

FREMONT ENVIRONMENTAL INC.

May 10, 2022

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

Subject: **Flowline Closure Data Submittal**
WPF III A18-13A Flowline
API # 05-123-13197
SWSW Sec. 18, T6N, R64W
Weld County, Colorado
Fremont Project No. C023-007
Remediation #25040

Dear Mr. Peterson:

As requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline abandonment activities at the Noble Energy Inc. (Noble) WPF III A18-13A Flowline. Details of the flowline abandonment activities are documented in the attached Closure Report. Legacy 1-Methylnaphthalene impacts were reported for the soil sample collected at the separator (SEP01@5'). The impacts were reported under Remediation ID 25398 for the related facility (483054). Groundwater was not encountered during decommissioning activities.

Please contact me at (970) 213-7488 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.

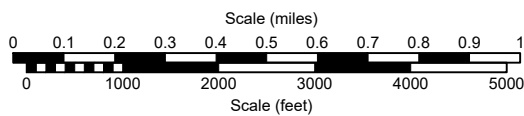
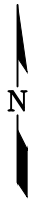
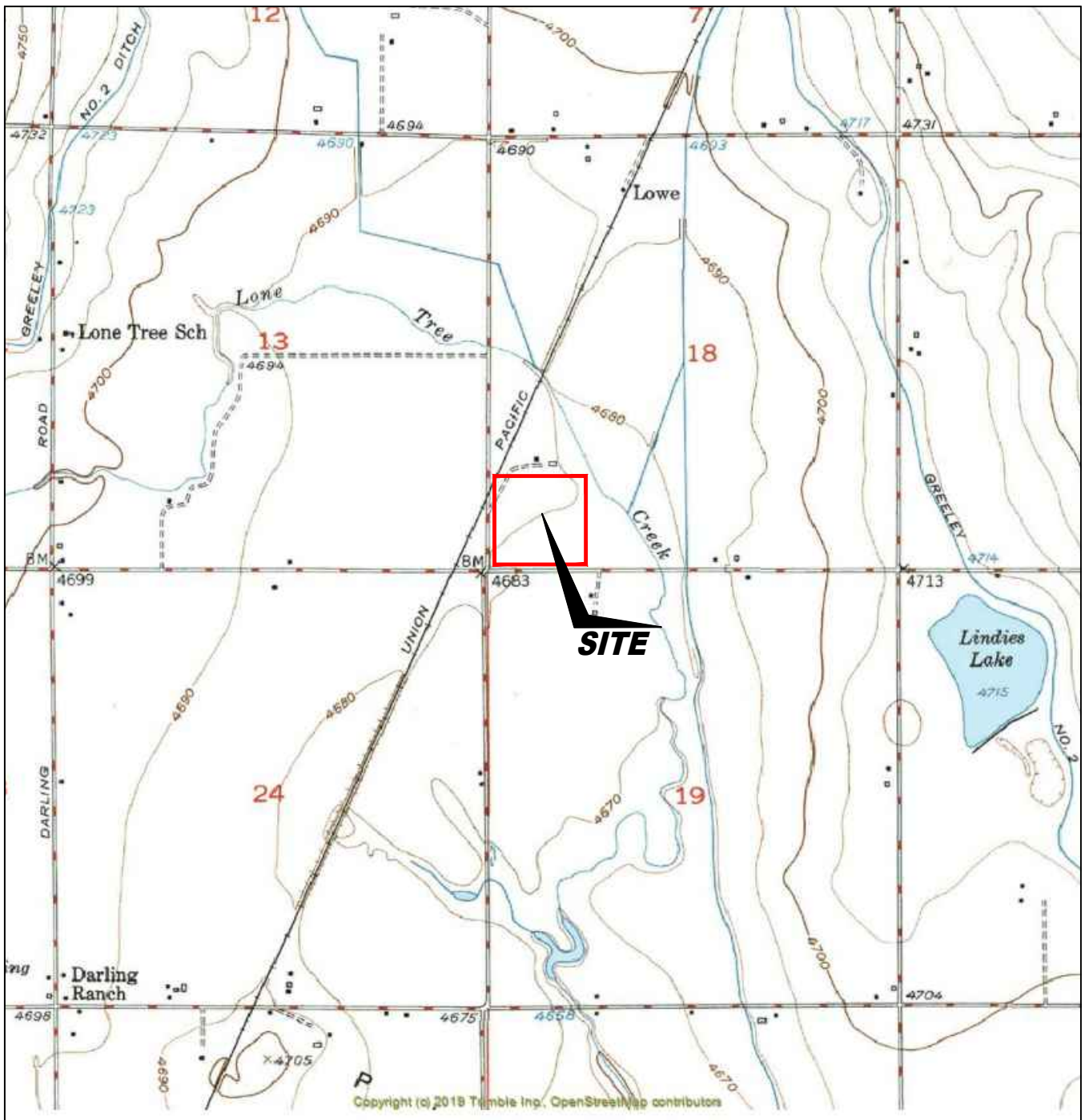


Chris Lattes
Consultant

Attachments:

- Figures
- Tables
- Flowline Closure Checklist
- Photos
- Laboratory Reports

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



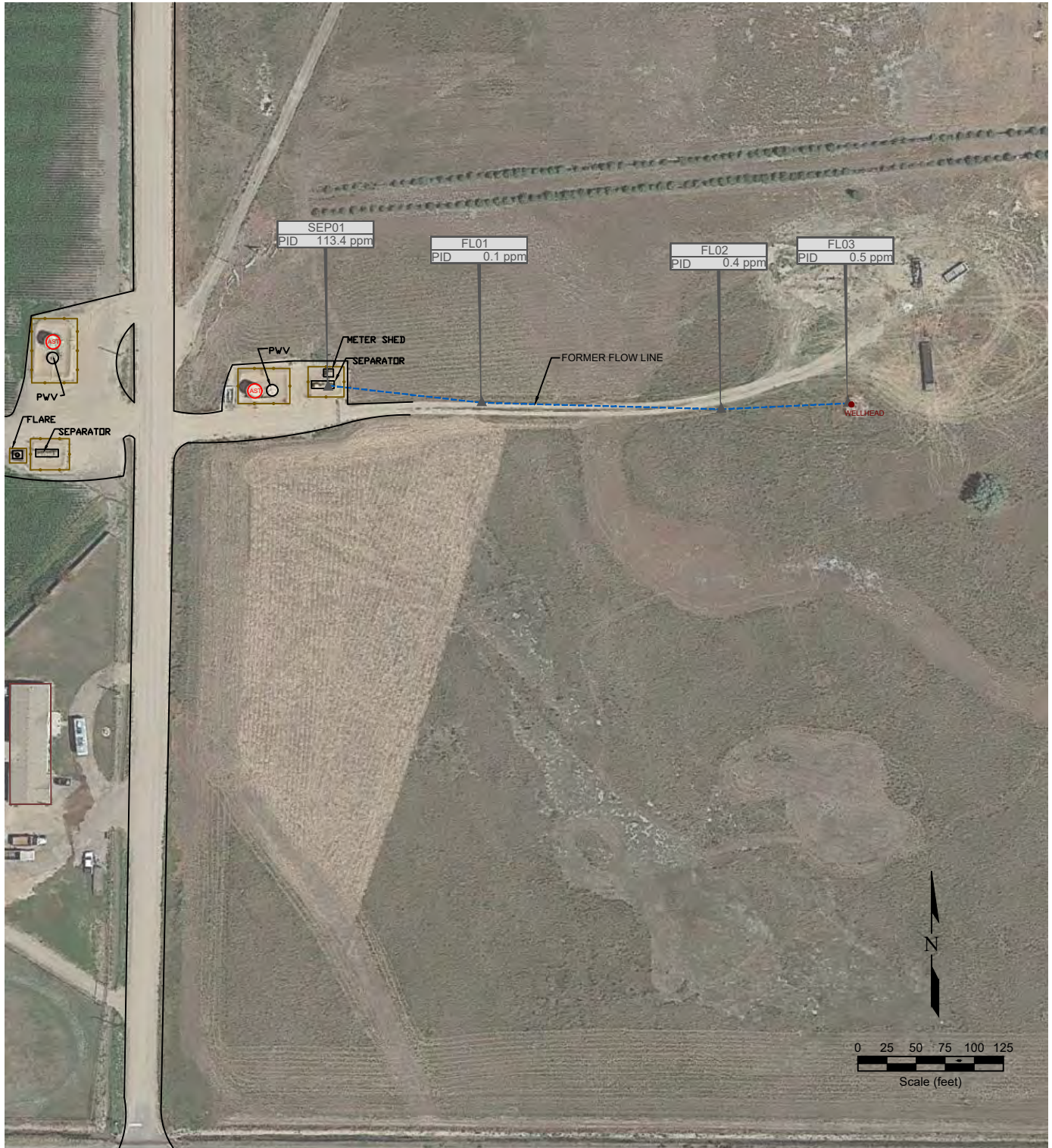
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP
NOBLE ENERGY INC ~ WPF III A18-13A

SWSW Sec. 18, T6N, R64W, 6th PM
 Weld County, Colorado
 40.480489°, -104.599693°

Project # C023-007	API # 05-123-13197	Facility #
Date 5/9/23	Remediation # 25040	Filename 23007T






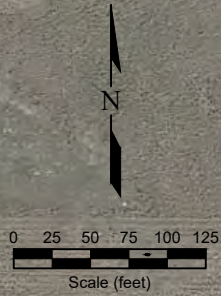
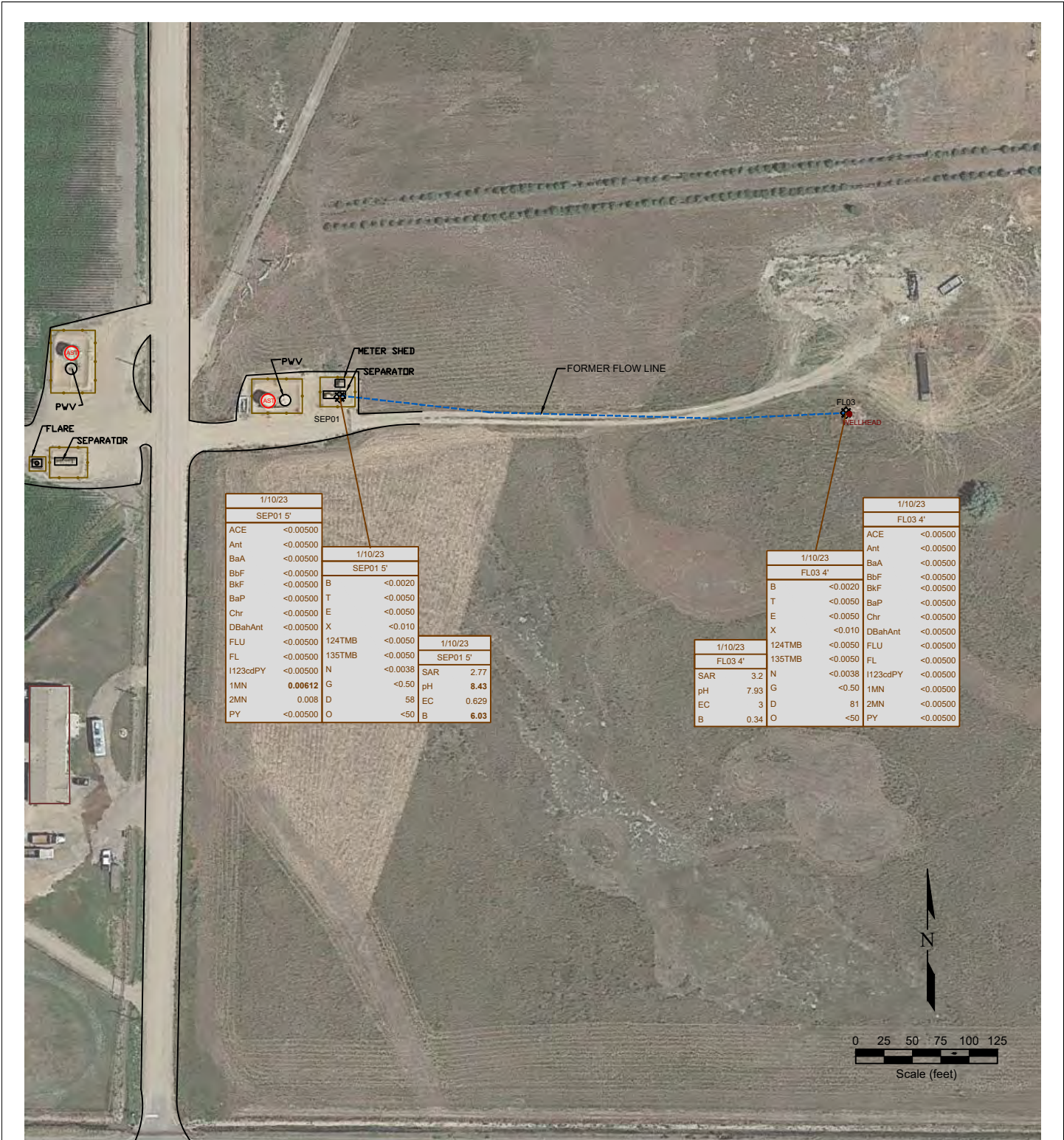
LEGEND

● WELL HEAD LOCATION	▲ PID READING LOCATION	ASST ABOVE GROUND STORAGE TANK	FORMER FACILITY	FLOWLINE
BUILDING	BUILDING	FENCE LINE	CONTAINMENT BERM	

Figure 2
SITE MAP
NOBLE ENERGY INC ~ WPF III A18-13A
 SWSW Sec. 18, T6N, R64W, 6th PM
 Weld County, Colorado
 40.480489°, -104.599693°

Project No. C023-007	API # 05-123-13197	Facility #
Date 5/9/23	Remediation # 25040	Filename 23007Q





LEGEND

- WELL HEAD LOCATION
- ⊗ SOIL SAMPLE LOCATION
- AS ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- BUILDING
- FLOWLINE
- FENCE LINE
- CONTAINMENT BERM

DATE SAMPLED	SAMPLE ID and DEPTH (ft)	DATE SAMPLED	SAMPLE ID and DEPTH (ft)
03/24/2021	N Well @ 3'	01/10/23	SEP01 5'
ACE	<0.005	ACE	<0.00500
Ant	<0.005	Ant	<0.00500
BaA	<0.005	BaA	<0.00500
BbF	<0.005	BbF	<0.00500
BkF	<0.005	BkF	<0.00500
BaP	<0.005	BaP	<0.00500
Chr	<0.005	Chr	<0.00500
DBahAnt	<0.005	DBahAnt	<0.00500
FLU	<0.005	FLU	<0.00500
FL	<0.005	FL	<0.00500
1,1,2,3cdPY	<0.005	1123cdPY	<0.00500
1-MN	<0.005	1MN	<0.00500
2-MN	<0.005	2MN	<0.00500
PY	<0.005	PY	<0.00500

Figure 3
SOIL CHEMISTRY MAP
NOBLE ENERGY INC ~ WPF III A18-13A

SWSW Sec. 18, T6N, R64W, 6th PM
Weld County, Colorado
40.480489°, -104.599693°

Project No. C023-007	API # 05-123-13197	Facility #
Date 5/10/23	Remediation # 25040	Filename 23007Q

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
FREMONT PROJECT NO. C023-007

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)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500		
FL03@4'	01/10/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	81	<50
SEP01@5'	01/10/2023	5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	58	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

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

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

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
WPF III A18-13 (FKA 18-3), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-007

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)
COGCC 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
COGCC 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
FL03@4'	01/10/2023	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
SEP01@5'	01/10/2023	5'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00612	0.008

Bold faced values exceed the COGCC Table 915-1 concentrations

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

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
WPF III A18-13 (FKA 18-3), WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-007

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL03@4'	01/10/2023	4'	7.93	3	3.2	0.34
SEP01@5'	01/10/2023	5'	8.43	0.629	2.77	6.03

Bold faced values exceed the COGCC Table 915-1 concentrations

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

TABLE 4
SUMMARY OF POTHOLE FIELD OBSERVATIONS
NOBLE ENERGY INC.
WPF III A18-13 FKA (18-3), WELD COUNTY, COLORADO
FREMONT PROJECT C023-007

			PID	Field
Location	Latitude	Longitude	Reading	Observations
SEP01@5'	40.48054	-104.601317	113.4	Elevated PID
FL01@4.5'	40.480495	-104.60084	0.1	No suspected impacts.
FL02@4.5'	40.4804900	-104.600101	0.4	No suspected impacts.
FL03@4.5'	40.480494	-104.599706	0.5	No suspected impacts.

TABLE 5
SUMMARY OF FLOW LINE CONDITION
NOBLE ENERGY INC.
WPF III A18-13 FKA (18-3), WELD COUNTY, COLORADO
FREMONT PROJECT C023-007

START	STOP	FOOTAGE	PIPE TYPE AND CONDITION
SEP01@5'	FL01@4.5'	138	2" Steel with black tape, good condition.
FL01@4.5'	FL02@4.5'	205	2" Steel with black tape, good condition.
FL02@4.5'	FL03@4.5'	110	2" Steel with black tape, good condition.
		453	Total linear feet of flow line

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> WPF III A18-13A		<i>Date:</i> 1/10/2023			<i>Remediation Project #:</i> 25040			
<i>Associated Wells:</i> 05-123-13197		<i>Age of Site:</i> Unknown			<i>Number of Photos Attached:</i> See attached			
<i>Starting point: (GPS coordinates and descriptions)</i> 40.480494, -104.599706								
<i>End point: (GPS coordinates and descriptions)</i> 40.480540, -104.601317								
<i>USCS Soil Type:</i> Silt and Silty Clay (ML & CL/ML)					<i>Estimated Depth to Groundwater:</i>			
<i>Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> Elevated PIDs measured at separator.								
<i>Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> No observed salt crusted soil or impacted vegetation.								
Flowlines								
<i>Flowline type</i>	Wellhead Line							
<i>Depth</i>	4-4.5'							
<i>Age</i>	Unknown							
<i>Length</i>	453							
<i>Construction Material</i>	2" Steel							
<i>Were flowlines pulled?</i>	Yes							
<i>Visual Integrity of lines</i>	Good Condition							
<i>Visual impacts if trenched</i>	None observed							
<i>PID Readings if trenched</i>	0.1 to 113.4 ppm							
<i>Sample taken? Location/Sample ID#</i>	See attached figure							
<i>Photo Number(s)</i>	See attached							
<i>Other observations regarding on location flowlines:</i> Impacted soil identified at the separator was reported under Remediation ID 25398 for the related facility.								
Summary								
<i>Was impacted soil identified?</i> <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - less than 10 cubic yards <input type="checkbox"/> Yes - more than 10 cubic yards								
<i>Total number of samples field screened:</i> 4				<i>Total number of samples collected:</i> 4				
<i>Highest PID Reading:</i> 113.4 ppm				<i>Total number of samples submitted to lab for analysis:</i> 2				
<i>If more than 10 cubic yards of impacted soil were observed: Impacts left in place.</i>								
<i>Vertical extent:</i>				<i>Estimated spill volume:</i>				
<i>Lateral extent:</i>				<i>Volume of soil removed:</i>				
<i>Is additional investigation required?</i>								
<i>Was groundwater encountered during the investigation?</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - not impacted or in contact with impacted soils <input type="checkbox"/> Yes - groundwater impacted and/or in contact with impacted soils								
<i>Measured depth to groundwater:</i>				<i>Was remedial groundwater removal conducted?</i> Yes <input type="checkbox"/> No <input type="checkbox"/>				
<i>Date Groundwater was encountered:</i>				<i>Commencement date of removal:</i>				
<i>Sheen on groundwater?</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No		<i>Volume of groundwater removed prior to sampling:</i>				
<i>Free product observed?</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No		<i>Volume of groundwater removed post sampling:</i>				
<i>Total number of samples collected:</i>				<i>Total Volume of groundwater removed:</i>				
<i>Total number of samples submitted to lab for analysis:</i>								

Photo Log



Description:

SEP01@5'

Photo Log



Description:

FL01@4.5'

Photo Log



Description:

FL02@4.5'

Photo Log



Description:

FL03@4'

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 24, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - WPF III T6N-R64W-S18 L01

Work Order #2301183

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@6"	2301183-01	Soil	01/10/23 00:00	01/10/23 16:30
SEP01@5'	2301183-02	Soil	01/10/23 00:00	01/10/23 16:30
PWVB01@8'	2301183-04	Soil	01/10/23 00:00	01/10/23 16:30
FL03@4'	2301183-06	Soil	01/10/23 00:00	01/10/23 16:30

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.

Summit Scientific

2301183

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page _____ of _____

Client: **Fremont Environmental** Project Manager: **Paul Henehan**
 Address: _____ E-Mail: **Fremont Distribution List: PaulH, EthanB, JeffG and ChrisL. @fremontenv.com**
 City/State/Zip: _____ Bill to **Noble**
 Phone: _____ Project Name: **WPF III T6N-R69W-S18 L01**
 Sampler Name: **Chris Lattes** Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	TPH, BTEX, TMBS, Napht.	PAH (915)	EC, SAR, pH, Boron	Metals (915)	TDS, Chloride, Sulfate		HOLD	
1	RST01 @ 6"	1/10/23		2			X			X			X	X	X					
2	SEPP1 @ 5'			2			X						X	X	X					
3	PWUS01 @ 7'			2			X						X	X	X					X
4	PWVB01 @ 8'			2			X						X	X	X					
5	BK601 @ 1'			2			X						X	X	X					X Hold
6	FL03 @ 4'	1/10/23		2			X			X			X	X	X					
7																				
8																				
9																				
10																				

Relinquished by: Chris Lattes	Date/Time: 1/10/23 15:30	Received by: S2	Date/Time: 1/10/23 15:30	Turn Around Time (Check)	Notes:
Relinquished by: S2	Date/Time: 1/10/23 16:30	Received by:	Date/Time: 1/10/23 16:30	Same Day _____ 72 hours	WPF A 12-13 Facility & FL
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	24 hours _____ Standard <input checked="" type="checkbox"/>	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	48 hours _____ Sample Integrity: Temperature Upon Receipt: 76 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2301183Client: Fremont Client Project ID: WPF III TON-RAW-S18101Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____ Matrix (Check all that apply) Air Soil/Solid Water Other Temp (°C) 7.6 Thermometer # 1

	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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page - of - ... not complete
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Missing sample 1
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"/>	i
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

1-10-23 1630
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

AST01@6"
2301183-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGA0226	01/19/23	01/19/23	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: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0459	115 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0380	95.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGA0228	"	01/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.80	62.4 %		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 - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

**AST01@6''
2301183-01 (Soil)**

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGA0295	01/13/23	01/14/23	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: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0235	70.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.141	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

**AST01@6''
2301183-01 (Soil)**

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	33.7	0.0617	mg/L dry	1	BGA0367	01/16/23	01/19/23	EPA 6020B	
Magnesium	6.29	0.0617	"	"	"	"	"	"	
Sodium	8.49	0.0617	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.352	0.00100	units	1	BGA0477	01/19/23	01/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.1		%	1	BGA0364	01/16/23	01/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.250	0.0100	mmhos/cm	1	BGA0397	01/17/23	01/17/23	EPA 120.1	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.14		pH Units	1	BGA0396	01/17/23	01/17/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

SEP01@5'
2301183-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0226	01/11/23	01/13/23	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: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0442	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0340	85.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	58	50	mg/kg	1	BGA0228	01/11/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.4	123 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

SEP01@5'
2301183-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGA0295	01/13/23	01/14/23	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	0.00612	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.00800	0.00500	"	"	"	"	"	"	

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	54.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	6.03	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

SEP01@5'
2301183-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	106	0.0690	mg/L dry	1	BGA0367	01/16/23	01/19/23	EPA 6020B	
Magnesium	8.15	0.0690	"	"	"	"	"	"	
Sodium	110	0.0690	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.77	0.00100	units	1	BGA0477	01/19/23	01/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	72.5		%	1	BGA0364	01/16/23	01/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.629	0.0100	mmhos/cm	1	BGA0397	01/17/23	01/17/23	EPA 120.1	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.43		pH Units	1	BGA0396	01/17/23	01/17/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

PWVB01@8'
2301183-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGA0226	01/11/23	01/13/23	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: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0312	78.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0389	97.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGA0228	01/11/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	15.6	125 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

PWVB01@8'
2301183-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGA0295	01/13/23	01/14/23	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: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0243	72.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.314	0.0100	mg/L	1	BGA0330	01/15/23	01/17/23	EPA 6020B	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

PWVB01@8'
2301183-04 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	52.6	0.0658	mg/L dry	1	BGA0367	01/16/23	01/19/23	EPA 6020B	
Magnesium	12.1	0.0658	"	"	"	"	"	"	
Sodium	60.0	0.0658	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BGA0477	01/19/23	01/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.9		%	1	BGA0364	01/16/23	01/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.580	0.0100	mmhos/cm	1	BGA0397	01/17/23	01/17/23	EPA 120.1	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BGA0396	01/17/23	01/17/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

FL03@4'
2301183-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGA0226	01/11/23	01/13/23	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: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0306	76.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	81	50		mg/kg	1	BGA0228	01/11/23	01/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	16.0	128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

FL03@4'
2301183-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGA0295	01/13/23	01/14/23	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: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.340	0.0100	mg/L	1	BGA0330	01/15/23	01/16/23	EPA 6020B	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

FL03@4'
2301183-06 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	179	0.0599	mg/L dry	1	BGA0367	01/16/23	01/19/23	EPA 6020B	
Magnesium	37.2	0.0599	"	"	"	"	"	"	
Sodium	180	0.0599	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.20	0.00100	units	1	BGA0477	01/19/23	01/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.5		%	1	BGA0364	01/16/23	01/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.00	0.0100	mmhos/cm	1	BGA0397	01/17/23	01/17/23	EPA 120.1	

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

Date Sampled: **01/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93		pH Units	1	BGA0396	01/17/23	01/17/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGA0226 - EPA 5030 Soil MS

Blank (BGA0226-BLK1)

Prepared: 01/11/23 Analyzed: 01/13/23

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.4		50-150		
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0		50-150		
Surrogate: 4-Bromofluorobenzene	0.0315		"	0.0400		78.8		50-150		

LCS (BGA0226-BS1)

Prepared: 01/11/23 Analyzed: 01/13/23

Benzene	0.0653	0.0020	mg/kg	0.0750		87.0		70-130		
Toluene	0.0699	0.0050	"	0.0750		93.2		70-130		
Ethylbenzene	0.0866	0.0050	"	0.0750		116		70-130		
m,p-Xylene	0.179	0.010	"	0.150		119		70-130		
o-Xylene	0.0852	0.0050	"	0.0750		114		70-130		
1,2,4-Trimethylbenzene	0.0916	0.0050	"	0.0750		122		70-130		
1,3,5-Trimethylbenzene	0.0973	0.0050	"	0.0750		130		70-130		
Naphthalene	0.0599	0.0038	"	0.0750		79.9		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0308		"	0.0400		76.9		50-150		
Surrogate: Toluene-d8	0.0368		"	0.0400		92.0		50-150		
Surrogate: 4-Bromofluorobenzene	0.0310		"	0.0400		77.4		50-150		

Matrix Spike (BGA0226-MS1)

Source: 2301179-01

Prepared: 01/11/23 Analyzed: 01/13/23

Benzene	0.0648	0.0020	mg/kg	0.0750	ND	86.4		70-130		
Toluene	0.0675	0.0050	"	0.0750	ND	90.0		70-130		
Ethylbenzene	0.0870	0.0050	"	0.0750	ND	116		70-130		
m,p-Xylene	0.182	0.010	"	0.150	ND	121		70-130		
o-Xylene	0.0856	0.0050	"	0.0750	ND	114		70-130		
1,2,4-Trimethylbenzene	0.0954	0.0050	"	0.0750	ND	127		70-130		
1,3,5-Trimethylbenzene	0.0968	0.0050	"	0.0750	ND	129		70-130		
Naphthalene	0.0688	0.0038	"	0.0750	ND	91.8		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.7		50-150		
Surrogate: Toluene-d8	0.0381		"	0.0400		95.3		50-150		
Surrogate: 4-Bromofluorobenzene	0.0327		"	0.0400		81.8		50-150		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0226 - EPA 5030 Soil MS

Matrix Spike Dup (BGA0226-MSD1)	Source: 2301179-01			Prepared: 01/11/23 Analyzed: 01/13/23						
Benzene	0.0670	0.0020	mg/kg	0.0750	ND	89.3	70-130	3.23	30	
Toluene	0.0711	0.0050	"	0.0750	ND	94.8	70-130	5.19	30	
Ethylbenzene	0.0894	0.0050	"	0.0750	ND	119	70-130	2.72	30	
m,p-Xylene	0.188	0.010	"	0.150	ND	125	70-130	2.94	30	
o-Xylene	0.0898	0.0050	"	0.0750	ND	120	70-130	4.79	30	
1,2,4-Trimethylbenzene	0.0950	0.0050	"	0.0750	ND	127	70-130	0.347	30	
1,3,5-Trimethylbenzene	0.0937	0.0050	"	0.0750	ND	125	70-130	3.28	30	
Naphthalene	0.0695	0.0038	"	0.0750	ND	92.6	70-130	0.954	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0356</i>		<i>"</i>	<i>0.0400</i>		<i>89.1</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0360</i>		<i>"</i>	<i>0.0400</i>		<i>90.1</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0322</i>		<i>"</i>	<i>0.0400</i>		<i>80.6</i>	<i>50-150</i>			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0228 - EPA 3550A

Blank (BGA0228-BLK1)

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	15.1		"	12.5		121		30-150			

LCS (BGA0228-BS1)

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	392	50	mg/kg	500		78.5		70-130			
Surrogate: <i>o</i> -Terphenyl	14.5		"	12.5		116		30-150			

Matrix Spike (BGA0228-MS1)

Source: 2301179-01

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	398	50	mg/kg	500	11.8	77.2		70-130			
Surrogate: <i>o</i> -Terphenyl	14.1		"	12.5		113		30-150			

Matrix Spike Dup (BGA0228-MSD1)

Source: 2301179-01

Prepared: 01/11/23 Analyzed: 01/12/23

C10-C28 (DRO)	416	50	mg/kg	500	11.8	80.8		70-130	4.40	20	
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5		107		30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

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 BGA0295 - EPA 5030 Soil MS

Blank (BGA0295-BLK1)

Prepared & Analyzed: 01/13/23

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>0.0245</i>		"	<i>0.0333</i>		<i>73.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0357</i>		"	<i>0.0333</i>		<i>107</i>	<i>40-150</i>			

LCS (BGA0295-BS1)

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0344	0.00500	mg/kg	0.0333	103	31-137
Anthracene	0.0320	0.00500	"	0.0333	95.9	30-120
Benzo (a) anthracene	0.0324	0.00500	"	0.0333	97.2	30-120
Benzo (a) pyrene	0.0358	0.00500	"	0.0333	108	30-120
Benzo (b) fluoranthene	0.0299	0.00500	"	0.0333	89.8	30-120
Benzo (k) fluoranthene	0.0335	0.00500	"	0.0333	101	30-120
Chrysene	0.0363	0.00500	"	0.0333	109	30-120
Dibenz (a,h) anthracene	0.0206	0.00500	"	0.0333	61.7	30-120
Fluoranthene	0.0336	0.00500	"	0.0333	101	30-120
Fluorene	0.0342	0.00500	"	0.0333	103	30-120
Indeno (1,2,3-cd) pyrene	0.0262	0.00500	"	0.0333	78.5	30-120
Pyrene	0.0363	0.00500	"	0.0333	109	35-142
1-Methylnaphthalene	0.0271	0.00500	"	0.0333	81.3	35-142
2-Methylnaphthalene	0.0264	0.00500	"	0.0333	79.1	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0281</i>		"	<i>0.0333</i>	<i>84.4</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0359</i>		"	<i>0.0333</i>	<i>108</i>	<i>40-150</i>

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

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 BGA0295 - EPA 5030 Soil MS

Matrix Spike (BGA0295-MS1)

Source: 2301137-01

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0241	0.00500	mg/kg	0.0333	ND	72.2	31-137			
Anthracene	0.0227	0.00500	"	0.0333	ND	68.1	30-120			
Benzo (a) anthracene	0.0257	0.00500	"	0.0333	ND	77.0	30-120			
Benzo (a) pyrene	0.0242	0.00500	"	0.0333	ND	72.5	30-120			
Benzo (b) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.6	30-120			
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.6	30-120			
Chrysene	0.0247	0.00500	"	0.0333	ND	74.1	30-120			
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120			
Fluoranthene	0.0256	0.00500	"	0.0333	ND	76.9	30-120			
Fluorene	0.0242	0.00500	"	0.0333	ND	72.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0236	0.00500	"	0.0333	ND	70.9	30-120			
Pyrene	0.0263	0.00500	"	0.0333	ND	79.0	35-142			
1-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.6	15-130			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.0	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0209</i>		<i>"</i>	<i>0.0333</i>		<i>62.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0261</i>		<i>"</i>	<i>0.0333</i>		<i>78.3</i>	<i>40-150</i>			

Matrix Spike Dup (BGA0295-MSD1)

Source: 2301137-01

Prepared & Analyzed: 01/13/23

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	63.8	31-137	12.3	30
Anthracene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	10.4	30
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	10.6	30
Benzo (a) pyrene	0.0226	0.00500	"	0.0333	ND	67.9	30-120	6.68	30
Benzo (b) fluoranthene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	11.8	30
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.3	30-120	15.9	30
Chrysene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	12.9	30
Dibenz (a,h) anthracene	0.0186	0.00500	"	0.0333	ND	55.8	30-120	5.73	30
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.5	30-120	15.9	30
Fluorene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	11.1	30
Indeno (1,2,3-cd) pyrene	0.0223	0.00500	"	0.0333	ND	66.8	30-120	6.01	30
Pyrene	0.0231	0.00500	"	0.0333	ND	69.3	35-142	13.1	30
1-Methylnaphthalene	0.0199	0.00500	"	0.0333	ND	59.6	15-130	6.37	50
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	62.9	15-130	0.245	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.4</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0226</i>		<i>"</i>	<i>0.0333</i>		<i>67.8</i>	<i>40-150</i>		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0330 - EPA 3050B

Blank (BGA0330-BLK1)

Prepared: 01/15/23 Analyzed: 01/16/23

Boron ND 0.0100 mg/L

LCS (BGA0330-BS1)

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 5.16 0.0100 mg/L 5.00 103 80-120

Duplicate (BGA0330-DUP1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 0.208 0.0100 mg/L 0.206 0.774 20

Matrix Spike (BGA0330-MS1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 5.91 0.0100 mg/L 5.00 0.206 114 75-125

Matrix Spike Dup (BGA0330-MSD1)

Source: 2301180-03

Prepared: 01/15/23 Analyzed: 01/16/23

Boron 6.47 0.0100 mg/L 5.00 0.206 125 75-125 9.08 25

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0367 - General Preparation

Blank (BGA0367-BLK1)

Prepared: 01/16/23 Analyzed: 01/18/23

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

LCS (BGA0367-BS1)

Prepared: 01/16/23 Analyzed: 01/18/23

Calcium	5.15	0.0500	mg/L wet	5.00		103	70-130			
Magnesium	5.30	0.0500	"	5.00		106	70-130			
Sodium	5.42	0.0500	"	5.00		108	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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

Summit Scientific

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

Batch BGA0364 - General Preparation

Duplicate (BGA0364-DUP1)	Source: 2301172-01		Prepared: 01/16/23 Analyzed: 01/17/23		
% Solids	93.1	%	91.9	1.27	20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0397 - General Preparation

Blank (BGA0397-BLK1)

Prepared & Analyzed: 01/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGA0397-BS1)

Prepared & Analyzed: 01/17/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BGA0397-DUP1)

Source: 2301161-02

Prepared & Analyzed: 01/17/23

Specific Conductance (EC) 0.383 0.0100 mmhos/cm 0.379 0.866 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 01/24/23 12:20

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 BGA0396 - General Preparation

LCS (BGA0396-BS1)

Prepared & Analyzed: 01/17/23

pH 9.07 pH Units 9.18 98.8 95-105

Duplicate (BGA0396-DUP1)

Source: 2301161-02

Prepared & Analyzed: 01/17/23

pH 7.77 pH Units 7.85 1.02 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - WPF III T6N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
01/24/23 12:20

Notes and Definitions

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