

# **FREMONT ENVIRONMENTAL INC.**

December 11, 2024

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

Subject:     **Excavation Report**  
              Hansen O 1-23 Flowline  
              API# 05-123-26612  
              NESE Sec. 1, T4N, R67W  
              Weld County, Colorado  
              Fremont Project No. C023-232  
              Remediation #22536

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Hansen O 1-23 flowline release site in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

Please contact me at (314) 795-2372 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**



Jeff T. Griggs  
Consultant

Enclosure

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

**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**HANSEN O 1-23 FLOWLINE**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-232**  
**API #05-123026612, REMEDIATION #22536**

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

**December 11, 2024**

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**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**HANSEN O 1-23 FLOWLINE**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-232**  
**API #05-123026612, REMEDIATION #22536**

**1.0 INTRODUCTION**

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil along the Hansen O 1-23 (Hansen) flowline in Weld County, Colorado. This excavation project was completed on February 15, 2024.

**2.0 BACKGROUND INFORMATION**

**2.1 Site Location**

The Hansen O 1-23 flowline is located in Milliken, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 0.38 miles north of the intersection of County Road 48 and County Road 25. The location is further described as the NE  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 1, Township 4N, Range 67W.

**2.2 Site History**

The site consisted of the Hansen O 1-23 flowline which was serviced by the Hansen BC O-64N67W 1NESE tank battery. The Hansen O 1-23 natural gas well was drilled in 2008 to a depth of approximately 7,410 feet.

A historical release was discovered at two sample locations (FL01-01@4' and FL01-03@4') along the Hansen O 1-23 flowline during decommissioning activities in August 2022. Groundwater was not encountered at that time.

### **3.0 FIELD ACTIVITIES**

#### **3.1 Soil and Groundwater Excavation and Sampling**

Soil remediation efforts consisted of the excavation and removal of petroleum-impacted soil at the two sample locations along the Hansen O 1-23 flowline. The excavations, along the Hansen O 1-23 flowline, measured approximately 15 feet x 15 feet, with a maximum depth of five feet for the FL01-01 location, and 20 feet x 20 feet, with a maximum depth of 5.5 feet for the FL01-03 sample location. The soil consisted of well-graded sand to each excavation's maximum depth. Groundwater was encountered in the FL01-03 excavation. The excavation extents are illustrated on Figures 2 through 5.

The excavation of impacts along the Hansen O 1-23 flowline at sample locations FL01-01 and FL01-03 was completed on February 15, 2024. Soil samples for the FL01-01 excavation were collected, as grab samples, from the excavation sidewalls at four feet and from the floor of the excavation at five feet below ground surface (bgs). Soil samples for the FL01-03 excavation were collected, as grab samples, from the excavation's sidewalls at 4.5 feet and from the floor of the excavation in the saturated zone at 5.5 feet bgs.

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, 1,3,5-trimethylbenzene (TMB), total petroleum hydrocarbons - gasoline range organics (TPH-GRO) by EPA method 8260B, TPH - diesel range organics (TPH-DRO), extended range organics (TPH-ORO) by EPA method 8015, polycyclic aromatic hydrocarbons (PAH): 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, specific conductance (EC) by EPA Method 120.1 saturated paste extraction, saturated paste extraction of soluble nutrients by EPA method 6020/USDA60 6(2) for calculated analysis of sodium absorption ratio (SAR), pH by saturated paste extraction APHA/ASTM/EPA methods, Total Metals by EPA method 6020B, and Hexavalent Chromium by EPA method 7196. The laboratory reports and chain-of-custody documentation are included as separate attachments.

A summary of the soil laboratory data is included in Tables 2 through 4. The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the flowline excavations achieved the ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (PGSSLs). However, four samples exceeded ECMC Table 915-1 Soil Suitability for Reclamation (SSR) standard for pH. Two samples exceeded ECMC Table 915-1 PGSSLs for barium. All samples exceeded ECMC Table 915-1 residential soil screening levels for arsenic. Local background samples collected adjacent to the site's excavations, in native soil at similar depths of four and five feet, also exceeded the ECMC Table 915-1 standards for pH, barium, and arsenic. Eight samples had Chromium analysis outsourced and analyzed by an unaccredited lab (Elevation Diagnostics).

One groundwater sample (GW01), collected from the floor of the FL01-03 excavation at 5.5 feet, was submitted to Summit Scientific, Inc. as well for the analyses of organic petroleum constituents' benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and naphthalene by EPA Method 8260B.

The laboratory analysis indicates that the groundwater sample GW01 achieved the ECMC Table 915-1 standards for all organic petroleum constituents analyzed. The groundwater chemistry is shown on Figure 4 and the analytical data are summarized in Table 5. A copy of the laboratory's report is presented as a separate attachment.

A total of approximately 35 tons (~ 25 cubic yards) of petroleum-impacted soil was removed from the FL01-01 excavation and approximately 56 tons (~ 40 cubic yards) of petroleum-impacted soil was removed from the FL01-03 excavation by Tasman Geosciences Inc. during remediation efforts. Impacted soil was disposed of at Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste, and the excavation was backfilled using clean fill.

#### **4.0 DISCUSSION**

As demonstrated by the soil sampling, petroleum impacted soil was removed at the two sample locations (FL01-01 & FL01-03) along the Hansen O 1-23 flowline via excavation. This was confirmed by analysis of soil samples collected from the exterior sidewalls and floor of each excavation which were below the ECMC Table 915-1 PGSSLs for organic petroleum constituents. Approximately 65 cubic yards of impacted soil were removed and transported to the landfill. The soil and groundwater data for the excavations are illustrated and summarized in the attached tables and figures.

Elevated concentrations of pH, barium, and arsenic are proposed to be attributed to native soil conditions since concentrations of the elevated constituents (pH, barium, and arsenic) observed in the local background samples are greater than concentrations observed in the excavation confirmation samples. Chromium analytical data for the FL01-01 and FL01-03 excavations were outsourced and analyzed by an unaccredited lab

(Elevation Diagnostic). These chromium concentrations exceed the Table 915-1 PGSSLs but were less than the reporting limit (0.3 mg/kg) provided by Summit Scientific which is currently accepted as closure criteria. Since groundwater is unimpacted the Operator is requesting to apply the ECMC Table 915-1 Residential Soil Screening Levels in consideration for closure.

### 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.**

Prepared By:



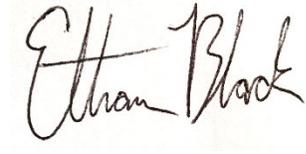
8/16/24

Date \_\_\_\_\_

\_\_\_\_\_  
Jeff T. Griggs

Geologist

Reviewed by:

A handwritten signature in black ink that reads "Ethan Black". The signature is written in a cursive style with a horizontal line through the middle of the letters.

12/11/24

Date \_\_\_\_\_

\_\_\_\_\_  
Ethan D. Black, P.G.

Geologist

## TABLES

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**HANSEN O 1-23, WELD COUNTY, COLORADO**  
**REM # 22536**

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
FL01-01@4'	08/22/2023	4.0 Ft	40.3397138	-104.8305755	NA	0.0 ppm
FL01-02@4'	08/22/2023	4.0 Ft	40.3397555	-104.830873	NA	0.0 ppm
FL01-03@4'	08/22/2023	4.0 Ft	40.3399211	-104.8323456	NA	0.0 ppm
FLR01@4'	08/22/2023	4.0 FT	40.3397361	-104.8324032	NA	0.0 ppm
SEP01-FL@2'	08/22/2023	2.0 Ft	40.3393333	-104.8325722	NA	0.0 ppm
(FL01-01) B01@5.0'	2/14/2024	5.0 Ft	40.3397368	-104.8308764	NA	0.0 ppm
(FL01-01) N01@4.0'	2/14/2024	4.0 Ft	40.3397596	-104.8308734	NA	0.0 ppm
(FL01-01) S01@4.0'	2/14/2024	4.0 Ft	40.3397144	-104.8308790	NA	0.0 ppm
(FL01-01) E01@4.0'	2/14/2024	4.0 Ft	40.3397367	-104.8308563	NA	0.0 ppm
(FL01-01) W01@4.0'	2/14/2024	4.0 Ft	40.3397398	-104.8308979	NA	0.0 ppm
(FL01-03) B01@5.5'	2/14/2024	5.5 Ft	40.3397259	-104.8323938	NA	271.2 ppm
GW01	2/14/2024	5.5 Ft	40.3397238	-104.8323912	NA	N/A
(FL01-03) N01@4.5'	2/14/2024	4.5 Ft	40.3397544	-104.8323966	NA	0.0 ppm
(FL01-03) S01@4.5'	2/14/2024	4.5 Ft	40.3397052	-104.8323908	NA	0.0 ppm
(FL01-03) E01@4.5'	2/14/2024	4.5 Ft	40.3397336	-104.8323639	NA	0.0 ppm
(FL01-03) W01@4.5'	2/14/2024	4.5 Ft	40.3397286	-104.8324231	NA	0.0 ppm
(FL01-03) Backfill	2/14/2024	NA	NA	NA	NA	0.0 ppm
(FL01-01) Backfill	2/15/2024	NA	NA	NA	NA	0.0 ppm
BKG01	2/15/2024	4.0 Ft, 5.0 Ft	40.3395835	-104.8302274	NA	Refer to Bore Log
BKG02	2/15/2024	4.0 Ft, 5.0 Ft	40.3394722	-104.8303613	NA	Refer to Bore Log
BKG03	2/15/2024	4.0 Ft, 5.0 Ft	40.3393508	-104.8301403	NA	Refer to Bore Log
BKG04	2/15/2024	4.0 Ft, 5.0 Ft	40.3392967	-104.8303171	NA	Refer to Bore Log
BKG05	2/15/2024	4.0 Ft, 5.0 Ft	40.3392088	-104.8300756	NA	Refer to Bore Log

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
BKG06	2/15/2024	5.0 Ft	40.3399587	-104.8324795	NA	Refer to Bore Log
BKG07	2/15/2024	5.0 Ft	40.3398174	-104.8326634	NA	Refer to Bore Log
BKG08	2/15/2024	5.0 Ft	40.3397310	-104.8322057	NA	Refer to Bore Log
BKG09	2/15/2024	5.0 Ft	40.3396185	-104.8321218	NA	Refer to Bore Log
BKG10	2/15/2024	5.0 Ft	40.3395114	-104.8322004	NA	Refer to Bore Log

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).

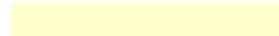
PDOP = Position Dilution of Precision

ppm = Parts per million

in. = Inches

ft. = Feet

bgs = Below ground surface

 = Source material characterization sample, excavated and transported off site for disposal.

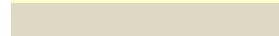
 = Material excavated and transported off site for disposal.

TABLE 1  
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA  
NOBLE 100322  
HANSEN O 1-23, WELD COUNTY, COLORADO  
REM # 22536

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**		
FL01-01@4'	08/22/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<b>0.0063</b>	<500	<0.50	<50	<50
FL01-02@4'	08/22/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01-03@4'	08/22/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<b>0.012</b>	<500	<0.50	66	<50
FLR01@4'	08/22/2023	4.0 FT	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-FL@2'	08/22/2023	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) B01@5.0'	2/14/2024	5.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) N01@4.0'	2/14/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) S01@4.0'	2/14/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) E01@4.0'	2/14/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) W01@4.0'	2/14/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-03) B01@5.5'	2/14/2024	5.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	76	360	53
(FL01-03) N01@4.5'	2/14/2024	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-03) S01@4.5'	2/14/2024	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-03) E01@4.5'	2/14/2024	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-03) W01@4.5'	2/14/2024	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-03) Backfill	2/14/2024	N/A	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
(FL01-01) Backfill	2/15/2024	N/A	<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

NA - Not analyzed

  = Source material characterization sample, excavated and transported off site for disposal.

  = Material excavated and transported off site for disposal.

TABLE 2  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
HANSEN O 1-23, WELD COUNTY, COLORADO  
REM # 22536

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl- Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-01@4'	08/22/2023	4.0 Ft	0.0159	0.0362	0.067	0.0343	0.0582	0.0232	0.0675	0.00629	0.153	0.0192	0.0286	0.113	<0.00500	<0.00500
FL01-02@4'	08/22/2023	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
FL01-03@4'	08/22/2023	4.0 Ft	0.204	0.410	0.609	0.508	0.715	0.285	0.641	0.105	1.46	0.266	0.341	1.02	0.0243	0.0417
FLR01@4'	08/22/2023	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
SEP01-FL@2'	08/22/2023	2.0 Ft	<0.00500	<0.00500	0.00804	<0.00500	0.00821	<0.00500	0.00867	<0.00500	0.0185	<0.00500	<0.00500	0.0154	<0.00500	<0.00500
(FL01-01) B01@5.0'	2/14/2024	5.0 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
(FL01-01) N01@4.0'	2/14/2024	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
(FL01-01) S01@4.0'	2/14/2024	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
(FL01-01) E01@4.0'	2/14/2024	4.0 Ft	<0.00500	<0.00500	0.00574	0.00888	<0.00500	<0.00500	<0.00500	<0.00500	0.00904	<0.00500	0.00719	<0.00500	<0.00500	
(FL01-01) W01@4.0'	2/14/2024	4.0 Ft	<0.00500	0.00911	<0.00500	0.0103	0.00748	<0.00500	0.00775	<0.00500	0.0259	<0.00500	0.0209	<0.00500	<0.00500	
(FL01-03) B01@5.5'	2/14/2024	5.5 Ft	<0.00500	<0.00500	0.0103	<0.00500	<0.00500	<0.00500	0.00574	<0.00500	0.00503	0.0231	<0.00500	<0.00500	<0.00500	
(FL01-03) N01@4.5'	2/14/2024	4.5 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	
(FL01-03) S01@4.5'	2/14/2024	4.5 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	
(FL01-03) E01@4.5'	2/14/2024	4.5 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	
(FL01-03) W01@4.5'	2/14/2024	4.5 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	
(FL01-03) Backfill	2/14/2024	N/A	<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	
(FL01-01) Backfill	2/15/2024	N/A	<0.00500	<0.00500	0.00751	<0.00500	<0.00500	<0.00500	0.00516	<0.00500	0.0081	<0.00500	0.00936	<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
  - Source material characterization sample, excavated and transported off site for disposal.
  - Material excavated and transported off site for disposal.

**TABLE 3**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE 100322**  
**HANSEN O 1-23, WELD COUNTY, COLORADO**  
**REM # 22536**

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
FL01-01@4'	08/22/2023	4.0 Ft	8.51	0.424	0.888	0.0490
FL01-02@4'	08/22/2023	4.0 Ft	7.94	2.77	2.46	0.0634
FL01-03@4'	08/22/2023	4.0 Ft	7.88	3.60	2.80	0.846
FLR01@4'	08/22/2023	4.0 FT	7.61	1.06	0.356	<0.0100
SEP01-FL@2'	08/22/2023	2.0 Ft	8.32	0.158	0.0295	<0.0100
(FL01-01) B01@5.0'	2/14/2024	5.0 Ft	8.08	3.66	0.768	<2.00
(FL01-01) N01@4.0'	2/14/2024	4.0 Ft	7.83	2.18	0.808	<2.00
(FL01-01) S01@4.0'	2/14/2024	4.0 Ft	8.98	0.250	0.711	<2.00
(FL01-01) E01@4.0'	2/14/2024	4.0 Ft	8.66	0.420	1.01	<2.00
(FL01-01) W01@4.0'	2/14/2024	4.0 Ft	8.51	0.747	1.21	<2.00
(FL01-03) B01@5.5'	2/14/2024	5.5 Ft	8.69	0.807	1.65	<2.00
(FL01-03) N01@4.5'	2/14/2024	4.5 Ft	8.14	0.714	1.05	<2.00
(FL01-03) S01@4.5'	2/14/2024	4.5 Ft	7.89	1.22	2.65	<2.00
(FL01-03) E01@4.5'	2/14/2024	4.5 Ft	7.71	1.68	3.17	<2.00
(FL01-03) W01@4.5'	2/14/2024	4.5 Ft	7.91	1.54	2.11	<2.00
(FL01-03) Backfill	2/14/2024	N/A	8.03	0.321	0.418	<2.00
(FL01-01) Backfill	2/15/2024	N/A	7.98	0.370	0.780	<2.00
BKG01@4.0'	2/15/2024	4.0 Ft	8.61	2.66	0.694	<2.00
BKG01@5.0'	2/15/2024	5.0 Ft	8.93	2.85	0.367	<2.00
BKG02@4.0'	2/15/2024	4.0 Ft	8.54	3.94	0.663	<2.00
BKG02@5.0'	2/15/2024	5.0 Ft	8.83	2.68	0.477	<2.00
BKG03@4.0'	2/15/2024	4.0 Ft	8.63	1.71	0.304	<2.00

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
BKG03@5.0'	2/15/2024	5.0 Ft	<b>8.38</b>	<b>5.32</b>	0.522	<2.00
BKG04@4.0'	2/15/2024	4.0 Ft	<b>8.53</b>	2.24	0.378	<2.00
BKG04@5.0'	2/15/2024	5.0 Ft	8.08	2.44	0.316	<2.00
BKG05@4.0'	2/15/2024	4.0 Ft	<b>8.58</b>	2.51	0.371	<2.00
BKG05@5.0'	2/15/2024	5.0 Ft	<b>8.61</b>	<b>5.09</b>	0.467	<2.00
BKG06@5.0'	2/14/2024	5.0 Ft	<b>8.42</b>	0.694	0.124	<2.00
BKG07@5.0'	2/14/2024	5.0 Ft	8.15	0.242	0.216	<2.00
BKG08@5.0'	2/14/2024	5.0 Ft	8.12	1.19	0.159	<2.00
BKG09@5.0'	2/14/2024	5.0 Ft	<b>8.90</b>	3.10	0.397	<2.00
BKG10@5.0'	2/14/2024	5.0 Ft	<b>8.84</b>	1.06	0.0711	<2.00
Maximum Root Background Concentration (0 - 3 ft)			NA	NA	NA	NA
Average Root Background Concentration (0 - 3 ft)			NA	NA	NA	NA
Maximum Background Concentration			<b>8.93</b>	<b>5.32</b>	0.694	<2.00
Average Background Concentration			<b>8.54</b>	2.52	0.368	<2.00

1. Bold faced values exceed the ECMC Table 915-1 limit(s)

2. Blue highlighted soil analytical values indicate a regulatory exceedance

NA - Not analyzed

  = Source material characterization sample, excavated and transported off site for disposal.

  = Material excavated and transported off site for disposal.

TABLE 4  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE 100322  
HANSEN O 1-23, WELD COUNTY, COLORADO  
REM # 22536

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-01@4'	08/22/2023	4.0 Ft	6.70	36.5	<0.200	<0.30	3.53	7.12	4.64	<0.260	0.0349	22.4
FL01-02@4'	08/22/2023	4.0 FT	7.17	64.4	<0.200	<0.30	5.33	8.04	6.05	0.358	0.0458	26.9
FL01-03@4'	08/22/2023	4.0 Ft	3.81	143	<0.200	<0.30	8.22	7.18	6.82	0.777	0.0393	31.2
FLR01@4'	08/22/2023	4.0 Ft	4.14	137	0.297	<0.30	9.35	19.2	9.22	0.390	0.0518	36.6
SEP01-FL@2'	08/22/2023	2.0 Ft	5.51	72.9	0.480	<0.30	5.79	7.62	5.42	<0.260	0.0249	23.7
(FL01-01) B01@5.0'	2/14/2024	5.0 Ft	7.36	37.7	<0.200	<0.080	3.85	7.92	5.21	<0.260	0.0499	23.6
(FL01-01) N01@4.0'	2/14/2024	4.0 Ft	7.83	29.1	<0.200	<0.080	3.76	8.49	5.08	<0.260	0.0573	23.0
(FL01-01) S01@4.0'	2/14/2024	4.0 Ft	6.65	43.2	<0.200	<0.080	3.49	7.48	4.92	<0.260	0.0459	22.0
(FL01-01) E01@4.0'	2/14/2024	4.0 Ft	7.21	45.1	<0.200	<0.080	3.79	7.42	4.83	<0.260	0.0444	23.7
(FL01-01) W01@4.0'	2/14/2024	4.0 Ft	9.91	40.9	0.203	<0.080	4.53	8.86	4.97	<0.260	0.0484	23.6
(FL01-03) B01@5.5'	2/14/2024	5.5 Ft	1.17	10.5	<0.200	<0.080	2.34	1.60	3.64	<0.260	<0.0200	10.3
(FL01-03) N01@4.5'	2/14/2024	4.5 Ft	1.11	22.3	<0.200	<0.080	2.10	2.60	3.08	<0.260	<0.0200	9.57
(FL01-03) S01@4.5'	2/14/2024	4.5 Ft	1.67	34.4	<0.200	0.092	3.36	2.75	4.14	<0.260	0.0234	13.7
(FL01-03) E01@4.5'	2/14/2024	4.5 Ft	3.87	92.3	0.242	0.096	6.42	7.76	8.44	<0.260	0.0619	27.2
(FL01-03) W01@4.5'	2/14/2024	4.5 Ft	4.65	92.0	0.261	0.086	5.12	6.94	5.82	<0.260	0.0499	25.6
(FL01-03) Backfill	2/14/2024	N/A	3.51	65.7	<0.200	0.137	4.57	5.95	5.23	<0.260	0.0363	18.3
(FL01-01) Backfill	2/15/2024	N/A	3.48	71.6	<0.200	<0.30	4.39	6.15	5.22	<0.260	0.0324	17.0
BKG01@4.0'	2/15/2024	4.0 Ft	6.49	97.3	<0.200	<0.30	6.56	8.36	9.69	<0.260	0.0394	23.9
BKG01@5.0'	2/15/2024	5.0 Ft	5.81	78.2	0.193	<0.30	6.53	7.65	9.61	<0.236	0.0325	22.6
BKG02@4.0'	2/15/2024	4.0 Ft	6.20	98.4	0.212	<0.30	7.79	8.12	10.9	<0.260	0.0427	25.2
BKG02@5.0'	2/15/2024	5.0 Ft	5.65	92.2	0.244	<0.30	9.30	8.08	12.8	<0.260	0.0382	26.2
BKG03@4.0'	2/15/2024	4.0 Ft	24.1	118	0.296	<0.30	9.73	8.29	12.8	<0.260	0.0481	25.5
BKG03@5.0'	2/15/2024	5.0 Ft	5.11	85.3	0.230	<0.30	8.07	7.28	11.3	<0.260	0.0395	24.3
BKG04@4.0'	2/15/2024	4.0 Ft	3.61	93.1	0.222	<0.30	9.55	7.56	13.1	<0.260	0.0489	24.8
BKG04@5.0'	2/15/2024	5.0 Ft	2.89	105	0.245	<0.30	11.1	6.93	15.2	<0.260	0.0440	24.7
BKG05@4.0'	2/15/2024	4.0 Ft	1.89	24.3	<0.200	<0.30	2.48	1.78	3.84	<0.260	<0.0200	9.47
BKG05@5.0'	2/15/2024	5.0 Ft	0.810	31.3	<0.200	<0.30	3.43	2.18	5.54	<0.260	<0.0200	12.7
BKG06@5.0'	2/14/2024	5.0 Ft	1.31	37.6	<0.180	<0.30	2.69	2.27	3.79	<0.234	<0.0180	10.6
BKG07@5.0'	2/14/2024	5.0 Ft	3.63	162	0.225	<0.30	13.2	8.65	10.4	<0.260	0.0523	28.3

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
BKG08@5.0'	2/14/2024	5.0 Ft	<b>0.742</b>	23.1	<0.200	<0.30	2.07	1.65	2.64	<0.260	<0.0200	7.93
BKG09@5.0'	2/14/2024	5.0 Ft	<b>2.39</b>	73.7	<0.200	<0.30	6.94	5.23	6.72	<0.260	0.0287	18.8
BKG10@5.0'	2/14/2024	5.0 Ft	<b>1.60</b>	25.2	<0.200	<0.30	4.41	3.07	4.66	<0.260	<0.0200	13.3
Maximum Root Zone Background Concentration (0 - 3 ft)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
125% Average Root Zone Background Concentration (0 - 3 ft)			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Background Concentration			<b>24.1</b>	<b>162</b>	0.296	<0.30	13.2	8.65	15.2	<0.260	0.0523	28.3
125% Average Background Concentration			<b>6.02</b>	<b>95.4</b>	0.271	<0.30	8.65	7.26	11.1	<0.260	0.0429	24.9

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)

\* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

  = Source material characterization sample, excavated and transported off site for disposal.

  = Material excavated and transported off site for disposal.

TABLE 5  
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA  
NOBLE 100322  
HANSEN O 1-23, WELD COUNTY, COLORADO  
REM # 22536

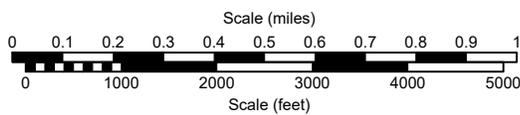
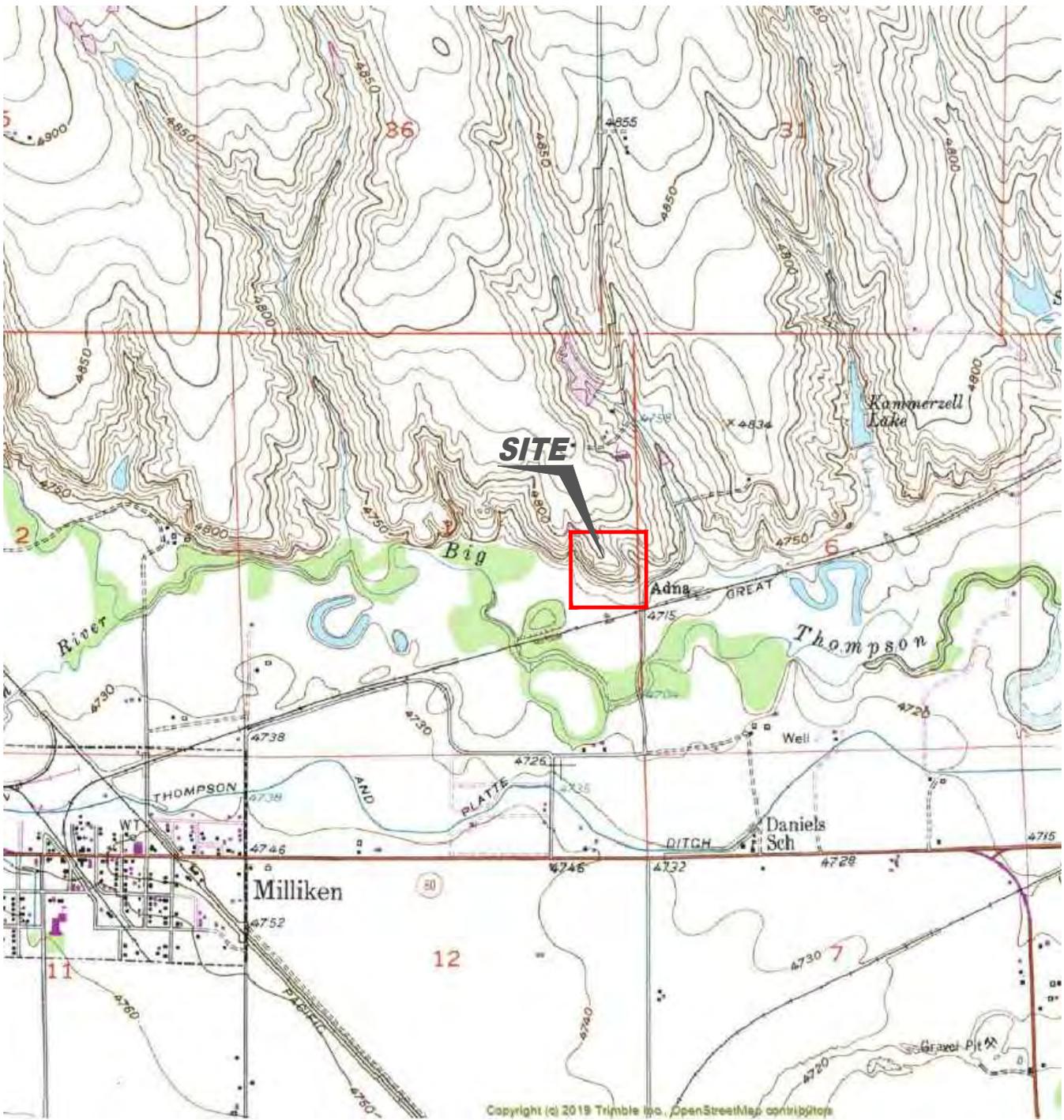
Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethyl- Benzene (µg/L)	1,3,5- Trimethyl- Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater Below TOC (ft)	Depth to Groundwater Below Ground Surface (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67					
GW01	02/14/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	N/A	N/A	5.5 Ft	N/A	NP

1. Bold values exceed the ECMC limit(s)

2. Red highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

## FIGURES

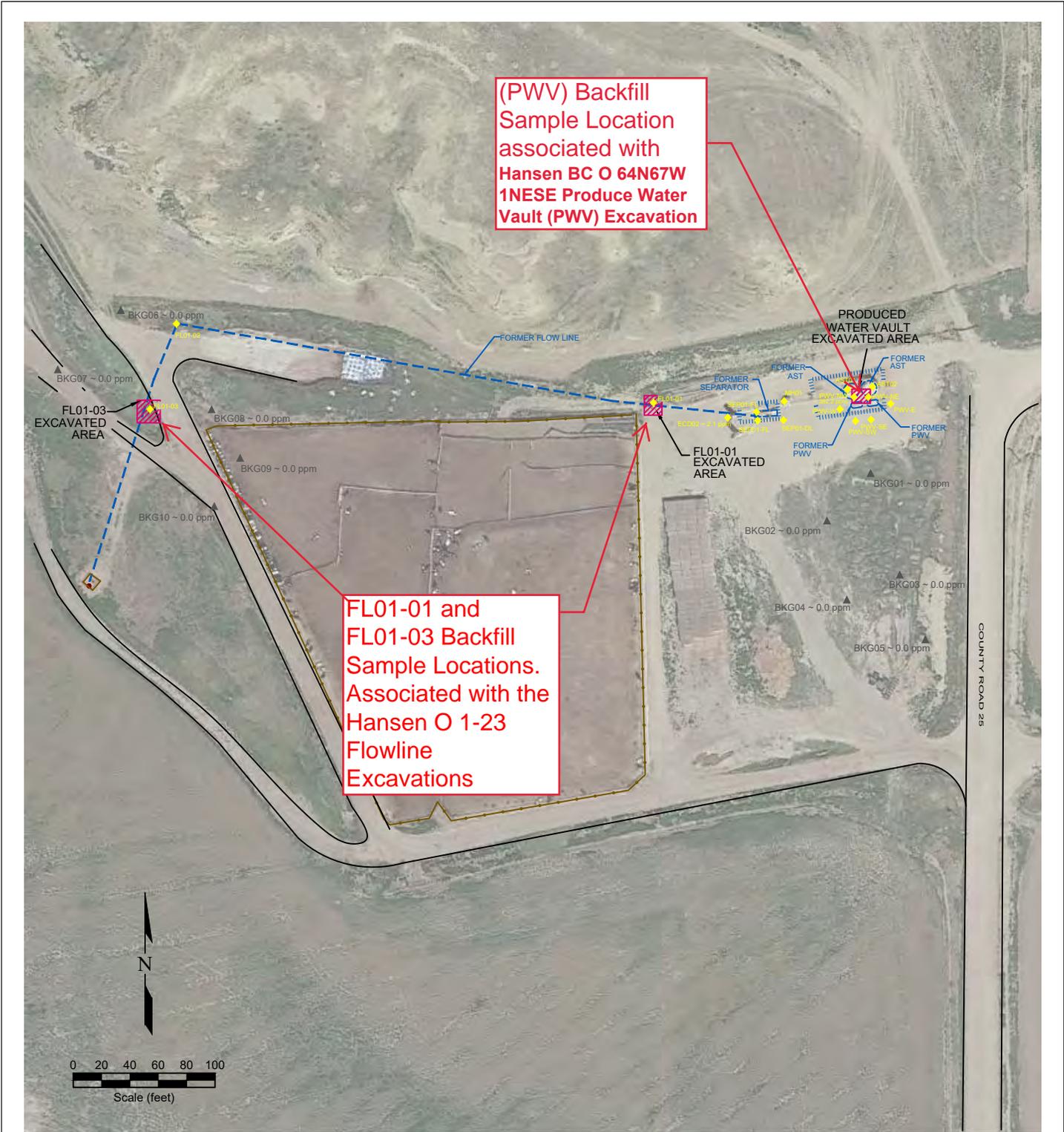


USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
**SITE LOCATION MAP**  
**Noble Energy, Inc.**  
**Hansen BC O 64N67W 1NESE**  
**and Hansen O 1-23 (flow line)**  
 NESE Section 1, T4N, R67W, 6th PM  
 Weld County, Colorado 40.339724°,  
 -104.830548°

Project No. <b>C023-232</b>	API # <b>05-123-26612</b>	Facility # <b>333177</b>
Date <b>8/16/24</b>	Remediation # <b>22536</b>	Filename <b>23232T</b>





(PWV) Backfill  
Sample Location  
associated with  
Hansen BC O 64N67W  
1NESE Produce Water  
Vault (PWV) Excavation

FL01-01 and  
FL01-03 Backfill  
Sample Locations.  
Associated with the  
Hansen O 1-23  
Flowline  
Excavations

**LEGEND**

- WELL HEAD LOCATION
- ▲ PID READING LOCATION
- ◆ DECOMMISSIONING PID READING  
(all decommissioning PID readings are 0.0 ppm unless specified otherwise)
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- EXCAVATED AREAS
- FORMER FLOW LINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL

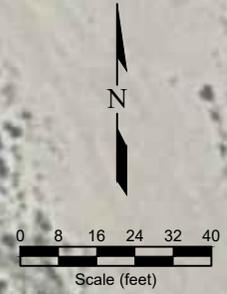
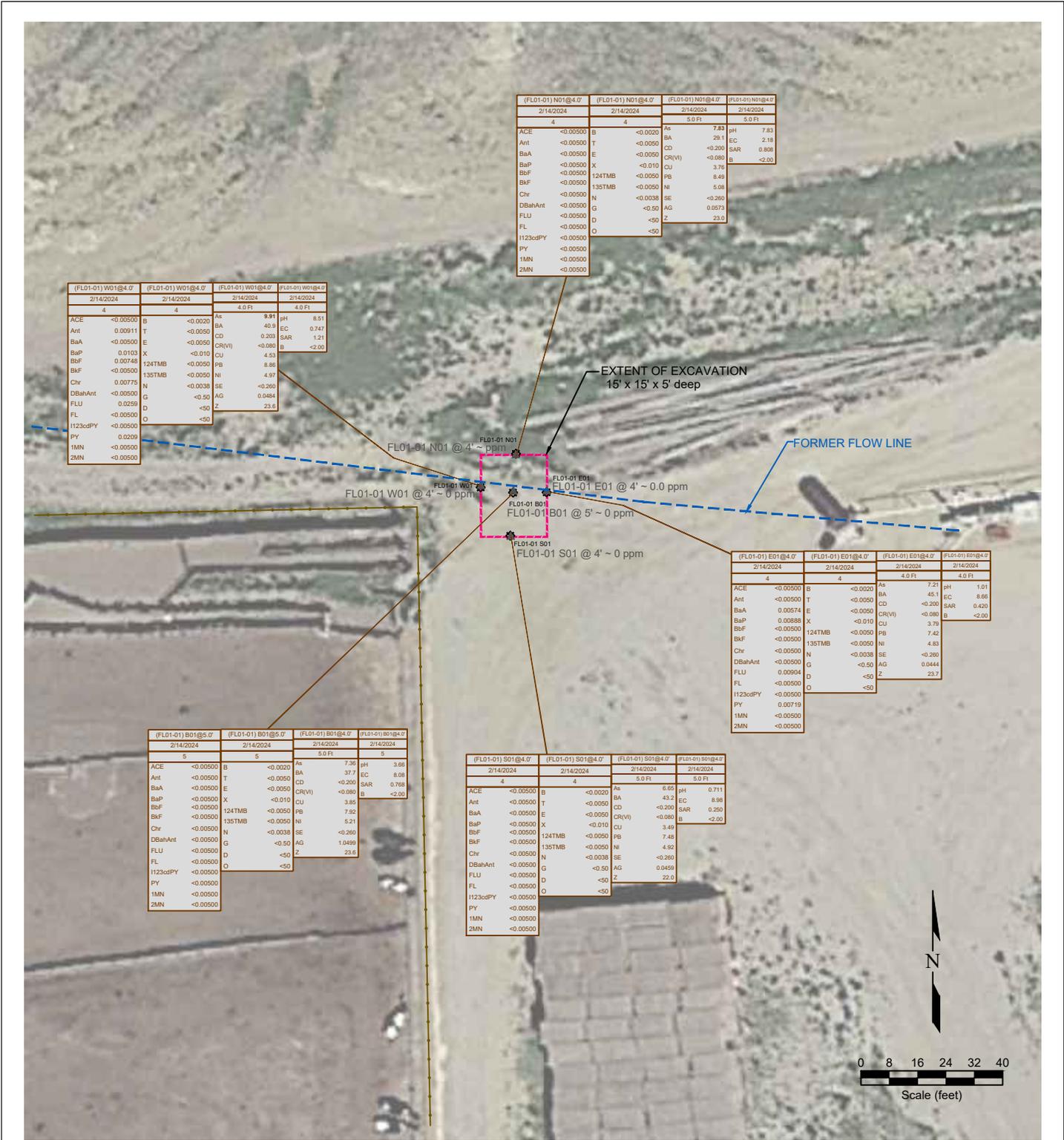
Figure 2

**SITE MAP**

**Noble Energy, Inc.**  
**Hansen O 1-23 (flow line)**  
NESE Section 1, T4N, R67W, 6th PM  
Weld County, Colorado  
40.339724°, -104.830548°

Project No. <b>C023-232</b>	API # <b>05-123-26612</b>	Facility # <b>333177</b>
Date <b>8/16/24</b>	Remediation # <b>22536</b>	Filename <b>23232Q4</b>





**LEGEND**

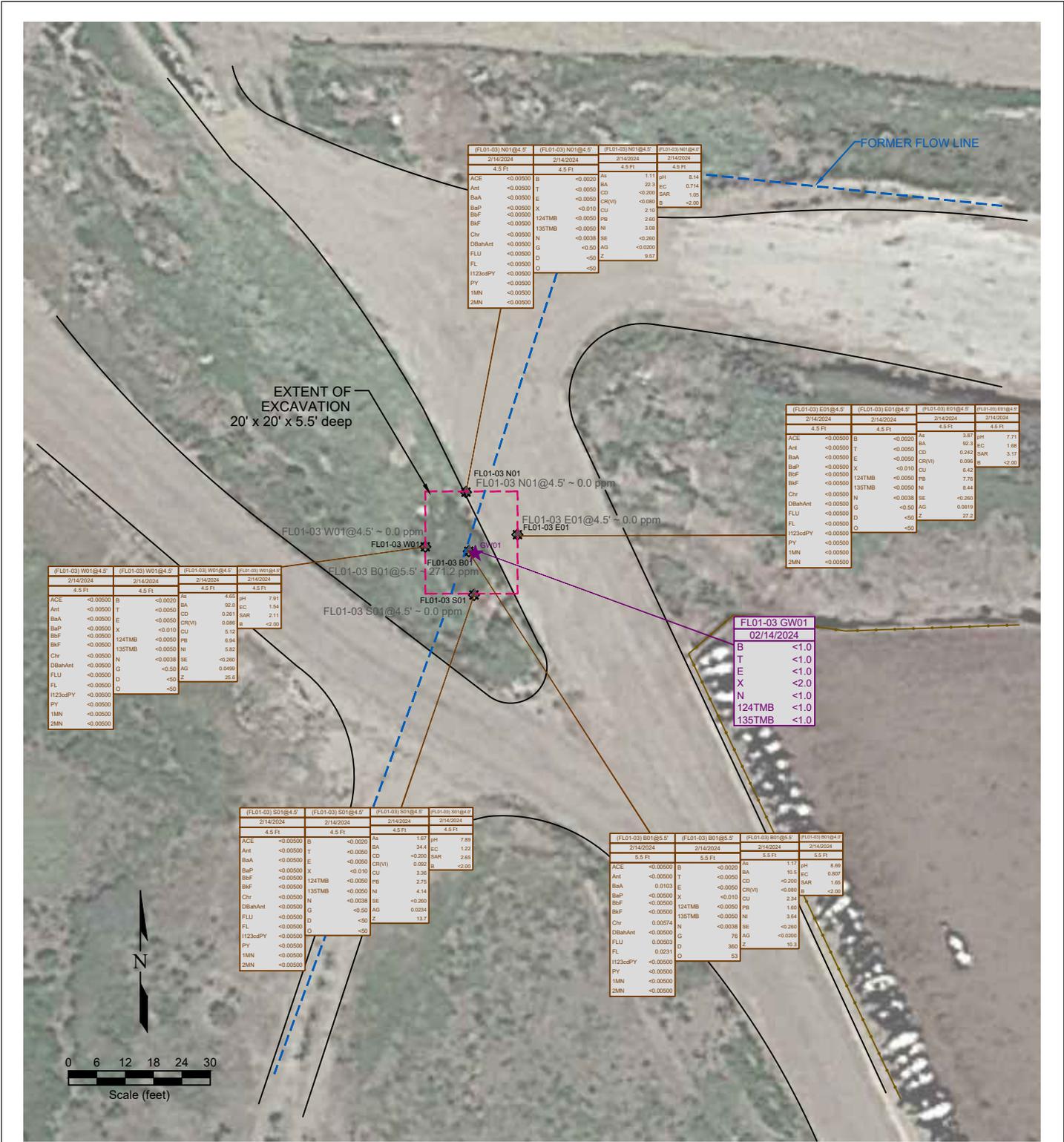
- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ▲ PID READING LOCATION
- ⊗ SOIL SAMPLE LOCATION
- FORMER FACILITY
- FORMER FLOW LINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- NOT ANALYZED

SAMPLE ID	SAMPLE DATE	SAMPLE DATE	SAMPLE ID	SAMPLE DATE	SAMPLE DATE	SAMPLE ID	SAMPLE DATE	SAMPLE DATE
ACE	<0.0050	B	<0.0020	As	7.36	pH	3.68	
Ant	<0.0050	T	<0.0050	BA	37.7	EC	8.08	
BaA	<0.0050	E	<0.0050	CD	<0.200	SAR	0.768	
BaP	<0.0050	X	<0.010	CR(VI)	<0.080	B	<2.00	
BbF	<0.0050	124TMB	<0.0050	PB	7.92			
BkF	<0.0050	135TMB	<0.0050	NI	5.21			
Chr	<0.0050	N	<0.0038	SE	<0.260			
DBahAnt	<0.0050	G	<0.50	AG	1.0499			
FLU	<0.0050	D	<0.50	Z	23.6			
FL	<0.0050	O	<0.50					
H123cdPY	<0.0050							
PY	<0.0050							
1MN	<0.0050							
2MN	<0.0050							

**Figure 3**  
**FL01-01 EXCAVATION SOIL CHEMISTRY MAP**

**Noble Energy, Inc.**  
**Hansen O 1-23 (flow line)**  
 NESE Section 1, T4N, R67W, 6th PM  
 Weld County, Colorado  
 40.339724°, -104.830548°

Project No. <b>C023-232</b>	API # <b>05-123-26612</b>	Facility # <b>333177</b>	
Date <b>8/16/24</b>	Remediation # <b>22536</b>	Filename <b>23232Q3</b>	



(FL01-03) N01@4.5'		(FL01-03) N01@4.5'		(FL01-03) N01@4.5'		(FL01-03) N01@4.5'	
2/14/2024		2/14/2024		2/14/2024		2/14/2024	
4.5 Ft		4.5 Ft		4.5 Ft		4.5 Ft	
ACE	<0.0050	B	<0.0050	As	1.11	pH	8.14
Ant	<0.0050	T	<0.0050	BA	22.3	EC	0.714
BaA	<0.0050	E	<0.0050	CD	<0.200	SAR	1.05
BaP	<0.0050	X	<0.010	CU	2.10		<2.00
BbF	<0.0050	124TMB	<0.0050	Pb	2.60		
BbF	<0.0050	135TMB	<0.0050	Ni	3.08		
Chr	<0.0050	N	<0.0038	SE	<0.200		
DBahAnt	<0.0050	G	<0.50	AG	<0.0200		
FLU	<0.0050	D	<50	Z	9.07		
FL	<0.0050	O	<50				
1123cdPY	<0.0050						
PY	<0.0050						
1MN	<0.0050						
2MN	<0.0050						

(FL01-03) E01@4.5'		(FL01-03) E01@4.5'		(FL01-03) E01@4.5'		(FL01-03) E01@4.5'	
2/14/2024		2/14/2024		2/14/2024		2/14/2024	
4.5 Ft		4.5 Ft		4.5 Ft		4.5 Ft	
ACE	<0.0050	B	<0.0050	As	3.87	pH	7.71
Ant	<0.0050	T	<0.0050	BA	92.3	EC	1.68
BaA	<0.0050	E	<0.0050	CD	0.240	SAR	3.17
BaP	<0.0050	X	<0.010	CU	6.42		
BbF	<0.0050	124TMB	<0.0050	Pb	7.76		
BbF	<0.0050	135TMB	<0.0050	Ni	8.44		
Chr	<0.0050	N	<0.0038	SE	<0.200		
DBahAnt	<0.0050	G	<0.50	AG	0.0169		
FLU	<0.0050	D	<50	Z	27.2		
FL	<0.0050	O	<50				
1123cdPY	<0.0050						
PY	<0.0050						
1MN	<0.0050						
2MN	<0.0050						

(FL01-03) W01@4.5'		(FL01-03) W01@4.5'		(FL01-03) W01@4.5'		(FL01-03) W01@4.5'	
2/14/2024		2/14/2024		2/14/2024		2/14/2024	
4.5 Ft		4.5 Ft		4.5 Ft		4.5 Ft	
ACE	<0.0050	B	<0.0050	As	4.65	pH	7.91
Ant	<0.0050	T	<0.0050	BA	20.0	EC	1.54
BaA	<0.0050	E	<0.0050	CD	0.261	SAR	2.11
BaP	<0.0050	X	<0.010	CU	5.12		
BbF	<0.0050	124TMB	<0.0050	Pb	6.94		
BbF	<0.0050	135TMB	<0.0050	Ni	6.82		
Chr	<0.0050	N	<0.0038	SE	<0.200		
DBahAnt	<0.0050	G	<0.50	AG	0.0499		
FLU	<0.0050	D	<50	Z	25.6		
FL	<0.0050	O	<50				
1123cdPY	<0.0050						
PY	<0.0050						
1MN	<0.0050						
2MN	<0.0050						

(FL01-03) S01@4.5'		(FL01-03) S01@4.5'		(FL01-03) S01@4.5'		(FL01-03) S01@4.5'	
2/14/2024		2/14/2024		2/14/2024		2/14/2024	
4.5 Ft		4.5 Ft		4.5 Ft		4.5 Ft	
ACE	<0.0050	B	<0.0050	As	1.67	pH	7.29
Ant	<0.0050	T	<0.0050	BA	34.4	EC	1.32
BaA	<0.0050	E	<0.0050	CD	<0.200	SAR	2.65
BaP	<0.0050	X	<0.010	CU	3.36		<2.00
BbF	<0.0050	124TMB	<0.0050	Pb	2.75		
BbF	<0.0050	135TMB	<0.0050	Ni	4.14		
Chr	<0.0050	N	<0.0038	SE	<0.200		
DBahAnt	<0.0050	G	<0.50	AG	0.0234		
FLU	<0.0050	D	<50	Z	13.7		
FL	<0.0050	O	<50				
1123cdPY	<0.0050						
PY	<0.0050						
1MN	<0.0050						
2MN	<0.0050						

(FL01-03) B01@5.5'		(FL01-03) B01@5.5'		(FL01-03) B01@5.5'		(FL01-03) B01@5.5'	
2/14/2024		2/14/2024		2/14/2024		2/14/2024	
5.5 Ft		5.5 Ft		5.5 Ft		5.5 Ft	
ACE	<0.0050	B	<0.0050	As	1.11	pH	8.69
Ant	<0.0050	T	<0.0050	BA	10.0	EC	0.907
BaA	<0.0050	E	<0.0050	CD	<0.200	SAR	1.66
BaP	<0.0050	X	<0.010	CU	2.82		<2.00
BbF	<0.0050	124TMB	<0.0050	Pb	1.60		
BbF	<0.0050	135TMB	<0.0050	Ni	3.64		
Chr	<0.0050	N	<0.0038	SE	<0.200		
DBahAnt	<0.0050	G	<0.50	AG	<0.0200		
FLU	<0.0050	D	<50	Z	10.3		
FL	<0.0050	O	<50				
1123cdPY	<0.0050						
PY	<0.0050						
1MN	<0.0050						
2MN	<0.0050						

**LEGEND**

- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ▲ PID READING LOCATION
- ⊗ SOIL SAMPLE LOCATION
- ☆ WATER SAMPLE LOCATION
- FORMER FACILITY
- FORMER FLOW LINE
- FENCE LINE
- EXTENT OF EXCAVATION

SAMPLE ID	SAMPLE ID	SAMPLE ID	SAMPLE ID			
DATE	DATE	DATE	DATE			
DEPTH	DEPTH	DEPTH	DEPTH			
ACE	<0.0050	ACENAPHTHENE (mg/kg)	As	1.67	pH	7.29
Ant	<0.0050	ANTHRACENE (mg/kg)	BA	34.4	EC	1.32
BaA	<0.0050	BENZO (A) ANTHRACENE (mg/kg)	CD	<0.200	SAR	2.65
BaP	<0.0050	BENZO (B) FLUORANTHENE (mg/kg)	CU	3.36		<2.00
BbF	<0.0050	BENZO (K) FLUORANTHENE (mg/kg)	124TMB	<0.0050	Pb	2.75
Chr	<0.0050	CHRYSENE (mg/kg)	135TMB	<0.0050	Ni	4.14
DBahAnt	<0.0050	DIBENZO (A,H) ANTHRACENE (mg/kg)	N	<0.0038	SE	<0.200
FLU	<0.0050	FLUORANTHENE (mg/kg)	G	<0.50	AG	0.0234
FLU	<0.0050	FLUORANTHENE (mg/kg)	D	<50	Z	13.7
FLU	<0.0050	FLUORENE (mg/kg)	O	<50		
1123cdPY	<0.0050	INDENO (1,2,3-CD) PYRENE (mg/kg)				
PY	<0.0050	PYRENE (mg/kg)				
1MN	<0.0050	1-METHYLNAPHTHALENE (mg/kg)				
2MN	<0.0050	2-METHYLNAPHTHALENE (mg/kg)				

**Figure 4**  
**FL01-03 EXCAVATION SOIL & GROUNDWATER CHEMISTRY MAP**  
Noble Energy, Inc.  
Hansen O 1-23 (flow line)  
NESE Section 1, T4N, R67W, 6th PM  
Weld County, Colorado  
40.339724°, -104.830548°

Project No. <b>C023-232</b>	API # <b>05-123-26612</b>	Facility # <b>333177</b>	
Date <b>8/16/24</b>	Remediation # <b>22536</b>	Filename <b>23232Q2</b>	

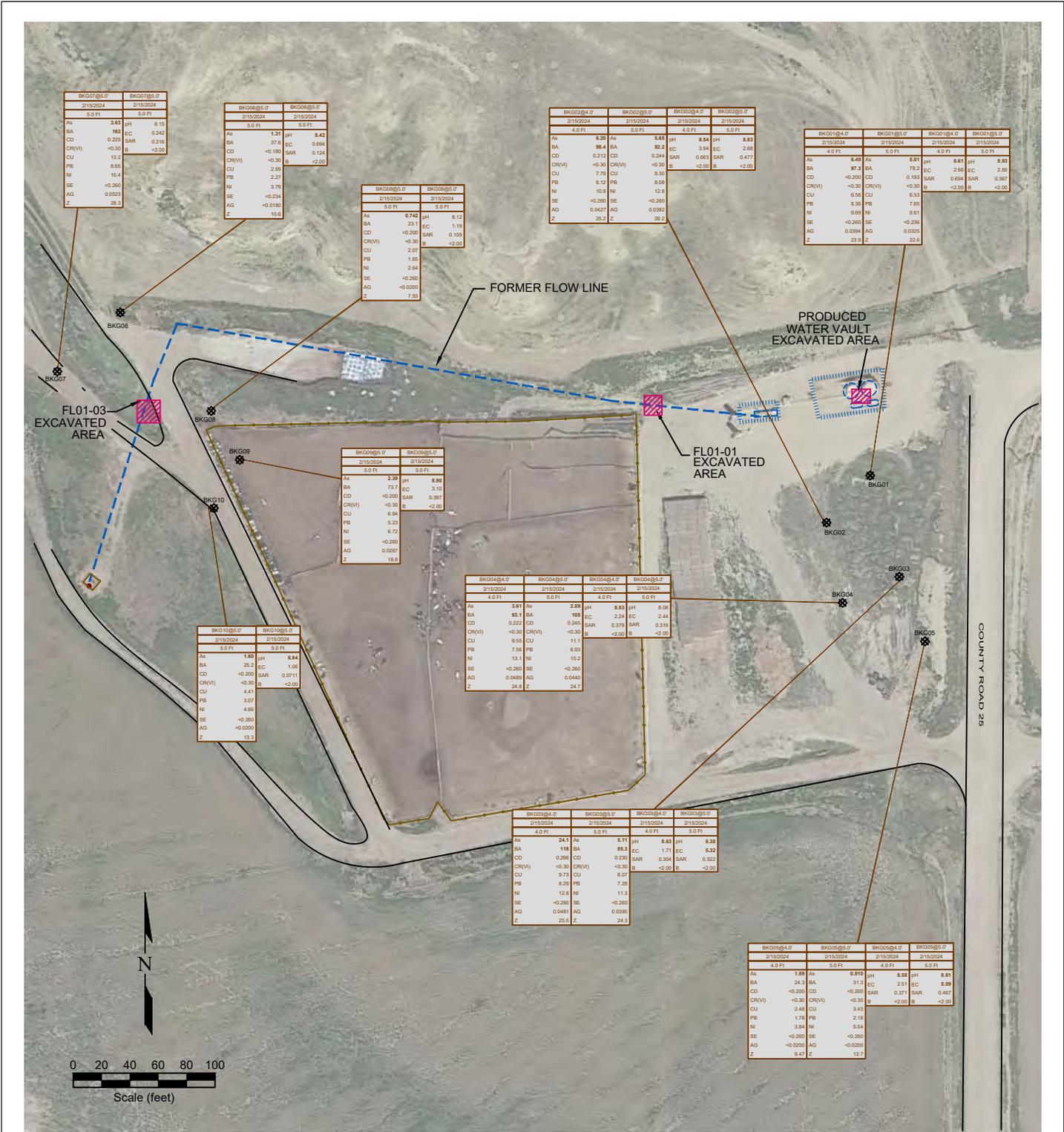


Figure 5  
**BACKGROUND SAMPLE SOIL CHEMISTRY MAP**

**Noble Energy, Inc.**  
**Hansen BC O 64N67W 1NESE**  
**and Hansen O 1-23 (flow line)**  
**NESE Section 1, T4N, R67W, 6th PM**  
**Weld County, Colorado**  
**40.339724°, -104.830548°**

Project No. <b>C023-232</b>	API # <b>05-123-26612</b>	Facility # <b>333177</b>
Date <b>8/16/24</b>	Remediation # <b>22536</b>	Filename <b>23232Q4</b>



**APPENDIX A**

**PHOTO LOG**



***Description:***

#1A - Hansen BC O-64N67W 1NESE - Floor of FL01-03 Sample Location Excavation - (FL01-03) B01@5.5' - Staining/Odor - PID: 271.2ppm



**Description:**

#1B - Hansen BC O-64N67W 1NESE - Groundwater in FL01-03 Excavation - GW01 - Odor/Sheen Present - Depth 5.5 Ft

# Photo Log



**Description:**

#1C - Hansen BC O-64N67W 1NESE - North Sidewall of FL01-03 Excavation - (FL01-03) N01@4.5' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#1D - Hansen BC O-64N67W 1NESE - South Sidewall of FL01-03 Excavation - (FL01-03) S01@4.5' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#1E - Hansen BC O-64N67W 1NESE - East Sidewall of FL01-03 Excavation - (FL01-03) E01@4.5' - No Impacts Noted - PID: 0.0ppm



**Description:**

#1F - Hansen BC O-64N67W 1NESE - West Sidewall of FL01-03 Excavation - (FL01-03) W01@4.5' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#1C - Hansen BC O-64N67W 1NESE - FL01-03 Excavation Backfill - (FL01-03) Backfill - No Impacts Noted - PID: 0.0ppm

# Photo Log



### *Description:*

#2A - Hansen BC O-64N67W 1NESE - Floor of FL01-01 Sample Location Excavation - (FL01-01) B01@5.0' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#2B - Hansen BC O-64N67W 1NESE - North Sidewall of FL01-01 Excavation - (FL01-01) N01@4.0' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#2C - Hansen BC O-64N67W 1NESE - South Sidewall of FL01-01 Excavation - (FL01-01) S01@4.0' - No Impacts Noted - PID: 0.0ppm

# Photo Log



### *Description:*

#2D - Hansen BC O-64N67W 1NESE - East Sidewall of FL01-01 Excavation - (FL01-01) E01@4.0' - No Impacts Noted - PID: 0.0ppm



**Description:**

#2E - Hansen BC O-64N67W 1NESE - West Sidewall of FL01-01 Excavation - (FL01-01) W01@4.0' - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#2F - Hansen BC O-64N67W 1NESE - FL01-01 Excavation Backfill - (FL01-01) Backfill - No Impacts Noted - PID: 0.0ppm

# Photo Log



**Description:**

#4B - Hansen BC O-64N67W 1NESE - 2nd Local Background Sample Dig - BKG02 - Samples Collected at 4.0ft and 5.0ft

# Photo Log



**Description:**

#4C - Hansen BC O-64N67W 1NESE - 3rd Local Background Sample Dig - BKG03 - Samples Collected at 4.0ft and 5.0ft

# Photo Log



**Description:**

#4D - Hansen BC O-64N67W 1NESE - 4th Local Background Sample Dig - BKG04 - Samples Collected at 4.0ft and 5.0ft

# Photo Log



**Description:**

#4E - Hansen BC O-64N67W 1NESE - 5th Local Background Sample Dig - BKG05 - Samples Collected at 4.0ft and 5.0ft

# Photo Log



**Description:**

#4F - Hansen BC O-64N67W 1NESE - 6th Local Background Sample Dig - BKG06 - Sample Collected at 5.0ft

# Photo Log



***Description:***

#4G - Hansen BC O-64N67W 1NESE - 7th Local Background Sample Dig - BKG07 - Sample Collected at 5.0ft

# Photo Log



**Description:**

#4H - Hansen BC O-64N67W 1NESE - 8th Local Background Sample Dig - BKG08 - Sample Collected at 5.0ft

# Photo Log



**Description:**

#41 - Hansen BC O-64N67W 1NESE - 9th Local Background Sample Dig - BKG09 - Sample Collected at 5.0ft

# Photo Log



**Description:**

#4J - Hansen BC O-64N67W 1NESE - 10th Local Background Sample Dig - BKG10 - Sample Collected at 5.0ft