

FREMONT ENVIRONMENTAL INC.

May 10, 2025

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

Subject: **Excavation Report**
 Wells Ranch AA 21-06
 SENW Sec. 21, T6N, R63W
 API # 05-123-26812
 Weld County, Colorado
 Fremont Project No. C023-107
 Remediation #25990

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Wells Ranch AA 21-06 wellhead release site in Weld County, Colorado. The enclosed report describes excavation actions to remediate impacted soil at the site.

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.

A handwritten signature in black ink, appearing to read "Ethan Black". The signature is written in a cursive, flowing style.

Ethan D. Black, PG
Consultant

Enclosure

EXCAVATION REPORT

NOBLE ENERGY INC.

WELLS RANCH AA 21-06 WELLHEAD

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C023-107

API # 05-123-26812, REMEDIATION #25990

Prepared by:

**Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714**

May 10, 2025

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EXCAVATION REPORT
NOBLE ENERGY INC.
WELLS RANCH AA 21-06 WELLHEAD
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-107
API # 05-123-26812, REMEDIATION #25990

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of impacted soil at the Wells Ranch AA 21-06 wellhead release location in Weld County, Colorado. Excavation of impacted soil was completed on January 30, 2025.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Wells Ranch AA 21-06 wellhead (Wells Ranch) site is located approximately 7.94 miles northeast of Kersey, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 0.72 miles southwest of the intersection of County Road 68 and County Road 67. The location is further described as the SE ¼ of the NW ¼ of Section 21, Township 6N, Range 63W.

2.2 Site History

The Wells Ranch AA 21-06 oil well was completed in September 2008 to a measured depth of 6,799 feet. Soil impacts related to a historical release at the wellhead were observed following wellhead decommissioning activities completed in April 2023.

3.0 FIELD ACTIVITIES

Remediation efforts consisted of the excavation of impacted soil at and adjacent to the release area. The subsurface generally consisted of 18 inches of loam underlain by 6.5 feet

of non-plastic clay to at least eight feet below ground surface (bgs) within the excavation. Groundwater was not encountered within the 20'x20'x8' deep excavation.

Excavation of the release area began and was completed on January 30, 2025. Five soil samples were collected at the Wells Ranch wellhead location over the course of the single-day excavation at 5.5 feet in the excavation sidewalls and eight feet in the excavation floor and field screened using a photoionization detector (PID). All soil samples collected within the excavation were submitted for analysis.

The soil samples were analyzed by Summit Scientific Inc. in Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene (TMB), total petroleum hydrocarbons (TPH) – gasoline range organics (TPH-GRO) by EPA Method 8260B, and TPH – diesel range organics (TPH-DRO) and TPH - residual range organics (TPH-ORO) by EPA Method 8015, polycyclic aromatic hydrocarbons (PAHs): acenaphthene, anthracene, benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, chrysene, dibenz (a,h) anthracene, fluoranthene, fluorene, indeno (1,2,3-cd) pyrene, pyrene, 1-methylnaphthalene, 2-methylnaphthalene by EPA method 8270D, Total Metals by EPA method 6020B, and hexavalent chromium by EPA method 7196, sodium absorption ratio (SAR) by EPA 6020/USDA60 6(2) saturated paste extraction method, specific conductance by EPA Method 120.1 saturated paste extraction and, pH by APHA/ASTM/EPA Methods, saturated paste extraction. The laboratory's reports and chain-of-custody documentation are included as a stand-alone document and summarized in Tables 2 to 5.

The laboratory analyses indicate that petroleum constituents in soil samples collected from the excavation achieved the ECMC Table 915-1 Protection of Groundwater Standards (PGSSLs) for organic petroleum constituents. However, five samples collected

within the excavation exceeded the ECMC Table 915-1 Residential Soil Screening Level (RSSLs) for arsenic, and the ECMC Table 915-1 PGSSLs for barium and cadmium. Three samples exceeded the PGSSLs for lead. The Operator proposes collect background samples from five locations in native soil, adjacent to the former wellhead from similar depths and lithologies as the excavation confirmation samples and submit the samples for analysis of Table 915-1 metals and soil suitability for reclamation constituents.

Approximately 70 cubic yards of impacted soil were removed via backhoe by 4X Industrial Services during the excavation. The impacted soil was disposed of at the Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste. The excavation was backfilled using clean, imported fill.

4.0 DISCUSSION

As demonstrated by the soil sampling, petroleum impacted soil was removed from the release area at the Wells Ranch location by excavation. This was confirmed by the analyses of soil samples collected from the excavation which were below the ECMC Table 915-1 PGSSLs for organic petroleum constituents.

Approximately 70 cubic yards of impacted soil were removed and transported to the landfill. The soil data are illustrated and summarized in the attached tables and figures.

Background sampling will be conducted to characterize native soil to attribute elevated concentrations of Table 915-1 metals (arsenic, barium, cadmium, and lead) present within the excavation to native soil conditions. Proposed sample locations are displayed on Figure 2 of the attached.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



5/10/25

Date_____

Ethan D. Black, P.G.

Geologist

Reviewed by:



5/10/25

Date_____

Paul V. Henehan, P.E.

Senior Consultant

TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
WELLS RANCH AA 21-06, WELD COUNTY, COLORADO
REM # 25990

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
WellB01@5.5'	4/13/2023	5.5	40.474199	-104.444682	-	370.1
WellNW01@5.0'	4/13/2023	5	40.474215	-104.444674	-	7.5
WellNE01@5.0'	4/13/2023	5	40.474196	-104.444660	-	0.8
WellSW01@5.0'	4/13/2023	5	40.474200	-104.444702	-	0.5
WellSE01@5.0'	4/13/2023	5	40.474185	-104.444683	-	1.0
FL01@4.0'	4/13/2023	4	40.474204	-104.444661	-	0.4
FL02@4.0'	4/13/2023	4	40.476701	-104.449929	-	0.0
N Wall 5.5 Ft	1/30/2025	5.5	40.474216	-104.444653	-	0.3
E Wall 5.5 Ft	1/30/2025	5.5	40.474187	-104.444647	0.70	0.6
S Wall 5.5 Ft	1/30/2025	5.5	40.474184	-104.444689	0.70	0.2
W Wall 5.5 Ft	1/30/2025	5.5	40.474215	-104.444694	0.80	0.0
Floor 8 Ft	1/30/2025	8	40.474210	-104.444683	-	1.6

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

Material excavated and transported off site for disposal.

TABLE 2
FIELD DATA SUMMARY TABLE
NOBLE 100322
WELLS RANCH AA 21-06, WELD COUNTY, COLORADO
REM # 25990

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**		
WellB01@5.5'	4/13/2023	5.5	<0.0020	<0.0050	0.52	2.4	4.1	1.4	0.29	<500	120	<50	<50
WellNW01@5.0'	4/13/2023	5	<0.0020	<0.00500	<0.00500	<0.010	<0.00500	<0.00500	<0.0038	<500	<0.50	<50	<50
FL01@4.0'	4/13/2023	4	<0.0020	<0.00500	<0.00500	<0.010	<0.00500	<0.00500	<0.0038	<500	<0.50	<50	<50
FL02@4.0'	4/14/2023	4	<0.0020	<0.00500	<0.00500	<0.010	<0.00500	<0.00500	<0.0038	<500	<0.50	<50	<50
N Wall 5.5Ft	01/30/2025	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
E Wall 5.5Ft	01/30/2025	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
S Wall 5.5Ft	01/30/2025	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
W Wall 5.5Ft	01/30/2025	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	140	150
Floor 8Ft	01/30/2025	8	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	72	84
Backfill	01/30/2025	Grab	<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
- Material excavated and transported off site for disposal.

TABLE 3
FIELD DATA SUMMARY TABLE
NOBLE 100322
WELLS RANCH AA 21-06, WELD COUNTY, COLORADO
REM # 25990

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
WellB01@5.5'	4/13/2023	5.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0219	<0.00500	<0.00500	0.194	0.251
WellNW01@5.0'	4/13/2023	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	<0.00500	<0.00500
FL01@4.0'	4/13/2023	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@4.0'	4/14/2023	4	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00571	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N Wall 5.5Ft	01/30/2025	5.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E Wall 5.5Ft	01/30/2025	5.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S Wall 5.5Ft	01/30/2025	5.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W Wall 5.5Ft	01/30/2025	5.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Floor 8Ft	01/30/2025	8	<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
Backfill	01/30/2025	Grab	<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

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
Material excavated and transported off site for disposal.

TABLE 4
FIELD DATA SUMMARY TABLE
NOBLE 100322
WELLS RANCH AA 21-06, WELD COUNTY, COLORADO
REM # 25990

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
WellB01@5.5'	4/13/2023	5.5	8.57	0.436	1.57	0.449
WellNW01@5.0'	4/13/2023	5	7.5	1.3	3.82	0.335
FL01@4.0'	4/13/2023	4	7.54	1.9	2.45	0.242
FL02@4.0'	4/14/2023	4	8.04	0.328	0.506	0.169
N Wall 5.5Ft	01/30/2025	5.5	8.2	0.791	2.86	<2.00
E Wall 5.5Ft	01/30/2025	5.5	8.22	0.481	1.3	<2.00
S Wall 5.5Ft	01/30/2025	5.5	8.15	0.809	3.25	<2.00
W Wall 5.5Ft	01/30/2025	5.5	8.03	1.34	3.18	<2.00
Floor 8Ft	01/30/2025	8	8.14	0.769	2.73	<2.00
Backfill	01/30/2025	Grab	8.76	0.218	1.66	<2.00

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

Material excavated and transported off site for disposal.

TABLE 5
FIELD DATA SUMMARY TABLE
NOBLE 100322
WELLS RANCH AA 21-06, WELD COUNTY, COLORADO
REM # 25990

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
WellB01@5.5'	4/13/2023	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
WellNW01@5.0'	4/13/2023	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FL01@4.0'	4/13/2023	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
FL02@4.0'	4/14/2023	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N Wall 5.5Ft	01/30/2025	5.5	4.17	179	0.471	<0.30	7.11	11.1	6.31	<0.260	0.0611	26.2
E Wall 5.5Ft	01/30/2025	5.5	4.94	204	0.718	<0.30	8.96	15.5	6.97	<0.260	0.0809	32.9
S Wall 5.5Ft	01/30/2025	5.5	4.48	143	0.57	<0.30	8.66	14.6	7.41	<0.260	0.0947	33.9
W Wall 5.5Ft	01/30/2025	5.5	4.33	190	0.433	<0.30	8.01	11.3	6.45	<0.260	0.0686	27.6
Floor 8Ft	01/30/2025	8	5.13	193	0.666	<0.30	7.87	15.2	6.77	<0.260	0.0793	30
Backfill	01/30/2025	Grab	1.73	48.3	<0.200	<0.30	3.68	6.14	3.37	<0.260	0.0233	13.8

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
3. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
4. Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

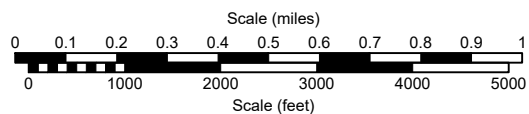
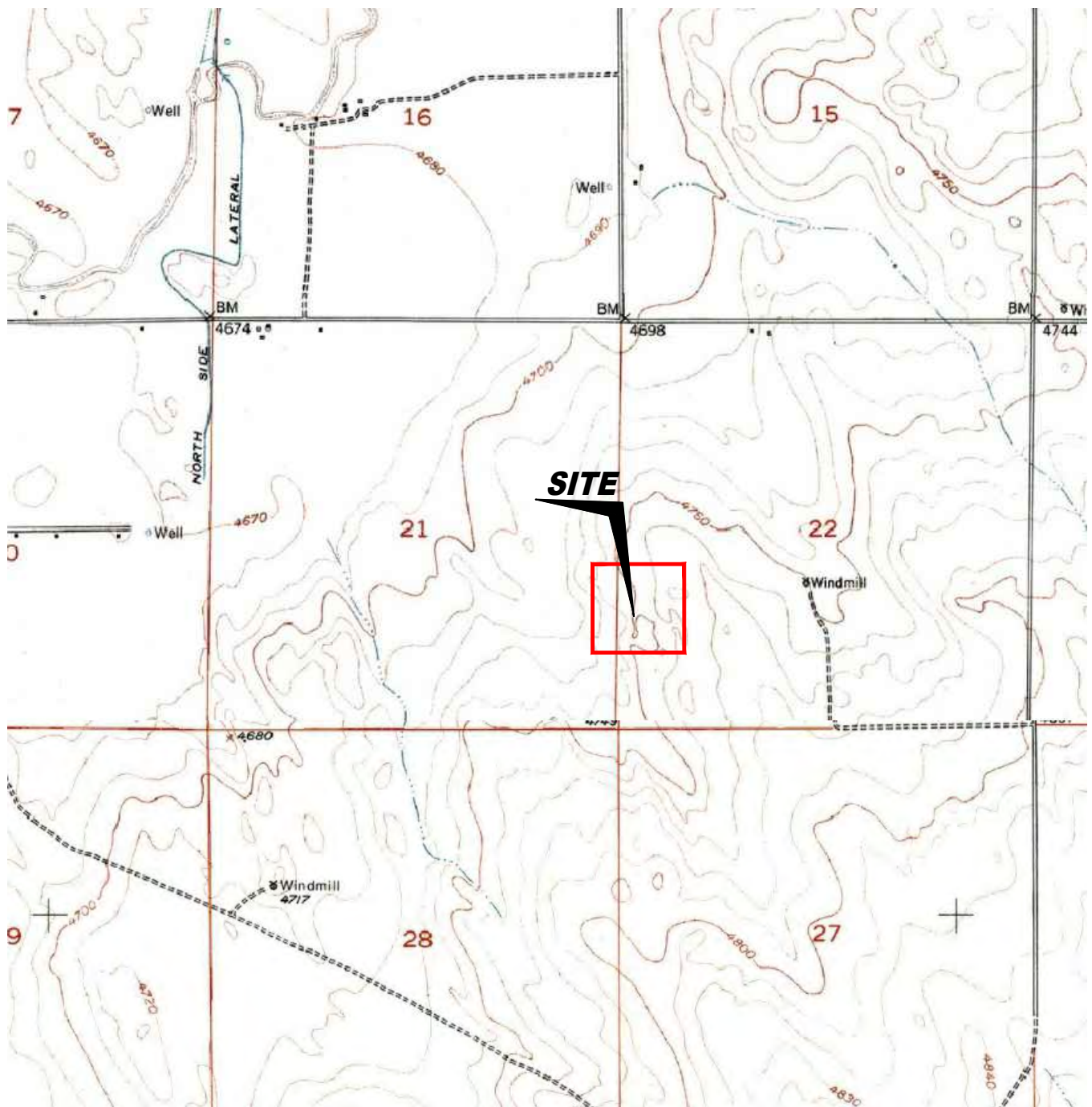
bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed/Not applicable

Material excavated and transported off site for disposal.

FIGURES



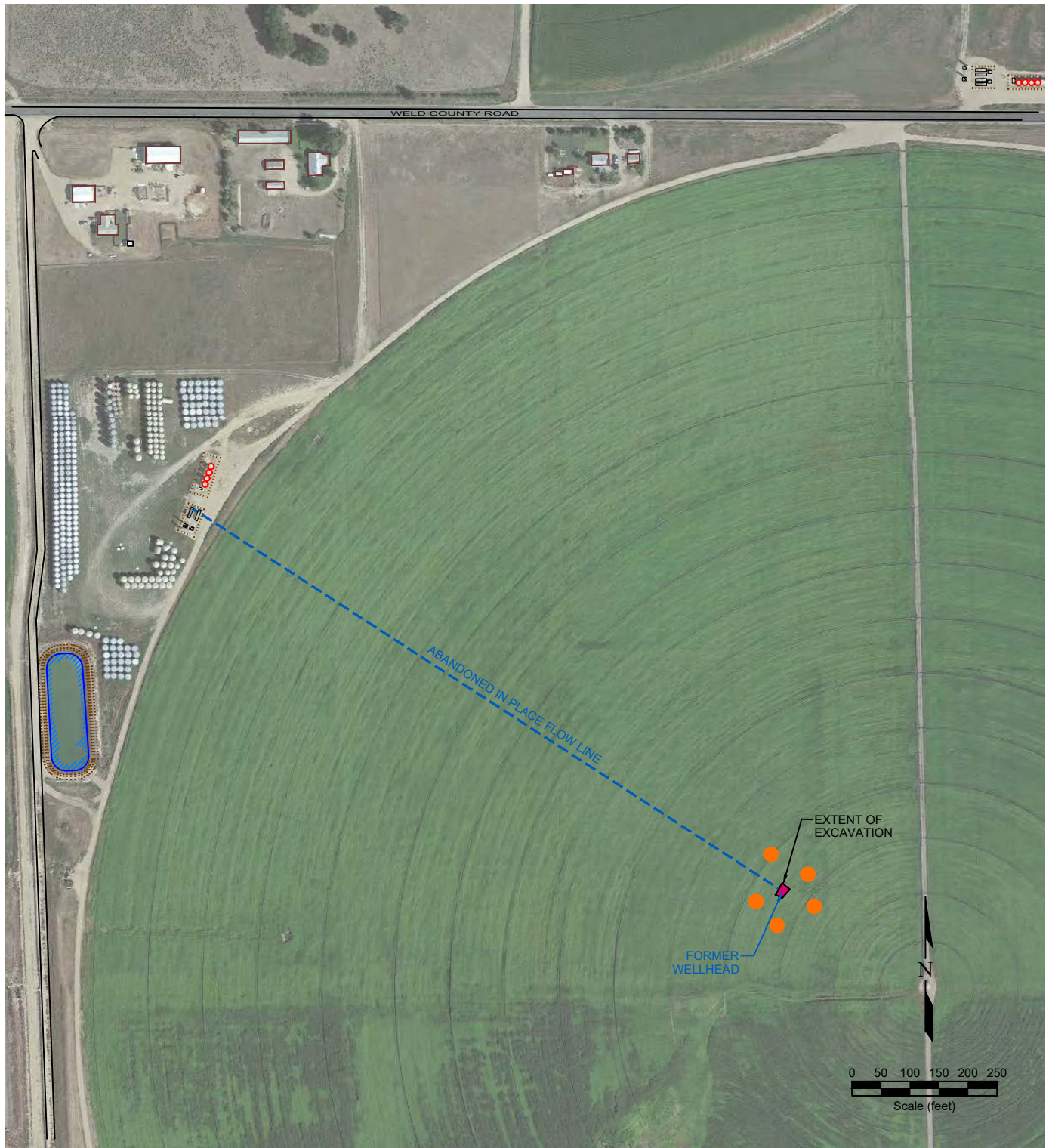
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ Wells Ranch AA 21-06
 SENW Sec. 21, T6N, R63W, 6th PM
 Weld County, Colorado
 40.474192°, -104.444680°

Project # C023-107	API # 05-123-26812	Facility # 296512
Date 4/24/25	Remedation # 25990	Filename 23107T





LEGEND



● Proposed Background Sample Locations

**Figure 2
SITE MAP**

Noble Energy, Inc. ~ Wells Ranch AA 21-06
 SENW Sec. 21, T6N, R63W, 6th PM
 Weld County, Colorado
 40.474192°, -104.444680°

Project No. C023-107	API # 05-123-26812	Facility # 296512
Date 4/24/25	Remediation # 25990	Filename 23107Q



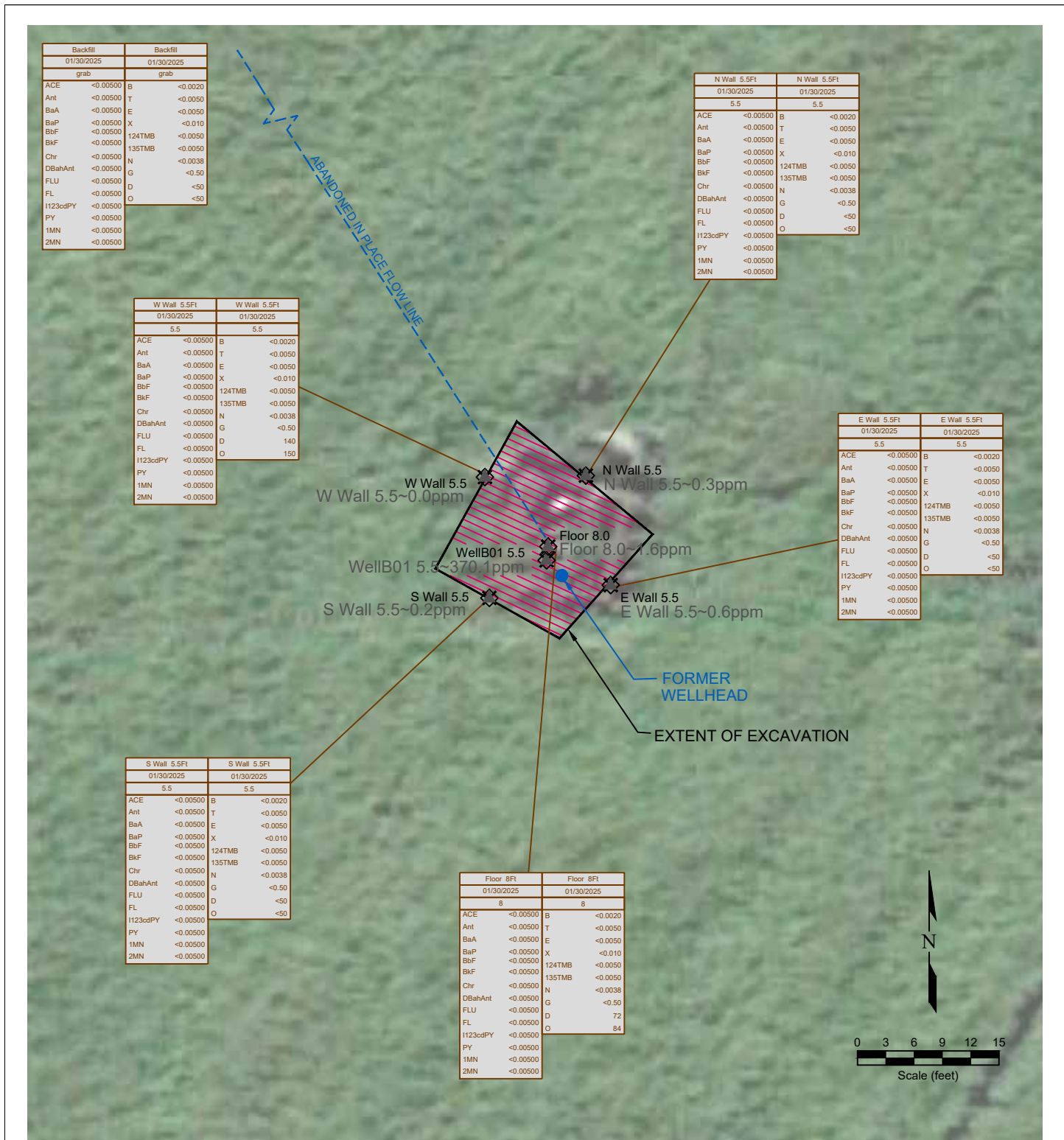


Figure 3
ORGANIC SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ Wells Ranch AA 21-06
SENW Sec. 21, T6N, R63W, 6th PM
Weld County, Colorado
40.474192°, -104.444680°

Project No.
C023-107

API #
05-123-26812

Facility #
296512

Date
4/24/25

Remediation #
25990

Filename
23107Q2



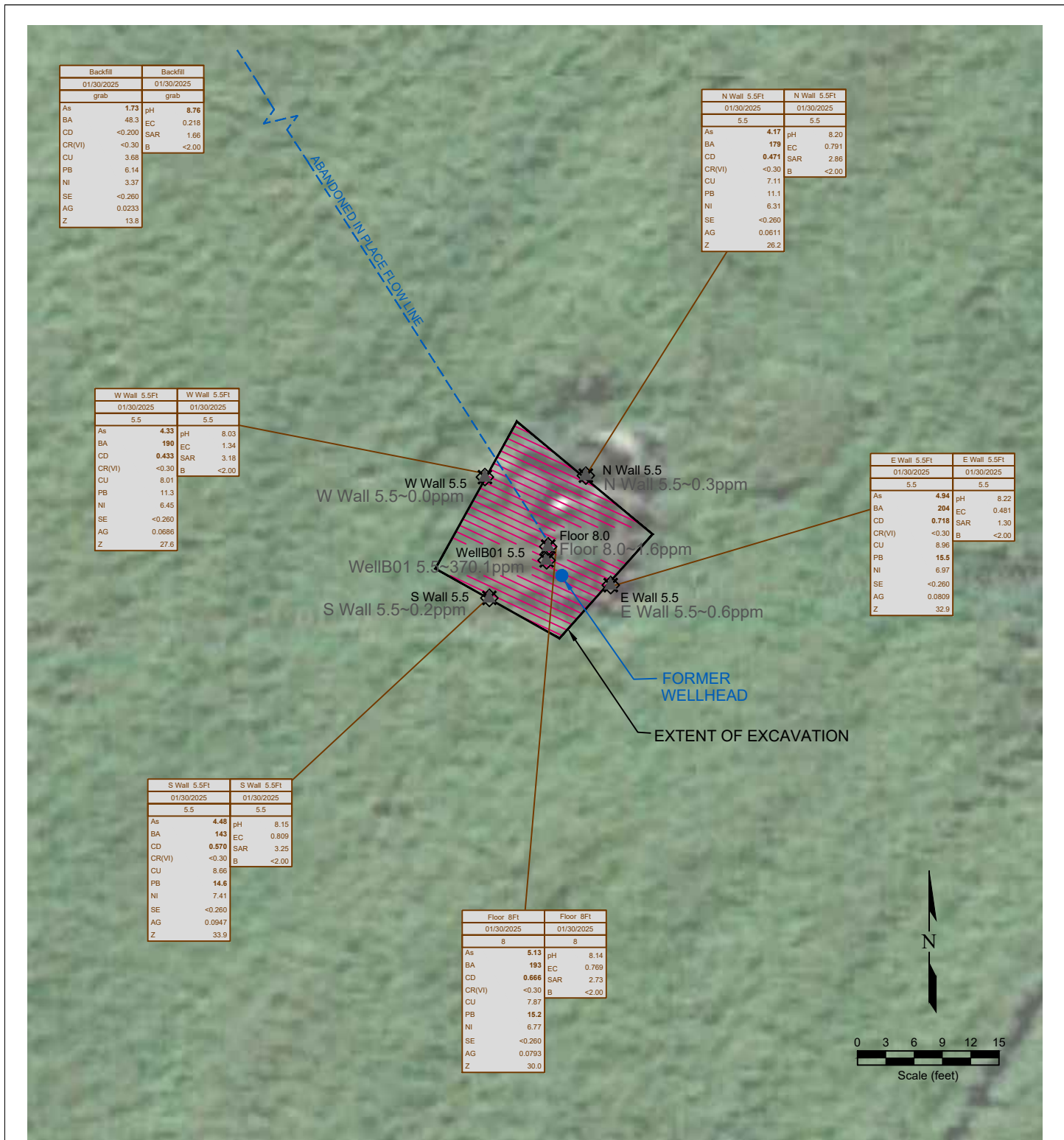


Figure 4
METALS AND INORGANIC SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ Wells Ranch AA 21-06
SENW Sec. 21, T6N, R63W, 6th PM
Weld County, Colorado
40.474192°, -104.444680°

Project No.
C023-107

API #
05-123-26812

Facility #
296512

Date
4/24/25

Remediation #
25990

Filename
23107Q2



APPENDIX A

PHOTO LOG

Photo Log



Description:

--

Photo Log



Description:

--

Photo Log



Description:

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