

# **FREMONT ENVIRONMENTAL INC.**

May 4, 2023

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:           **Flowline Closure Data Submittal**  
Born Sitzman 1 (Flowline)  
API # 05-123-11308  
NENE Sec. 27, T4N, R64W  
Weld County, Colorado  
Fremont Project No. C023-067  
Facility # 243516, Remediation #25836

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted Flowline Closure activities for the Noble Energy Inc. (Noble) Born Sitzman 1. Impacted soil was not encountered during abandonment activities. Details of the Born Sitzman 1 flowline closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (303) 956-8714 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Paul V. Henehan, P.E.  
Senior Consultant

Attachments:

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

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

## Flowline Closure Checklist

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

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & Number: <b>COGCC Facility</b> Born Sitzman 1, C 27-17 Facility: 447576		Date: <b>03/03/2023</b>			Remediation Project #: <b>25836</b>			
Associated Wells: Born Sitzman 1 API: 05-123-11308 Facility ID: 243516		Age of Site: <b>1983</b>			Number of Photos Attached: <b>5 Photos</b>			

Starting point: (GPS coordinates and descriptions) **40.289063, -104.529671**

End point: (GPS coordinates and descriptions) **40.290145, -104.529578**

USCS Soil Type: **SC** Estimated Depth to Groundwater: **N/A**

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  
**None observed**

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)  
**None observed**

#### Flowlines

Flowline type	2" Steel							
Depth	Roughly 3ft							
Age	1983							
Length	390ft							
Construction Material	None Present							
Were flowlines pulled?	Yes							
Visual Integrity of lines	No Damage							
Visual impacts if trenched	N/A							
PID Readings if trenched	High @ 7.8ppm							
Sample taken? Location/Sample ID#	1FL01 @ 4.0' 1FL05 @ 3.0'							
Photo Number(s)	Photos 1A-1E							

Other observations regarding on location flowlines:

#### Summary

Was impacted soil identified?		<b>No</b>	Yes - less than 10 cubic yards	Yes - more than 10 cubic yards
Total number of samples field screened: <b>3 samples</b>		Total number of samples collected: <b>5 samples</b>		
Highest PID Reading: <b>High @ 7.8ppm (1FL01 @ 4.0')</b>		Total number of samples submitted to lab for analysis: <b>2 samples</b>		
If more than 10 cubic yards of impacted soil were observed:				
Vertical extent: <b>N/A</b>		Estimated spill volume: <b>N/A</b>		
Lateral extent: <b>N/A</b>		Volume of soil removed: <b>N/A</b>		
Is additional investigation required? <b>N/A</b>				
Was groundwater encountered during the investigation?		<b>No</b>	Yes - not impacted or in contact with impacted soils	Yes - groundwater impacted and/or in contact with impacted soils
Measured depth to groundwater: <b>N/A</b>		Was remedial groundwater removal conducted? Yes No		
Date Groundwater was encountered: <b>N/A</b>		Commencement date of removal: <b>N/A</b>		
Sheen on groundwater? Yes No		Volume of groundwater removed prior to sampling: <b>N/A</b>		
Free product observed? Yes No		Volume of groundwater removed post sampling: <b>N/A</b>		
Total number of samples collected: <b>N/A</b>		Total Volume of groundwater removed: <b>N/A</b>		
Total number of samples submitted to lab for analysis: <b>N/A</b>				

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**BORN SITZMAN 1, WELD COUNTY, COLORADO**  
**REM # 25836**

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
1FL05@3.0'	3/3/2023	3.0 Ft	40.290145	-104.529578	-	1.4
1FL01@4.0'	3/3/2023	4.0 Ft	40.289063	-104.529671	-	7.8
1FL03@4.0'	3/3/2023	4.0 Ft	40.289645	-104.529632	-	0.0
1FL02@5.0'	3/3/2023	5.0 Ft	40.289352	-104.529639	-	0.0
1FL04@5.0'	3/3/2023	5.0 Ft	40.289973	-104.529636	-	0.0

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

in. = Inches

ft. = Feet

bgs = Below ground surface

TABLE 2  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE 100322  
BORN SITZMAN 1, WELD COUNTY, COLORADO  
REM # 25836

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 (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	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	500**		
1FL05@3.0'	3/3/2023	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
1FL01@4.0'	3/3/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

1. Bold values exceed the ECMC Table 915-1 limit(s)
  2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
  3. \* Indicates laboratory minimum detection limit in excess of SSL
  4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg
- (<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
BORN SITZMAN 1, WELD COUNTY, COLORADO  
REM # 25836

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
1FL05@3.0'	3/3/2023	3.0 Ft	<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
1FL01@4.0'	3/3/2023	4.0 Ft	<0.00500	<0.00500	0.00512	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00728	<0.00500	<0.00500	0.00843	<0.00500	<0.00500

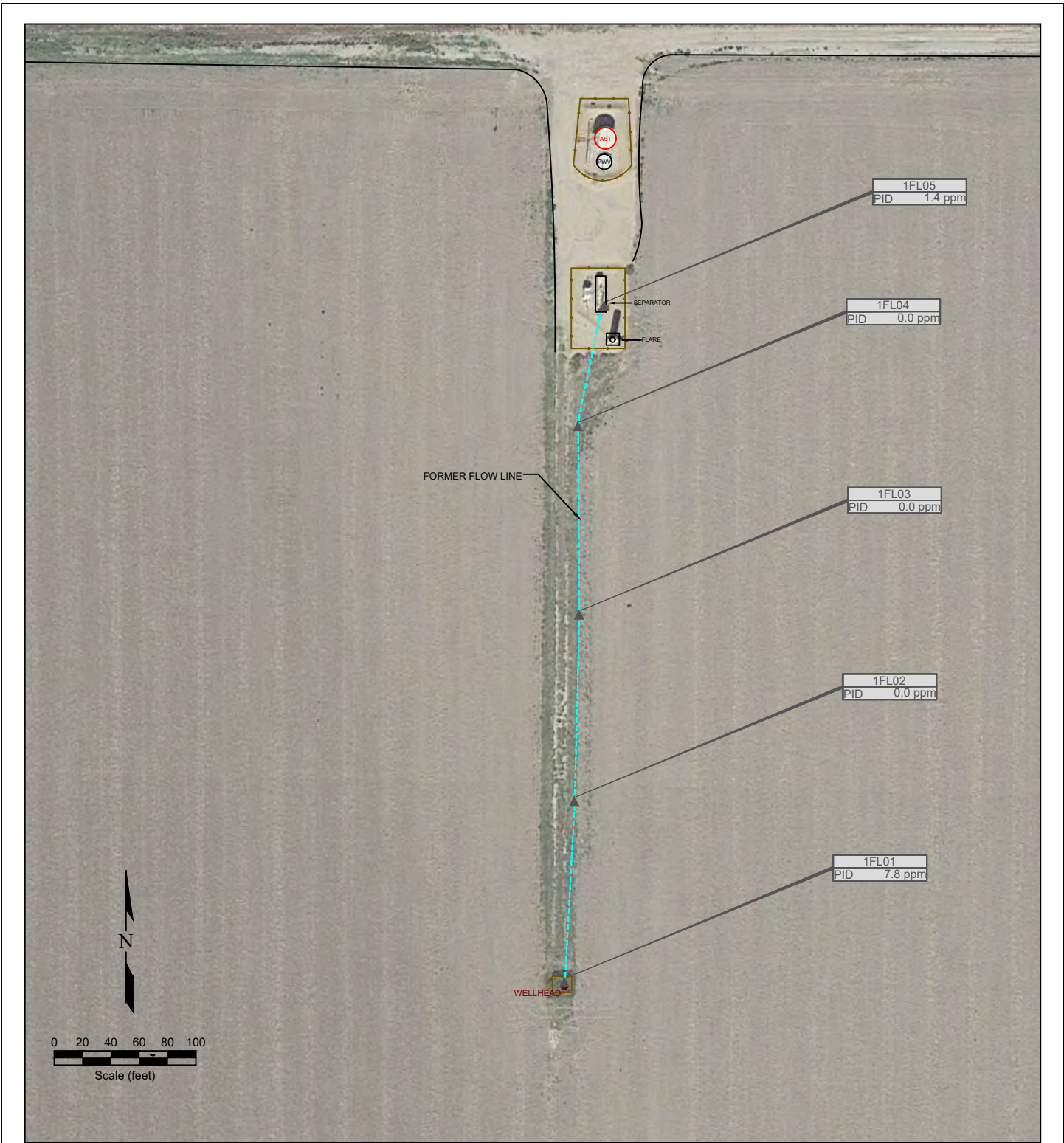
1. Bold values exceed the ECMC Table 915-1 limit(s)
  2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
  3. \* Indicates laboratory minimum detection limit in excess of SSL
  4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg
- (<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed

**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE 100322**  
**BORN SITZMAN 1, WELD COUNTY, COLORADO**  
**REM # 25836**

Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	4	6	2
1FL05@3.0'	3/3/2023	3.0 Ft	7.81	0.146	0.245	0.325
1FL01@4.0'	3/3/2023	4.0 Ft	8.03	0.174	0.831	0.490

1. **1** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.
  2. **2** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
  3. Brown highlighted soil analytical values indicate a regulatory exceedance.
- NA - Not analyzed/Not applicable





**LEGEND**

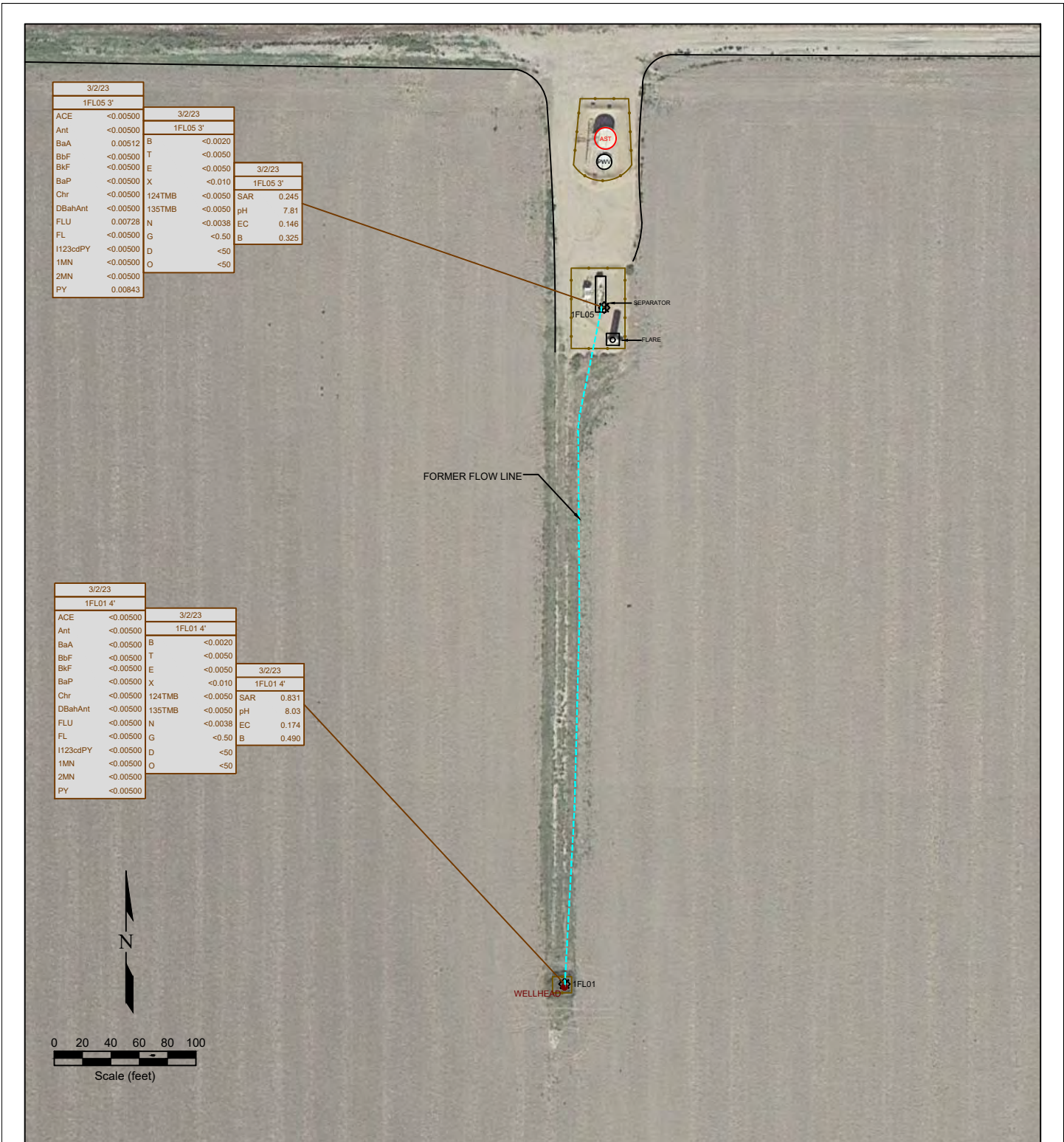
● WELL HEAD LOCATION	AST ABOVE GROUND STORAGE TANK	FORMER FACILITY	— FENCE LINE
▲ PID READING LOCATION			▤ CONTAINMENT BERM
			— CONTAINMENT WALL
			- - - FLOW LINE

**Figure 2  
SITE MAP**

**NOBLE ENERGY INC~ BORN SITZMAN 1**

NENE Sec. 27, T4N, R64W, 6th PM  
Weld County, Colorado  
40.289050°, -104.529660°

Project No. <b>C023-067</b>	API # <b>05-123-11308</b>	Facility # <b>243516</b>	
Date <b>4/19/23</b>	Remediation # <b>25836</b>	Filename <b>23067Q</b>	



3/2/23		3/2/23	
1FL05 3'		1FL05 3'	
ACE	<0.00500	B	<0.0020
Ant	<0.00500	T	<0.0050
BaA	0.00512	E	<0.0050
BbF	<0.00500	X	<0.010
BkF	<0.00500	124TMB	<0.0050
BaP	<0.00500	135TMB	<0.0050
Chr	<0.00500	N	<0.0038
DBahAnt	<0.00500	G	<0.50
FLU	0.00728	D	<50
FL	<0.00500	O	<50
I123cdPY	<0.00500		
1MN	<0.00500		
2MN	<0.00500		
PY	0.00843		

3/2/23		3/2/23	
1FL01 4'		1FL01 4'	
ACE	<0.00500	B	<0.0020
Ant	<0.00500	T	<0.0050
BaA	<0.00500	E	<0.0050
BbF	<0.00500	X	<0.010
BkF	<0.00500	124TMB	<0.0050
BaP	<0.00500	135TMB	<0.0050
Chr	<0.00500	N	<0.0038
DBahAnt	<0.00500	G	<0.50
FLU	<0.00500	D	<50
FL	<0.00500	O	<50
I123cdPY	<0.00500		
1MN	<0.00500		
2MN	<0.00500		
PY	<0.00500		

3/2/23	
1FL05 3'	
SAR	0.245
pH	7.81
EC	0.146
B	0.325

3/2/23	
1FL01 4'	
SAR	0.831
pH	8.03
EC	0.174
B	0.490

**LEGEND**

- WELL HEAD LOCATION
- ⊗ SOIL SAMPLE LOCATION
- AST ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- FLOW LINE

03/24/2021		DATE SAMPLED	
N Wall @ 3'		SAMPLE ID and DEPTH (ft)	
ACE	<0.005	ANTHRACENE (mg/kg)	
Ant	<0.005	ANTHRACENE (mg/kg)	
BaA	<0.005	BENZO (A) ANTHRACENE (mg/kg)	
BbF	<0.005	BENZO (B) FLUORANTHENE (mg/kg)	
BkF	<0.005	BENZO (K) FLUORANTHENE (mg/kg)	
BaP	<0.005	BENZO (A) PYRENE (mg/kg)	
Chr	<0.005	CHRYSENE (mg/kg)	
DBahAnt	<0.005	DBENZ (A,H) ANTHRACENE (mg/kg)	
FLU	<0.005	FLUORENE (mg/kg)	
FL	<0.005	FLUORANTHENE (mg/kg)	
I123cdPY	<0.005	INDENO (1,2,3-CD) PYRENE (mg/kg)	
1-MN	<0.005	1-METHYLNAPHTHALENE (mg/kg)	
2-MN	<0.005	2-METHYLNAPHTHALENE (mg/kg)	
PY	<0.005	PYRENE (mg/kg)	

01/22/21		DATE SAMPLED	
N Wall @ 1'		SAMPLE ID and DEPTH (ft)	
B	<0.0020	BENZENE (mg/kg)	
T	<0.0050	TOLUENE (mg/kg)	
E	<0.0050	ETHYLBENZENE (mg/kg)	
X	<0.010	TOTAL XYLENES (mg/kg)	
1,2,4-TB	<0.0050	1,2,4-TRIMETHYLBENZENE (mg/kg)	
1,3,5-TB	<0.0050	1,3,5-TRIMETHYLBENZENE (mg/kg)	
N	<0.010	NAPHTHALENE (mg/kg)	
G	<0.50	TPH-GRO (mg/kg)	
D	<50	TPH-DRO (mg/kg)	
O	<50	TPH-ORO (mg/kg)	

01/22/21		DATE SAMPLED	
N Wall @ 1'		SAMPLE ID & DEPTH (ft)	
SAR	83.76	SAR	(units)
pH	9.4	pH	(pH units)
EC	3.34	EC	(microhm/cm)
BORON	5.4	BORON	(mg/L)

Figure 3  
**SOIL CHEMISTRY MAP**  
**NOBLE ENERGY INC~ BORN SITZMAN 1**

NENE Sec. 27, T4N, R64W, 6th PM  
 Weld County, Colorado  
 40.289050°, -104.529660°

Project No. <b>C023-067</b>	API # <b>05-123-11308</b>	Facility # <b>243516</b>
Date <b>4/19/23</b>	Remediation # <b>25836</b>	Filename <b>23067Q</b>



# Photo Log



*Description:*

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# Photo Log



*Description:*

# Photo Log



*Description:*

# Photo Log



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