	"	"	"	
Sodium	11.4	0.0557	"	"	"	"	"	"	

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL
Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

BKG 4'
2309528-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.379	0.00100	units	1	BGJ0300	10/07/23	10/07/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.7		%	1	BGJ0038	10/02/23	10/03/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.505	0.0100	mmhos/cm	1	BGJ0169	10/04/23	10/04/23	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/26/23 12:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.59		pH Units	1	BGJ0168	10/04/23	10/04/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGI0923 - EPA 5030 Soil MS

Blank (BGI0923-BLK1)

Prepared: 09/28/23 Analyzed: 09/29/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0370		"	0.0400		92.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0364		"	0.0400		90.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0386		"	0.0400		96.6	50-150			

LCS (BGI0923-BS1)

Prepared: 09/28/23 Analyzed: 09/29/23

Benzene	0.0986	0.0020	mg/kg	0.100		98.6	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130			
m,p-Xylene	0.244	0.010	"	0.200		122	70-130			
o-Xylene	0.126	0.0050	"	0.100		126	70-130			
1,2,4-Trimethylbenzene	0.127	0.0050	"	0.100		127	70-130			
1,3,5-Trimethylbenzene	0.123	0.0050	"	0.100		123	70-130			
Naphthalene	0.123	0.0038	"	0.100		123	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0371		"	0.0400		92.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0370		"	0.0400		92.5	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0391		"	0.0400		97.6	50-150			

Matrix Spike (BGI0923-MS1)

Source: 2309490-01

Prepared: 09/28/23 Analyzed: 09/29/23

Benzene	0.0896	0.0020	mg/kg	0.100	ND	89.6	70-130			
Toluene	0.0932	0.0050	"	0.100	ND	93.2	70-130			
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
m,p-Xylene	0.215	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130			
1,2,4-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
1,3,5-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130			
Naphthalene	0.121	0.0038	"	0.100	ND	121	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0368		"	0.0400		92.0	50-150			
<i>Surrogate: Toluene-d8</i>	0.0369		"	0.0400		92.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0392		"	0.0400		97.9	50-150			

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 Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

Batch BGI0923 - EPA 5030 Soil MS

Matrix Spike Dup (BGI0923-MSD1)	Source: 2309490-01			Prepared: 09/28/23 Analyzed: 09/29/23						
Benzene	0.0847	0.0020	mg/kg	0.100	ND	84.7	70-130	5.71	30	
Toluene	0.0889	0.0050	"	0.100	ND	88.9	70-130	4.81	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	5.72	30	
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130	4.96	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	7.61	30	
1,2,4-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	5.46	30	
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	5.06	30	
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130	8.92	30	
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.1	50-150			
Surrogate: Toluene-d8	0.0371		"	0.0400		92.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	50-150			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL
 Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGI0925 - EPA 3550A

Blank (BGI0925-BLK1)

Prepared: 09/28/23 Analyzed: 10/03/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	9.21		"	12.5		73.7	30-150				

LCS (BGI0925-BS1)

Prepared: 09/28/23 Analyzed: 10/03/23

C10-C28 (DRO)	469	50	mg/kg	500		93.9	70-130				
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		80.4	30-150				

Matrix Spike (BGI0925-MS1)

Source: 2309490-01

Prepared: 09/28/23 Analyzed: 10/03/23

C10-C28 (DRO)	403	50	mg/kg	500	ND	80.7	70-130				
Surrogate: <i>o</i> -Terphenyl	7.81		"	12.5		62.5	30-150				

Matrix Spike Dup (BGI0925-MSD1)

Source: 2309490-01

Prepared: 09/28/23 Analyzed: 10/03/23

C10-C28 (DRO)	488	50	mg/kg	500	ND	97.5	70-130	18.9	20		
Surrogate: <i>o</i> -Terphenyl	8.10		"	12.5		64.8	30-150				

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGI0948 - EPA 5030 Soil MS

Blank (BGI0948-BLK1)

Prepared: 09/29/23 Analyzed: 09/30/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0431</i>		"	<i>0.0333</i>		<i>129</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0442</i>		"	<i>0.0333</i>		<i>133</i>	<i>40-150</i>			

LCS (BGI0948-BS1)

Prepared: 09/29/23 Analyzed: 09/30/23

Acenaphthene	0.0384	0.00500	mg/kg	0.0333	115	31-137
Anthracene	0.0357	0.00500	"	0.0333	107	30-120
Benzo (a) anthracene	0.0311	0.00500	"	0.0333	93.2	30-120
Benzo (a) pyrene	0.0374	0.00500	"	0.0333	112	30-120
Benzo (b) fluoranthene	0.0386	0.00500	"	0.0333	116	30-120
Benzo (k) fluoranthene	0.0396	0.00500	"	0.0333	119	30-120
Chrysene	0.0363	0.00500	"	0.0333	109	30-120
Dibenz (a,h) anthracene	0.0367	0.00500	"	0.0333	110	30-120
Fluoranthene	0.0337	0.00500	"	0.0333	101	30-120
Fluorene	0.0367	0.00500	"	0.0333	110	30-120
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	79.9	30-120
Pyrene	0.0354	0.00500	"	0.0333	106	35-142
1-Methylnaphthalene	0.0345	0.00500	"	0.0333	103	35-142
2-Methylnaphthalene	0.0355	0.00500	"	0.0333	106	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0403</i>		"	<i>0.0333</i>	<i>121</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0393</i>		"	<i>0.0333</i>	<i>118</i>	<i>40-150</i>

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10/10/23 11:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGI0948 - EPA 5030 Soil MS

Matrix Spike (BGI0948-MS1)	Source: 2309528-01			Prepared: 09/29/23 Analyzed: 09/30/23						
Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.2	31-137			
Anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120			
Benzo (a) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	30-120			
Benzo (a) pyrene	0.0196	0.00500	"	0.0333	ND	58.9	30-120			
Benzo (b) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.7	30-120			
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120			
Chrysene	0.0207	0.00500	"	0.0333	ND	62.2	30-120			
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333	ND	61.0	30-120			
Fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120			
Fluorene	0.0188	0.00500	"	0.0333	ND	56.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	45.1	30-120			
Pyrene	0.0208	0.00500	"	0.0333	ND	62.4	35-142			
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.7	15-130			
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.8	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0230</i>		<i>"</i>	<i>0.0333</i>		<i>69.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.4</i>	<i>40-150</i>			

Matrix Spike Dup (BGI0948-MSD1)	Source: 2309528-01			Prepared: 09/29/23 Analyzed: 09/30/23						
Acenaphthene	0.0164	0.00500	mg/kg	0.0333	ND	49.3	31-137	19.8	30	
Anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	4.30	30	
Benzo (a) anthracene	0.0133	0.00500	"	0.0333	ND	39.9	30-120	26.1	30	
Benzo (a) pyrene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	12.1	30	
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.2	30-120	29.8	30	
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	25.7	30	
Chrysene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	29.3	30	
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	26.6	30	
Fluoranthene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	13.8	30	
Fluorene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	4.18	30	
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	42.0	30-120	7.14	30	
Pyrene	0.0154	0.00500	"	0.0333	ND	46.1	35-142	30.0	30	
1-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.2	15-130	4.97	50	
2-Methylnaphthalene	0.0105	0.00500	"	0.0333	ND	31.5	15-130	36.9	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0160</i>		<i>"</i>	<i>0.0333</i>		<i>48.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0137</i>		<i>"</i>	<i>0.0333</i>		<i>41.2</i>	<i>40-150</i>			

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Fremont Environmental
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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGJ0034 - EPA 3050B

Blank (BGJ0034-BLK1)

Prepared: 10/02/23 Analyzed: 10/03/23

Boron ND 2.00 mg/L

LCS (BGJ0034-BS1)

Prepared: 10/02/23 Analyzed: 10/03/23

Boron 5.31 2.00 mg/L 5.00 106 80-120

Duplicate (BGJ0034-DUP1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/03/23

Boron 0.260 2.00 mg/L 0.186 33.3 20 QR-01

Matrix Spike (BGJ0034-MS1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/03/23

Boron 5.99 2.00 mg/L 5.00 0.186 116 75-125

Matrix Spike Dup (BGJ0034-MSD1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/03/23

Boron 5.59 2.00 mg/L 5.00 0.186 108 75-125 6.94 25

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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGI0959 - EPA 3050B

Blank (BGI0959-BLK1)

Prepared: 09/29/23 Analyzed: 10/02/23

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BGI0959-BS1)

Prepared: 09/29/23 Analyzed: 10/02/23

Arsenic	43.9	0.200	mg/kg wet	40.0		110	80-120			
Barium	42.4	0.400	"	40.0		106	80-120			
Cadmium	2.20	0.200	"	2.00		110	80-120			
Copper	44.5	0.400	"	40.0		111	80-120			
Lead	21.0	0.200	"	20.0		105	80-120			
Nickel	44.9	0.400	"	40.0		112	80-120			
Silver	1.94	0.0200	"	2.00		97.1	80-120			
Zinc	46.0	0.400	"	40.0		115	80-120			

Duplicate (BGI0959-DUP1)

Source: 2309479-01

Prepared: 09/29/23 Analyzed: 10/02/23

Arsenic	0.983	0.200	mg/kg dry		1.01			2.42	20	
Barium	49.3	0.400	"		44.2			11.0	20	
Cadmium	0.0791	0.200	"		0.0677			15.6	20	
Copper	2.09	0.400	"		2.22			6.01	20	
Lead	3.04	0.200	"		2.59			15.9	20	
Nickel	1.34	0.400	"		1.42			5.97	20	
Silver	0.0118	0.0200	"		0.0101			15.4	20	
Zinc	6.18	0.400	"		5.17			17.8	20	
Selenium	ND	0.260	"		ND				200	

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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BGI0959 - EPA 3050B

Matrix Spike (BGI0959-MS1)

Source: 2309479-01

Prepared: 09/29/23 Analyzed: 10/02/23

Arsenic	18.2	0.200	mg/kg dry	42.3	1.01	40.7	75-125				QM-07
Barium	116	0.400	"	42.3	44.2	170	75-125				QM-07
Cadmium	2.62	0.200	"	2.11	0.0677	121	75-125				
Copper	19.4	0.400	"	42.3	2.22	40.7	75-125				QM-07
Lead	25.9	0.200	"	21.1	2.59	110	75-125				
Nickel	19.0	0.400	"	42.3	1.42	41.6	75-125				QM-07
Silver	2.16	0.0200	"	2.11	0.0101	102	75-125				
Zinc	23.4	0.400	"	42.3	5.17	43.1	75-125				QM-07

Matrix Spike Dup (BGI0959-MSD1)

Source: 2309479-01

Prepared: 09/29/23 Analyzed: 10/02/23

Arsenic	18.2	0.200	mg/kg dry	42.3	1.01	40.7	75-125	0.114	25		QM-07
Barium	122	0.400	"	42.3	44.2	183	75-125	4.84	25		QM-07
Cadmium	2.57	0.200	"	2.11	0.0677	119	75-125	1.82	25		
Copper	19.6	0.400	"	42.3	2.22	41.0	75-125	0.716	25		QM-07
Lead	25.8	0.200	"	21.1	2.59	110	75-125	0.385	25		
Nickel	19.2	0.400	"	42.3	1.42	42.1	75-125	1.09	25		QM-07
Silver	2.19	0.0200	"	2.11	0.0101	103	75-125	0.953	25		
Zinc	23.7	0.400	"	42.3	5.17	43.9	75-125	1.54	25		QM-07

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Project: Noble - Bethyl GW 29-12 FL

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 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGJ0054 - 3060A Mod

Blank (BGJ0054-BLK1)

Prepared: 10/02/23 Analyzed: 10/04/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGJ0054-BS1)

Prepared: 10/02/23 Analyzed: 10/04/23

Chromium, Hexavalent 25.0 0.30 mg/kg wet 25.0 100 80-120

Duplicate (BGJ0054-DUP1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/04/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGJ0054-MS1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/04/23

Chromium, Hexavalent 27.9 0.30 mg/kg dry 27.9 ND 100 75-125

Matrix Spike Dup (BGJ0054-MSD1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/04/23

Chromium, Hexavalent 28.0 0.30 mg/kg dry 27.9 ND 101 75-125 0.598 20

Summit Scientific

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Reported:
 10/10/23 11:59

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BGJ0108 - General Preparation

Blank (BGJ0108-BLK1)

Prepared: 10/03/23 Analyzed: 10/05/23

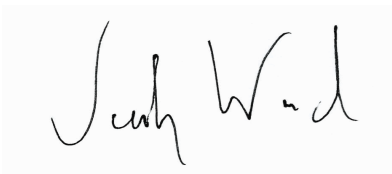
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGJ0108-BS1)

Prepared: 10/03/23 Analyzed: 10/05/23

Calcium	5.98	0.0500	mg/L wet	5.00	120	70-130				
Magnesium	5.39	0.0500	"	5.00	108	70-130				
Sodium	5.64	0.0500	"	5.00	113	70-130				

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Reported:
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Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC			RPD	Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGJ0038 - General Preparation


Duplicate (BGJ0038-DUP1)

Source: 2309528-01

Prepared: 10/02/23 Analyzed: 10/03/23

% Solids	90.1		%		89.7			0.415	20	
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Reported:
 10/10/23 11:59

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BGJ0169 - General Preparation

Blank (BGJ0169-BLK1)

Prepared & Analyzed: 10/04/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGJ0169-BS1)

Prepared & Analyzed: 10/04/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105


Duplicate (BGJ0169-DUP1)

Source: 2309516-01

Prepared & Analyzed: 10/04/23

Specific Conductance (EC) 0.250 0.0100 mmhos/cm 0.250 0.00 20

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Project Number: UWRWE-A3309-ABN
 Project Manager: Paul Henchan

Reported:
 10/10/23 11:59

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGJ0168 - General Preparation

LCS (BGJ0168-BS1)

Prepared & Analyzed: 10/04/23

pH	9.26	pH Units	9.18	101	95-105
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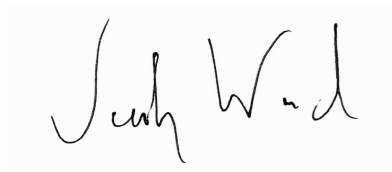
Duplicate (BGJ0168-DUP1)

Source: 2309516-01

Prepared & Analyzed: 10/04/23

pH	8.29	pH Units	8.29	0.00	20
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Project: Noble - Bethyl GW 29-12 FL

Project Number: UWRWE-A3309-ABN
Project Manager: Paul Henchan

Reported:
10/10/23 11:59

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference