

FREMONT ENVIRONMENTAL INC.

February 1, 2024

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

Subject: **Facility Closure Data Submittal**
Bernhardt 64N67W 13NWNE
NWNE Sec. 13, T4N, R67W
Weld County, Colorado
Fremont Project No. C023-131
Facility # 329441,332683 Remediation # 27437

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted facility closure activities for the Noble Energy Inc. (Noble) Bernhardt 64N67W 13NWNE. Impacted soil was encountered during abandonment activities. Details of the Bernhardt 64N67W 13NWNE facility closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (303) 261-6246 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Stanley Gilbert
Environmental Scientist

Attachments:

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

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

Tank Battery Closure Checklist

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

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure	X	Partially Buried Vault Closure
Site Name & COGCC Facility Number: Bernhardt 64N67W 13NWN Facility #:329441/332683		Date: 05/15/2023						Remediation Project #: 27437
Associated Wells: Bernhardt 013-07 API:05-123-20183 Bernhardt 13-12 API:05-123-17357		Age of Site: 2001						Number of Photos Attached: See Attached
Location: (GPS coordinates of southeaster berm) 40.316842, -104.836827								Estimated Facility Size (acres): ~1Acre
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good housekeeping. General condition for all the on-site equipment looked fine. Well maintained.								
USCS Soil Type: SW					Estimated Depth to Groundwater: >35'			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) Impacted soils encountered and extends down to unknown depth								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed								
Tanks								
Tank Contents	OIL	OIL						
Size (barrels)	300	300						
Age	2001	2001						
Construction Material	Steel	Steel						
Tank type (AST/DRU, etc.)	AST	AST						
Visual Integrity of Tank	Good	Good						
Condition of tank footprint	Good	Good						
PID Readings								
Soil impacts present at valves or hatches?	No	No						
PID Readings	High @ 499.1ppm	High @ 20.2ppm						
Sample taken? Location/ Sample ID#	Yes, see attached	Yes, see attached						
Photo Number(s)	See attached	See attached						
Other observations regarding tanks:								
Separators								
Separator size	Unknown	Unknown						
Vertical or Horizontal	Horizontal	Horizontal						
Age	2001	2001						
Soil impacts observed? If yes,	No	Yes						
PID Readings	High @ 0.0ppm	High @ 1707ppm						
Sample taken? Location/ Sample ID#	Yes, see attached	Yes, see attached						
Photo Number(s)	See attached	See attached						
Other observations regarding separators								
Third Party Equipment								
Type	Meter house	Meter House						
Age	2001	2001						

Third Party	Unknown	Unkown												
Removal Date	Still on site	Still on site												
Sample taken?	Field Screened Only	Field Screened Only												
PID Readings	High @ 0.0ppm	High @ 0.1ppm												
Photo Number(s)	See attached	See attached												
Other Facility Equipment														
Equipment type	Combustion Unit													
Equipment	Unkown													
Age	2001													
Soil impacts	No													
PID Readings	High @ 0.0ppm													
Sample taken?	Field Screened Only													
Photo Number(s)	See attached													
Other observations regarding other facility or third party equipment:														
Combustion unit removed prior to sampling event														
Summary														
Was impacted soil identified? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes - less than 10 cubic yards <input type="checkbox"/> Yes - more than 10 cubic yards														
Total number of samples field screened: 7					Total number of samples collected: 7									
Highest PID Reading: 1707ppm (SEP DL 4 Feet)					Total number of samples submitted to lab for analysis: 4									
If more than 10 cubic yards of impacted soil were observed:														
Vertical extent: Unknown					Estimated spill volume: Unknown									
Lateral extent: Unknown					Volume of soil removed: Left in place									
Is additional investigation required? Yes, site investigation needed														
Was groundwater encountered during the investigation? <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														
Measured depth to groundwater:					Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No									
Date Groundwater was encountered:					Commencement date of removal:									
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No					Volume of groundwater removed prior to sampling:									
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> 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:														

Buried or Partially Buried Vessel Closure Checklist

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

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure	X	Tank Battery Closure
Site Name & COGCC Facility Number: Bernhardt 64N67W 13NWNE Facility #:329441/332683		Date: 05/15/2023						Remediation Project #: 27437
Associated Wells: Bernhardt 013-07 API:05-123-20183 Bernhardt 13-12 API:05-123-17357		Age of Site: 2001						Number of Photos Attached: See Attached
Location: (GPS coordinates of vault or southeastern tank berm for multiple)							Estimated Facility Size (acres): ~1Ac+	

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)

Good housekeeping. General condition for all the on-site equipment looked fine. Waste management well maintained.

USCS Soil Type: SW	Estimated Depth to Groundwater: >35'
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Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

Impacted soils encountered and extends down to unknown depth

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

None observed

Buried or Partially Buried Vessels

Tank Contents	Produced water	Produced water							
Size (barrels)	100	100							
Age	2001	2001							
Construction Material	PBV Concrete	PBV Concrete							
Visual Integrity of Tank	Good	Good							
Condition of tank	Impacts Present	Impacts Present							
PID Readings	High @ 499.1ppm	High @ 20.2ppm							
Condition of dunnage	Good	Good							
PID Readings	See attached	See attached							
Sample taken? Location/Sample ID#	Yes, see attached	Yes, see attached							
Photo Number(s)	See attached	See attached							

Other observations regarding partially buried vessels:

Summary

Was impacted soil identified?	
<input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes - less than 10 cubic yards
<input type="checkbox"/> Yes - more than 10 cubic yards	
Total number of samples field screened: 10	Total number of samples collected: 10
Highest PID Reading: 499.1ppm (PWV01 N Wall 2 Feet)	Total number of samples submitted to lab for analysis: 2
If more than 10 cubic yards of impacted soil were observed:	
Vertical extent: Unknown	Estimated spill volume: Unknown
Lateral extent: Unknown	Volume of soil removed: Soil left in place
Is additional investigation required?	
Yes, site investigation needed	
Was groundwater encountered during the investigation?	
<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	
Measured depth to groundwater:	Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No
Date Groundwater was encountered:	Commencement date of removal:
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No	Volume of groundwater removed prior to sampling:
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> 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
FIELD DATA SUMMARY TABLE
NOBLE 100322
BERNHARDT-64N67W 13NWNE, WELD COUNTY, COLORADO
REM # 27437

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01 0.5 Feet	05/15/2023	0.5 Ft	40.3187234	-104.8387806	-	7.3 ppm
AST02 0.5 Feet	05/15/2023	0.5 Ft	40.3187165	-104.8389964	-	0.0 ppm
MH01 0.5 Feet	05/15/2023	0.5 Ft	40.3184244	-104.8390634	-	0.0 ppm
MH02 0.5 Feet	05/15/2023	0.5 Ft	40.3184810	-104.8388352	-	0.1 ppm
FLARE 0.5 Feet	05/15/2023	0.5 Ft	40.3183802	-104.8387791	-	0.0 ppm
PWV01 N WALL 2 Feet	05/15/2023	2.0 Ft	40.3186966	-104.8387852	0.9	499.1 ppm
PWV01 E WALL 2 Feet	05/15/2023	2.0 Ft	40.3186746	-104.8387609	-	0.1 ppm
PWV01 W WALL 2 Feet	05/15/2023	2.0 Ft	40.3186755	-104.8388176	-	6.6 ppm
PWV01 S WALL 2 Feet	05/15/2023	2.0 Ft	40.3186583	-104.8387896	-	0.6 ppm
PWV02 N WALL 2 Feet	05/15/2023	2.0 Ft	40.3187032	-104.8390168	-	10.1 ppm
PWV02 E WALL 2 Feet	05/15/2023	2.0 Ft	40.3186703	-104.8389791	-	0.0 ppm
PWV02 W WALL 2 Feet	05/15/2023	2.0 Ft	40.3186735	-104.8390472	-	0.0 ppm
PWV02 S WALL 2 Feet	05/15/2023	2.0 Ft	40.3186513	-104.8390196	-	0.0 ppm
FL06 3 Feet	5/16/2023	3.0 Ft	40.3183923	-104.8390104	-	0.0 ppm
SEP01 DL 3 feet	05/15/2023	3.0 Ft	40.3184913	-104.8388003	-	0.0 ppm
PWV01 FLOOR 3 Feet	05/15/2023	3.0 Ft	40.3186800	-104.8387915	-	18.0 ppm
FL20 4 Feet	5/17/2023	4.0 Ft	40.3184518	-104.8387867	-	0.0 ppm
PWV02 FLOOR 4 feet	05/15/2023	4.0 Ft	40.3186713	-104.8390068	1.0	20.2 ppm

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
BERNHARDT-64N67W 13NWNE, WELD COUNTY, COLORADO
REM # 27437

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
SEP02 DL 4 feet	05/15/2023	4.0 Ft	40.3184371	-104.8390436	1.0	1707 ppm

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
BERNHARDT-64N67W 13NWE, WELD COUNTY, COLORADO
REM # 27437

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**		
AST01 0.5 feet	05/15/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02 0.5 feet	05/15/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01 N WALL 2 feet	05/15/2023	2.0 Ft	0.02	0.19	0.021	0.26	0.037	0.05	0.0065	<500	1.9	<50	<50
FL06 3 Feet	5/16/2023	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01 DL 3 feet	05/15/2023	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL20 4 Feet	5/17/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<50	<50	<50
PWV02 FLOOR 4 feet	05/15/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<50	<50	<50
SEP02 DL 4 feet	05/15/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	0.052	<0.0050	0.22	<0.0038	<500	5.1	57	<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
BERNHARDT-64N67W 13NWNW, WELD COUNTY, COLORADO
REM # 27437

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
AST01 0.5 feet	05/15/2023	0.5 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
AST02 0.5 feet	05/15/2023	0.5 Ft	<0.00500	<0.00500	0.0108	0.0121	0.00521	<0.00500	0.0139	<0.00500	0.00665	<0.00500	<0.00500	0.0104	<0.00500	0.00625
PWV01 N WALL 2 feet	05/15/2023	2.0 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	0.00658
FL06 3 Feet	5/16/2023	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
SEP01 DL 3 feet	05/15/2023	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
FL20 4 Feet	5/17/2023	4.0 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
PWV02 FLOOR 4 feet	05/15/2023	4.0 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	0.00702	0.00675
SEP02 DL 4 feet	05/15/2023	4.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0089	<0.00500	<0.00500	0.0129	0.00899

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
BERNHARDT-64N67W 13NWN, WELD COUNTY, COLORADO
REM # 27437

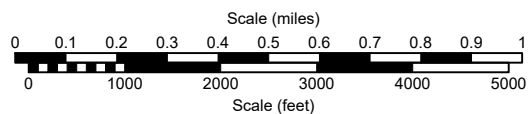
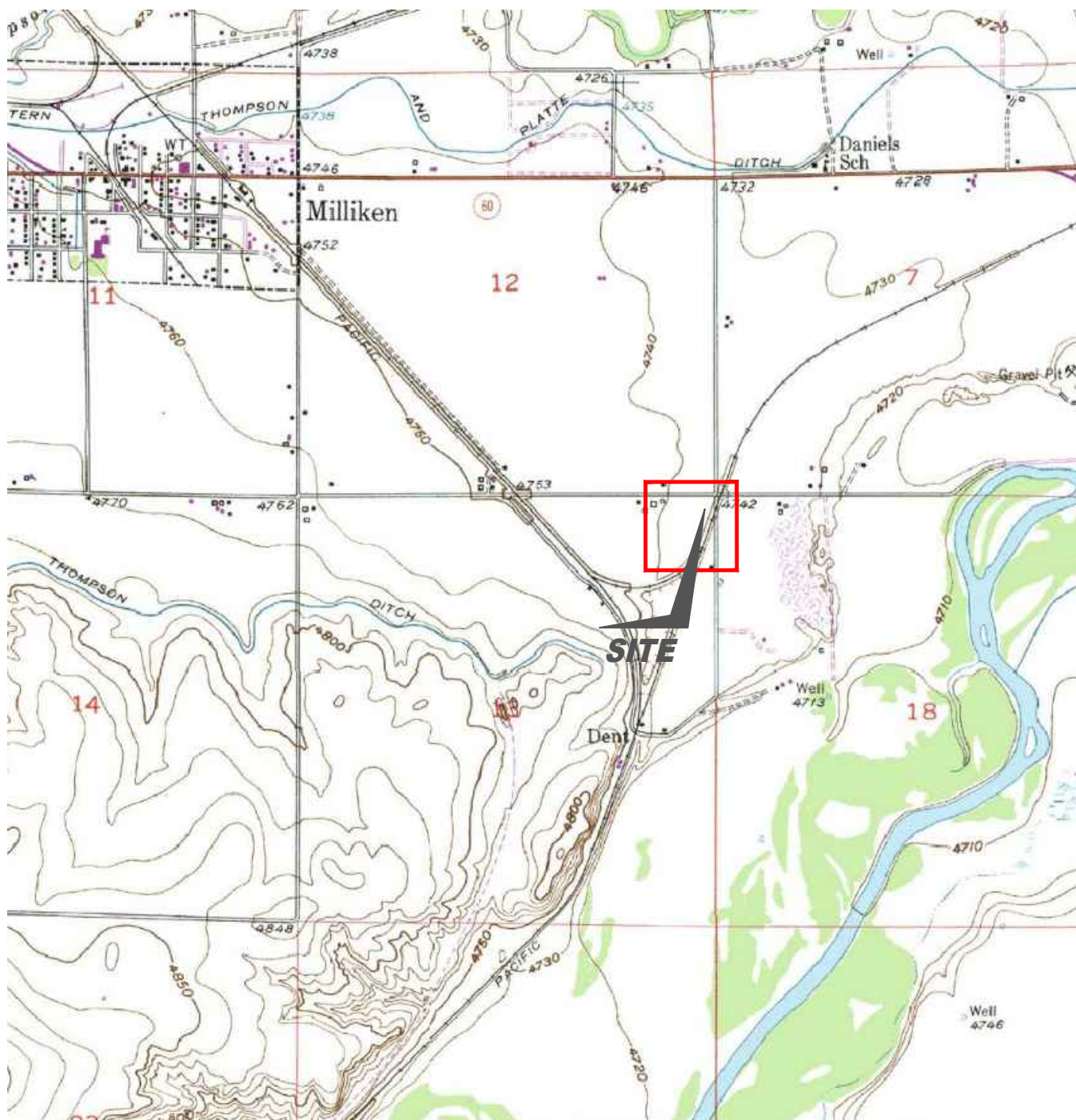
Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	4	6	2
AST01 0.5 feet	05/15/2023	0.5 Ft	7.43	0.244	0.558	0.0749
AST02 0.5 feet	05/15/2023	0.5 Ft	7.66	0.304	0.164	0.124
PWV01 N WALL 2 feet	05/15/2023	2.0 Ft	6.96	0.224	0.142	0.0964
FL06 3 Feet	5/16/2023	3.0 Ft	4.09	0.187	0.0610	0.0936
SEP01 DL 3 feet	05/15/2023	3.0 Ft	6.12	0.387	0.677	0.118
FL20 4 Feet	5/17/2023	4.0 Ft	6.67	0.134	0.0321	0.145
PWV02 FLOOR 4 feet	05/15/2023	4.0 Ft	7.61	0.371	0.453	0.0909
SEP02 DL 4 feet	05/15/2023	4.0 Ft	8.11	0.408	0.947	0.194

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.

2. **Bold** 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



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1

SITE LOCATION MAP

Noble Energy, Inc.

Bernhardt 64N67W 13NWNE

NWNE Sec. 13, T4N, R67W, 6th PM

Weld County, Colorado

40.316842°, -104.836827°

Project #
CO23-131

API #

Facility #
329441

Date

4/10/25

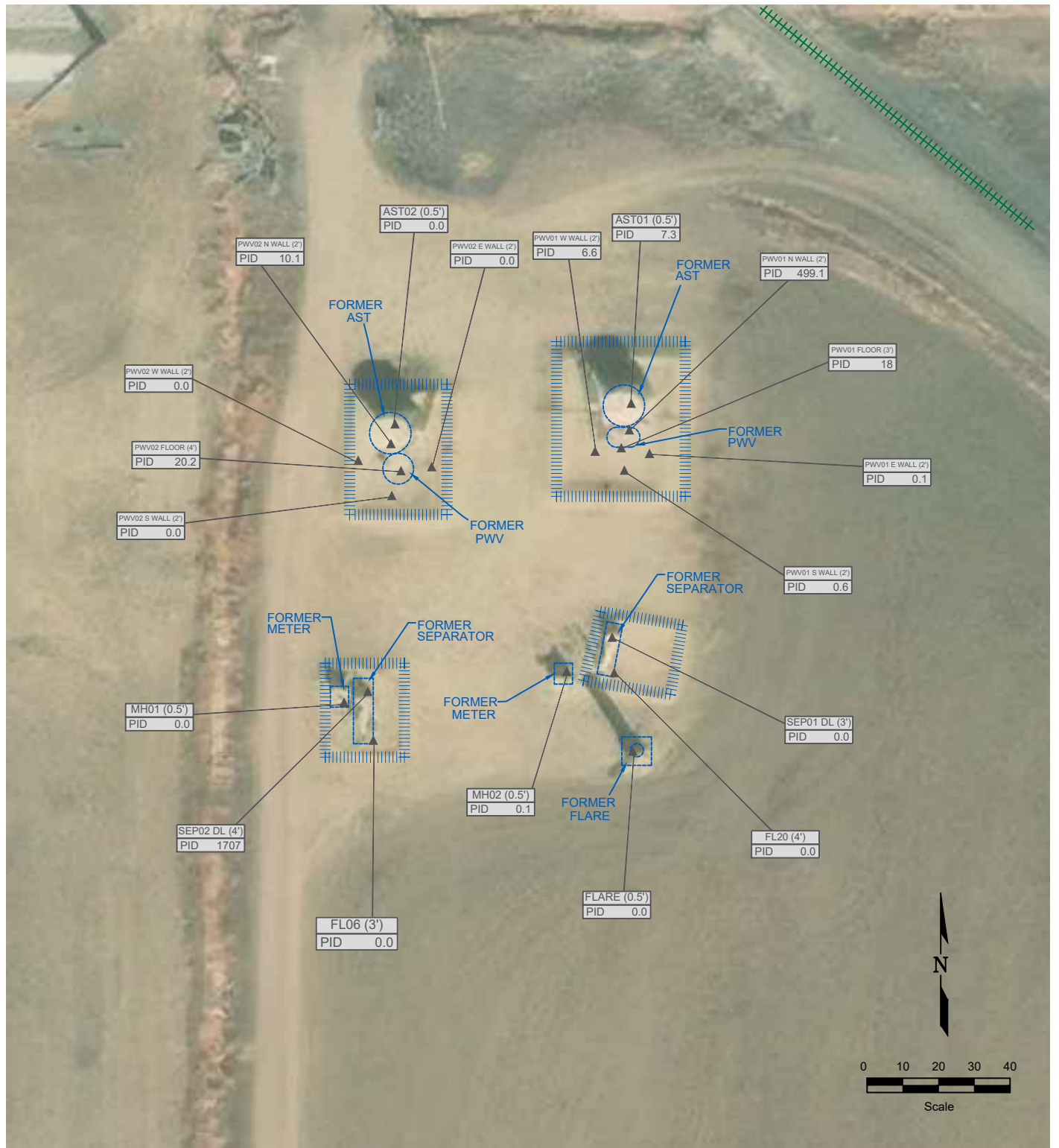
Remediation #

27437

Filename

23131T1





LEGEND

● WELLHEAD LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FACILITY	CONTAINMENT BERM
▲ PID READING LOCATION			FENCE LINE
			RAILROAD TRACKS

AST01 (0.5') PID 7.3 PID READING SAMPLE IDENTIFICATION PHOTO IONIZATION DETECTION / PARTS PER MILLION

Figure 2
SITE MAP

Noble Energy, Inc.
Bernhardt 64N67W 13NWNE
 NWNE Sec. 13, T4N, R67W, 6th PM
 Weld County, Colorado
 40.316842°, -104.836827°

Project # CO23-131	API #	Facility # 329441
Date 4/10/25	Remediation # 27437	Filename 23131Q1



Photo Log



Description:

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Photo Log



Description:

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Photo Log



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