

FREMONT ENVIRONMENTAL INC.

October 31, 2024

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

Subject: **Excavation Report**
 Booth CC 31-17D Tank
 NWNE Sec. 31, T4N, R63W
 Weld County, Colorado
 Fremont Project No. C023-029
 Facility # 426349, Remediation #25058

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Booth CC 31-17D Tank 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.

A handwritten signature in black ink, appearing to read 'J. Griggs', is placed over a rectangular area of the document that has been redacted with a light gray pattern.

Jeff T. Griggs
Consultant

Enclosure

EXCAVATION REPORT

NOBLE ENERGY INC.

BOOTH CC 31-17D TANK

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C023-029

FACILITY #426349, REMEDIATION #25058

**Prepared by:
Fremont Environmental Inc.
1759 Redwing Lane
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October 31, 2024

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EXCAVATION REPORT
NOBLE ENERGY INC.
BOOTH CC 31-17D TANK
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-029
FACILITY #426349, REMEDIATION #25058

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the Booth CC 31-17D Tank location in Weld County, Colorado. This excavation project was completed on October 10, 2024.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Booth CC 31-17D Tank is located approximately 6.11 miles northeast of Keenesburg, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural rangeland area approximately 2.58 miles east of the intersection of Weld County Rd 40 and Weld County Road 57. The location is further described as the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 31, Township 4N, Range 63W.

2.2 Site History

The site consisted of the Booth CC 31-17D tank battery which serviced the Booth 32-31, Booth CC 31-17D, Booth 41-31 and Booth 31-31 natural gas wells. The Booth 32-31 natural gas well was drilled in 2005 to a depth of approximately 6,984 feet. The Booth CC 31-17D natural gas well was drilled in 2012 to a depth of approximately 7,142 feet. The Booth 41-31 natural gas well was drilled in 2005 to a depth of approximately 6,981 feet. The Booth 31-31 natural gas well was drilled in 2004 to a depth of approximately 7,003 feet.

A release was discovered adjacent to the Booth CC 31-17D Tank former produced water vault (PWV) during decommissioning activities in February 2023. Groundwater was not encountered at that time.

3.0 FIELD ACTIVITIES

3.1 Soil Excavation and Sampling

Soil remediation efforts consisted of the excavation and removal of petroleum-impacted soil directly adjacent to the former produced water vault. The excavation extent measured approximately 30 feet x 30 feet, with a maximum depth of seven feet below ground surface (bgs). The soil consisted of well-graded sand to the excavation's maximum depth of approximately seven feet. The excavation extent is illustrated on Figures 2 through 5. Groundwater was not encountered within the excavation and is measured at approximately 88 feet deep in the nearest downgradient well (stock) 1,508 feet northwest of the release location (DWR Permit No. 157907).

The excavation of impacts adjacent to the former Booth CC 31-17D Tank produced water vault was completed on October 10, 2024. Soil samples were collected, as grab samples, from the excavation's sidewalls at six feet and the floor of the excavation at seven 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 5. The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the excavation achieved the ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (PGSSLs). However, 11 samples exceeded the ECMC Table 915-1 soil suitability for reclamation (SSR) limits for pH, one sample exceeded the SSR limit for boron, and all samples were exceeded the ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) for arsenic.

A total of approximately 616 tons (~ 440 cubic yards) of petroleum impacted soil was removed from the 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 Booth CC 31-17D Tank produced water vault via excavation. This was confirmed by analysis of soil samples collected from the exterior sidewalls and floor of the excavation which were below the ECMC Table 915-1 PGSSLs for organic petroleum constituents. Approximately 440 cubic yards of impacted soil were removed and transported to the

landfill. The soil data for the excavation is illustrated and summarized in the attached tables and figures.

Elevated concentrations of pH for all samples except B01@7.0', and all elevated concentrations of arsenic except samples B01@7.0' and B03@7.0', are proposed to be attributed to native soil conditions based on concentrations observed in local background samples collected adjacent to sites the excavation. The resampled B01@7.0' sample confirmed boron complies with the Table 915-1 SSR standards. Furthermore, the elevated concentrations of arsenic outside the natural variability seen in the local background samples, discovered at sample locations B01@7.0' and B03@7.0', are proposed to be resampled and analyzed for SSR constituents and/or metals constituents as applicable to the elevated concentration(s) observed at each sample location. Samples will be collected from the same depth where the initial elevated excavation confirmation sample concentrations were observed. The Operator will request a no further action (NFA) designation be granted if the reanalyzed samples comply with their respective Table 915-1 concentration standards. Background samples will be used to justify elevated concentrations.

Alternatively, if the resample results exceed the Table 915-1 standards and cannot be attributed to native soil conditions via background soil characterization a minimum of five additional samples will be collected to delineate the magnitude and extent of elevated constituents. Following completion of the delineation, the Operator will submit a detailed reclamation plan that includes, but is not limited to, soil analysis from adjacent undisturbed lands, revegetation techniques, site stabilization, and details of seeded species and will request NFA designation be granted under Rule 915.b: Request to leave elevated inorganics in situ.

The Operator requests to apply the ECMC Table 915-1 RSSLs as criteria for closure. A separation of 81 exists between the deepest excavation sample and groundwater (88 ft deep), observed in the nearest downgradient well (stock) 1,508 feet northwest of the release location, preventing a pathway for communication between potential contaminants of concern and groundwater.

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:



10/31/24

Date_____

Jeff T. Griggs

Geologist

Reviewed by:

A handwritten signature in black ink that reads "Ethan Black". The signature is written in a cursive, flowing style. The first name "Ethan" is written in a larger, more prominent script, and the last name "Black" is written in a slightly smaller, more compact script. The signature is centered horizontally within the space provided for the reviewer's name.

10/31/24

Date_____

Ethan D. Black, PG

Consultant

TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
BOOTH CC 31-17D Tank, WELD COUNTY, COLORADO
REM # 25058

Sample ID	Sample Date	Depth	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@1'	2/3/2023	1.0 Ft	40.2759417	-104.4783722	N/A	12.2 ppm
AST02@6"	2/3/2023	0.5 Ft	40.2760222	-104.4783944	N/A	1.5 ppm
PWVB01@6'	2/3/2023	6.0 Ft	40.2759833	-104.4783888	N/A	16.7ppm
PWVN01@4.5'	2/3/2023	4.5 Ft	40.2760139	-104.4783916	N/A	29.1 ppm
PWVS01@4.5'	2/3/2023	4.5 Ft	40.2759583	-104.4783861	N/A	19.6 ppm
PWVE01@5.0'	2/3/2023	5.0 Ft	40.2759861	-104.4783583	N/A	7.8 ppm
PWVW01@4.0'	2/3/2023	4.0 Ft	40.2759833	-104.4784194	N/A	2.6 ppm
SEP01@3.5'	2/3/2023	3.5 Ft	40.2760083	-104.4786944	N/A	0.7 ppm
SEP02@3'	2/3/2023	3.0 Ft	40.2760444	-104.4786944	N/A	1.7 ppm
SEP03/FL@4.5'	2/6/2023	4.5 Ft	40.2760389	-104.4787333	N/A	0.0 ppm
MET01@6.0"	2/3/2023	0.5 Ft	40.2760194	-104.4787027	N/A	0.8 ppm
MET02@6.0"	2/3/2023	0.5 Ft	40.2760611	-104.4786944	N/A	0.7 ppm
ECD01@6.0"	2/3/2023	0.5 Ft	40.2758306	-104.4781027	N/A	0.4 ppm
SB-CEN 7FT	11/2/2023	7.0 Ft	40.2759555	-104.4783498	N/A	Refer to Bore Log
B01@7.0'	10/8/2024	7.0 Ft	40.2759801	-104.4784010	N/A	0.1 ppm
N01@6.0'	10/8/2024	6.0 Ft	40.2760093	-104.4784021	0.90	0.0 ppm
W01@6.0'	10/8/2024	6.0 Ft	40.2759780	-104.4783070	0.90	0.0 ppm
Backfill	10/8/2024	N/A	N/A	N/A	N/A	0.0 ppm
B02@7.0'	10/9/2024	7.0 Ft	40.2759451	-104.4783970	N/A	0.0 ppm
N02@6.0'	10/9/2024	6.0 Ft	40.2760108	-104.4783473	0.90	0.0 ppm
S01@6.0'	10/9/2024	6.0 Ft	40.2759149	-104.4783962	0.90	0.0 ppm
W02@6.0'	10/9/2024	6.0 Ft	40.2759419	-104.4784335	0.90	0.0 ppm
B03@7.0'	10/10/2024	7.0 Ft	40.2759813	-104.4783556	N/A	0.0 ppm

Sample ID	Sample Date	Depth	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude/Longitude			
B04@7.0'	10/10/2024	7.0 Ft	40.2759448	-104.4783503	N/A	0.0 ppm
S02@6.0'	10/10/2024	6.0 Ft	40.2759175	-104.4783449	0.90	0.0 ppm
E01@6.0'	10/10/2024	6.0 Ft	40.2759815	-104.4783071	0.90	0.0 ppm
E02@6.0'	10/10/2024	6.0 Ft	40.2759407	-104.4783070	0.90	0.0 ppm
SB-CEN 7FT (Resample)	10/10/2024	7.0 Ft	40.2759555	-104.4783498	N/A	0.0 ppm
B01@7.0' (Resample)	10/10/2024	7.0 Ft	40.2759801	-104.4784010	N/A	0.0 ppm
B02@7.0' (Resample)	10/10/2024	7.0 Ft	40.2759451	-104.4783970	N/A	0.0 ppm
BKG01	10/10/2024	2.0 Ft, 4.0 Ft, 7.0 Ft	40.2758818	-104.4779158	0.80	0.0 ppm
BKG02	10/10/2024	2.0 Ft, 4.0 Ft, 7.0 Ft	40.2760273	-104.4779041	0.80	0.0 ppm
BKG03	10/10/2024	2.0 Ft, 4.0 Ft, 7.0 Ft	40.2762475	-104.4780930	0.80	Refer to Bore Log
BKG04	10/10/2024	2.0 Ft, 4.0 Ft, 7.0 Ft	40.2762362	-104.4784058	0.80	Refer to Bore Log
BKG05	10/10/2024	2.0 Ft, 4.0 Ft, 7.0 Ft	40.2762132	-104.4788353	0.80	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.

= Confirmation Sample (Resample)

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
BOOTH CC 31-17D Tank, WELD COUNTY, COLORADO
REM # 25058

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@1'	2/3/2023	1.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@6"	2/3/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVB01@6'	2/3/2023	6.0 Ft	<0.0020	0.022	0.017	0.18	0.11	0.054	<0.0038	2,572	52	2400	120
PWVN01@4.5'	2/3/2023	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01@3.5'	2/3/2023	3.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02@3'	2/3/2023	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP03/FL@4.5'	2/6/2023	4.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SB-CEN 7FT	11/2/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<50	<0.50	<50
B01@7.0'	10/8/2024	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
N01@6.0'	10/8/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
W01@6.0'	10/8/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
Backfill	10/8/2024	N/A	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
B02@7.0'	10/9/2024	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
N02@6.0'	10/9/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
S01@6.0'	10/9/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
W02@6.0'	10/9/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
B03@7.0'	10/10/2024	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
B04@7.0'	10/10/2024	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
S02@6.0'	10/10/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
E01@6.0'	10/10/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
E02@6.0'	10/10/2024	6.0 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

NA - Not analyzed

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

 = Material excavated and transported off site for disposal.

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE 100322
BOOTH CC 31-17D Tank, WELD COUNTY, COLORADO
REM # 25058

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@1'	2/3/2023	1.0 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
AST02@6"	2/3/2023	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
PWVB01@6'	2/3/2023	6.0 Ft	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	<0.0500	0.32	<0.0500	<0.0500	1.5	<0.0500	0.0802	0.961	0.370
PWVN01@4.5'	2/3/2023	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	0.0121
SEP01@3.5'	2/3/2023	3.5 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
SEP02@3'	2/3/2023	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
SEP03/FL@4.5'	2/6/2023	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	<0.00500
SB-CEN 7FT	11/2/2023	7.0 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
B01@7.0'	10/8/2024	7.0 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
N01@6.0'	10/8/2024	6.0 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
W01@6.0'	10/8/2024	6.0 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
Backfill	10/8/2024	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	<0.00500
B02@7.0'	10/9/2024	7.0 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
N02@6.0'	10/9/2024	6.0 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
S01@6.0'	10/9/2024	6.0 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
W02@6.0'	10/9/2024	6.0 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
B03@7.0'	10/10/2024	7.0 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
B04@7.0'	10/10/2024	7.0 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
S02@6.0'	10/10/2024	6.0 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
E01@6.0'	10/10/2024	6.0 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
E02@6.0'	10/10/2024	6.0 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

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
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 SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
BOOTH CC 31-17D Tank, WELD COUNTY, COLORADO
REM # 25058

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@1'	2/3/2023	1.0 Ft	5.73	0.120	0.0102	0.0568
AST02@6"	2/3/2023	0.5 Ft	6.55	0.470	0.0342	0.0388
PWVB01@6'	2/3/2023	6.0 Ft	7.49	0.506	0.938	0.0793
PWVN01@4.5'	2/3/2023	4.5 Ft	6.87	0.0937	0.0234	0.149
SEP01@3.5'	2/3/2023	3.5 Ft	7.84	0.315	1.32	0.183
SEP02@3'	2/3/2023	3.0 Ft	7.47	0.244	0.0187	0.101
SEP03/FL@4.5'	2/6/2023	4.5 Ft	7.75	0.429	0.175	0.0802
SB-CEN 7FT	11/2/2023	7.0 Ft	8.76	0.130	0.111	<2.00
B01@7.0'	10/8/2024	7.0 Ft	9.91	0.633	3.63	4.25
N01@6.0'	10/8/2024	6.0 Ft	8.85	0.127	0.0588	<2.00
W01@6.0'	10/8/2024	6.0 Ft	8.87	0.115	0.0487	<2.00
Backfill	10/8/2024	N/A	8.96	0.338	1.21	<2.00
B02@7.0'	10/9/2024	7.0 Ft	8.54	0.197	0.180	<2.00
N02@6.0'	10/9/2024	6.0 Ft	8.56	0.160	0.143	<2.00
S01@6.0'	10/9/2024	6.0 Ft	8.56	0.178	0.0223	<2.00
W02@6.0'	10/9/2024	6.0 Ft	8.69	0.156	0.0564	<2.00
B03@7.0'	10/10/2024	7.0 Ft	8.53	0.188	0.148	<2.00
B04@7.0'	10/10/2024	7.0 Ft	8.29	0.209	0.552	<2.00
S02@6.0'	10/10/2024	6.0 Ft	8.56	0.156	0.217	<2.00
E01@6.0'	10/10/2024	6.0 Ft	8.38	0.174	0.0884	<2.00
E02@6.0'	10/10/2024	6.0 Ft	8.29	0.229	0.277	<2.00
B01@7.0' (Resample)	10/10/2024	7.0 Ft	NA	NA	NA	<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
BKG01@2.0'	10/10/2024	2.0 Ft	8.41	0.143	0.0604	<2.00
BKG01@4.0'	10/10/2024	4.0 Ft	8.39	0.182	0.0633	<2.00
BKG01@7.0'	10/10/2024	7.0 Ft	9.06	0.104	0.123	<2.00
BKG02@2.0'	10/10/2024	2.0 Ft	7.55	0.0332	0.0266	<2.00
BKG02@4.0'	10/10/2024	4.0 Ft	8.88	0.114	0.0591	<2.00
BKG02@7.0'	10/10/2024	7.0 Ft	9.06	0.0787	0.0512	<2.00
BKG03@2.0'	10/10/2024	2.0 Ft	6.96	0.0749	0.0282	<2.00
BKG03@4.0'	10/10/2024	4.0 Ft	7.84	0.0489	0.0398	<2.00
BKG03@7.0'	10/10/2024	7.0 Ft	7.70	0.0281	0.0314	<2.00
BKG04@2.0'	10/10/2024	2.0 Ft	7.37	0.0387	0.0131	<2.00
BKG04@4.0'	10/10/2024	4.0 Ft	8.04	0.0275	0.0400	<2.00
BKG04@7.0'	10/10/2024	7.0 Ft	8.14	0.0598	0.0709	<2.00
BKG05@2.0'	10/10/2024	2.0 Ft	7.28	0.0666	0.0654	<2.00
BKG05@4.0'	10/10/2024	4.0 Ft	8.28	0.226	0.157	<2.00
BKG05@7.0'	10/10/2024	7.0 Ft	8.82	0.122	0.107	<2.00
Maximum Root Background Concentration (0 - 3 ft)			8.41	0.143	0.0654	<2.00
Average Root Background Concentration (0 - 3 ft)			7.51	0.0713	0.0387	<2.00
Maximum Background Concentration			9.06	0.226	0.157	<2.00
Average Background Concentration			8.12	0.0898	0.0624	<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.

 = Confirmation Sample (Resample)

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE 100322
BOOTH CC 31-17D Tank, WELD COUNTY, COLORADO
REM # 25058

[illegible]

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
BKG01@2.0'	10/10/2024	2.0 Ft	1.67	61.8	<0.200	<0.30	3.10	5.08	3.65	<0.260	0.0273	13.4
BKG01@4.0'	10/10/2024	4.0 Ft	1.36	64.5	<0.200	<0.30	2.61	4.21	3.20	<0.260	0.0227	12.0
BKG01@7.0'	10/10/2024	7.0 Ft	1.06	30.8	<0.200	<0.30	2.12	2.48	1.89	<0.260	<0.0200	8.42
BKG02@2.0'	10/10/2024	2.0 Ft	1.53	55.5	<0.200	<0.30	3.05	4.74	2.96	<0.260	0.0215	12.2
BKG02@4.0'	10/10/2024	4.0 Ft	1.01	53.0	<0.200	<0.30	2.23	3.14	2.24	<0.260	<0.0200	9.62
BKG02@7.0'	10/10/2024	7.0 Ft	1.12	48.3	<0.200	<0.30	2.32	3.07	2.40	<0.260	<0.0200	9.85
BKG03@2.0'	10/10/2024	2.0 Ft	1.00	42.5	<0.200	<0.30	2.76	3.71	2.58	<0.260	<0.0200	10.5
BKG03@4.0'	10/10/2024	4.0 Ft	1.32	68.8	<0.200	<0.30	3.18	5.19	3.45	<0.260	0.0303	14.3
BKG03@7.0'	10/10/2024	7.0 Ft	1.20	62.3	<0.200	<0.30	3.09	4.97	3.34	<0.260	0.0248	14.0
BKG04@2.0'	10/10/2024	2.0 Ft	0.971	49.2	<0.200	<0.30	2.84	4.13	2.67	<0.260	<0.0200	11.0
BKG04@4.0'	10/10/2024	4.0 Ft	0.976	62.3	<0.200	<0.30	3.20	4.61	3.06	<0.260	0.0214	13.3
BKG04@7.0'	10/10/2024	7.0 Ft	1.26	35.4	<0.200	<0.30	2.25	2.74	2.29	<0.260	<0.0200	8.97
BKG05@2.0'	10/10/2024	2.0 Ft	1.50	64.8	<0.200	<0.30	3.12	5.53	3.53	<0.260	0.0303	14.4
BKG05@4.0'	10/10/2024	4.0 Ft	1.93	76.7	<0.200	<0.30	2.85	4.77	3.53	<0.260	0.0250	13.2
BKG05@7.0'	10/10/2024	7.0 Ft	1.02	41.7	<0.200	<0.30	2.31	3.27	2.25	<0.260	<0.0200	9.83
Maximum Root Zone Background Concentration (0 - 3 ft)			1.67	64.8	<0.200	<0.30	3.12	5.53	3.65	<0.260	0.0303	14.4
125% Average Root Zone Background Concentration (0 - 3 ft)			1.67	68.5	<0.200	<0.30	3.72	5.80	3.85	<0.260	0.0298	15.4
Maximum Background Concentration			1.93	76.7	<0.200	<0.30	3.20	5.53	3.65	<0.260	0.0303	14.4
125% Average Background Concentration			1.58	68.1	<0.200	<0.30	3.42	5.14	3.59	<0.260	0.0286	14.6

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

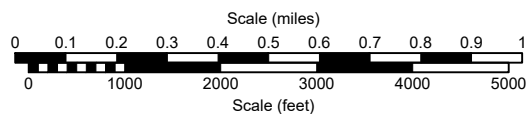
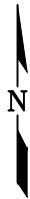
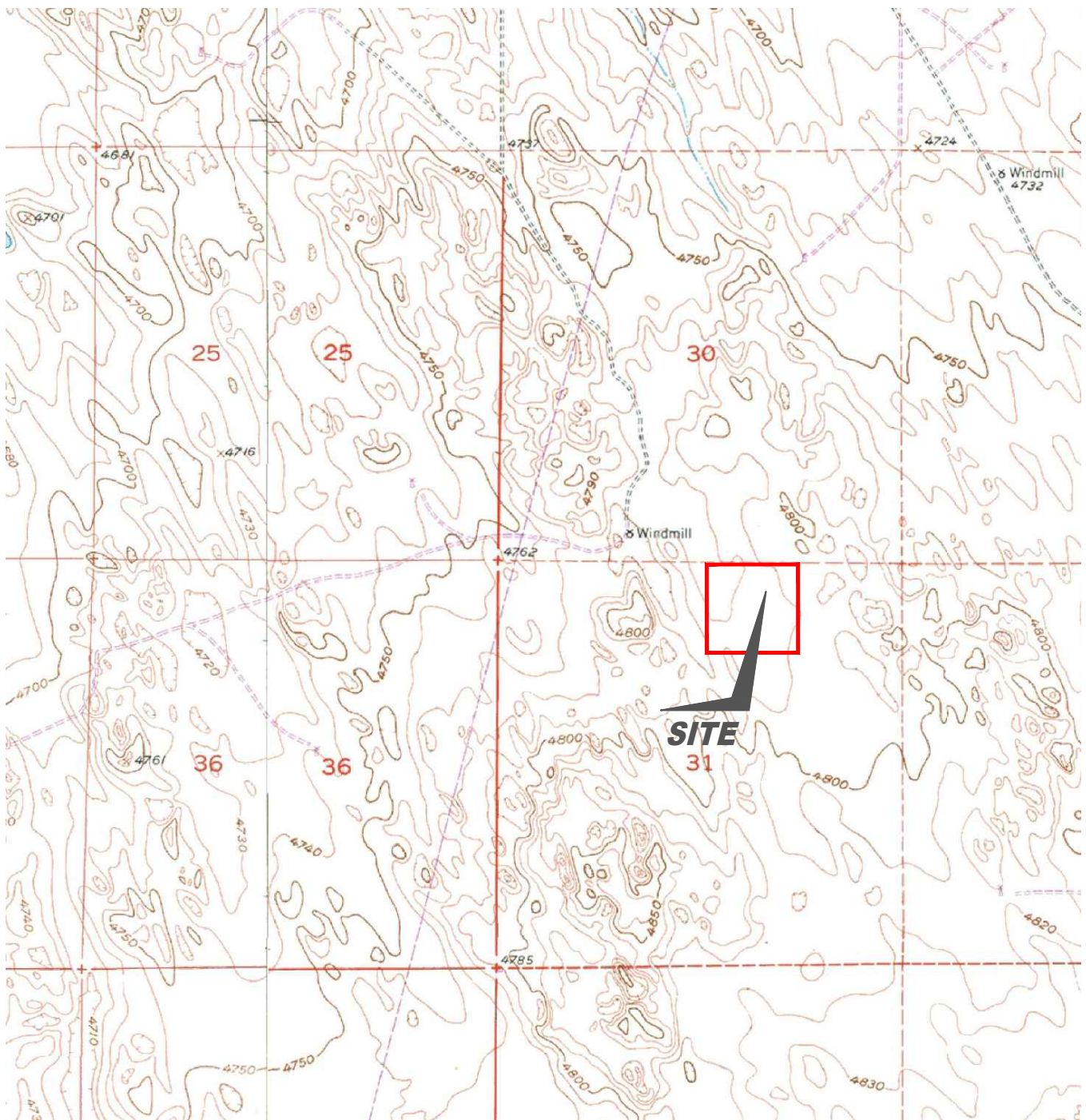
NA - Not analyzed

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

 = Material excavated and transported off site for disposal.

 = Confirmation Sample (Resample)

FIGURES



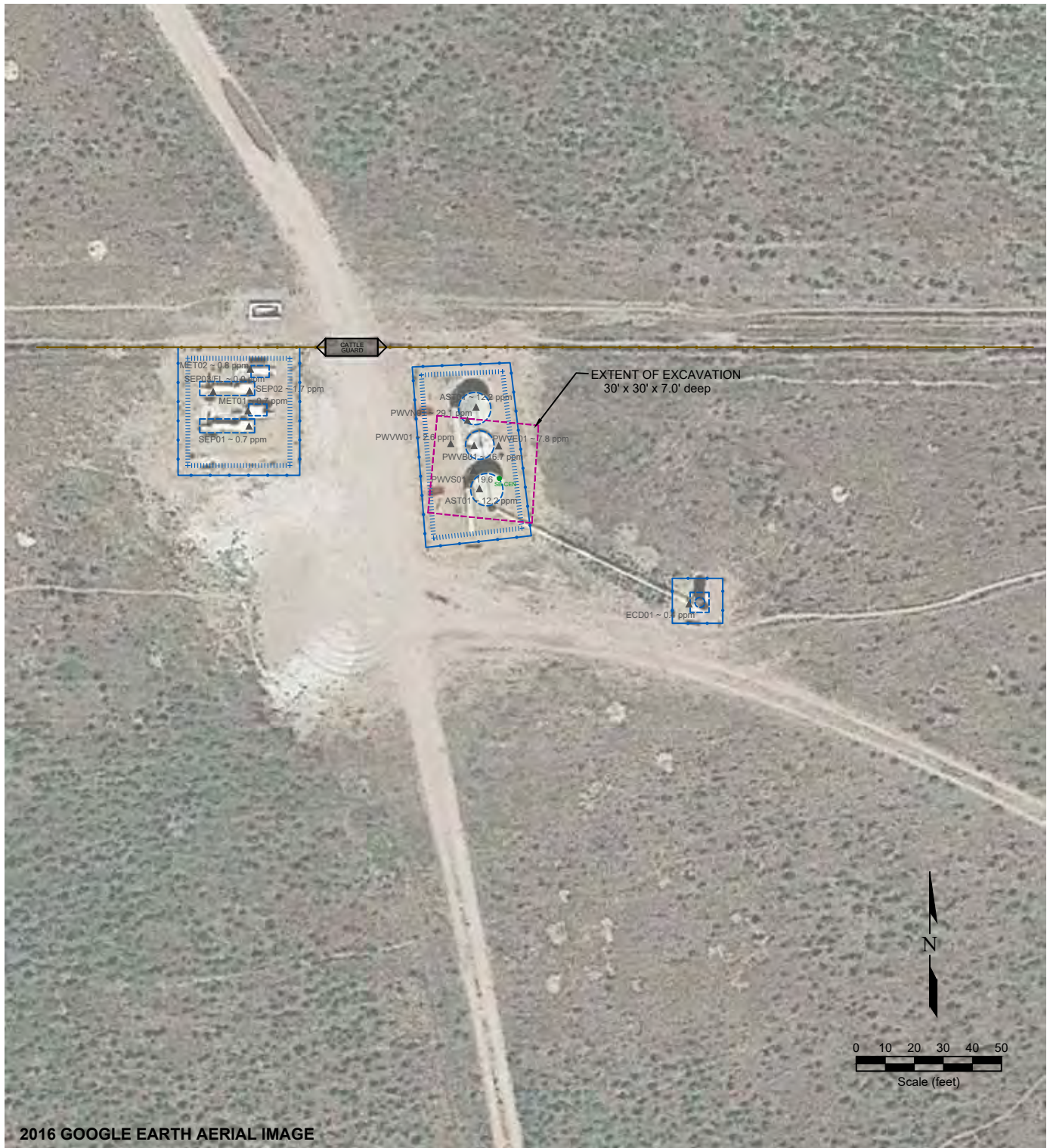
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY INC - BOOTH CC31-17D TANK
NWNE Sec. 31, T4N, R63W, 6th PM
Weld County, Colorado
40.276016°, -104.478727°

Project # CO23-029	API #	Facility # 426349
Date 12/3/24	Remediation # 25058	Filename 23029T





LEGEND

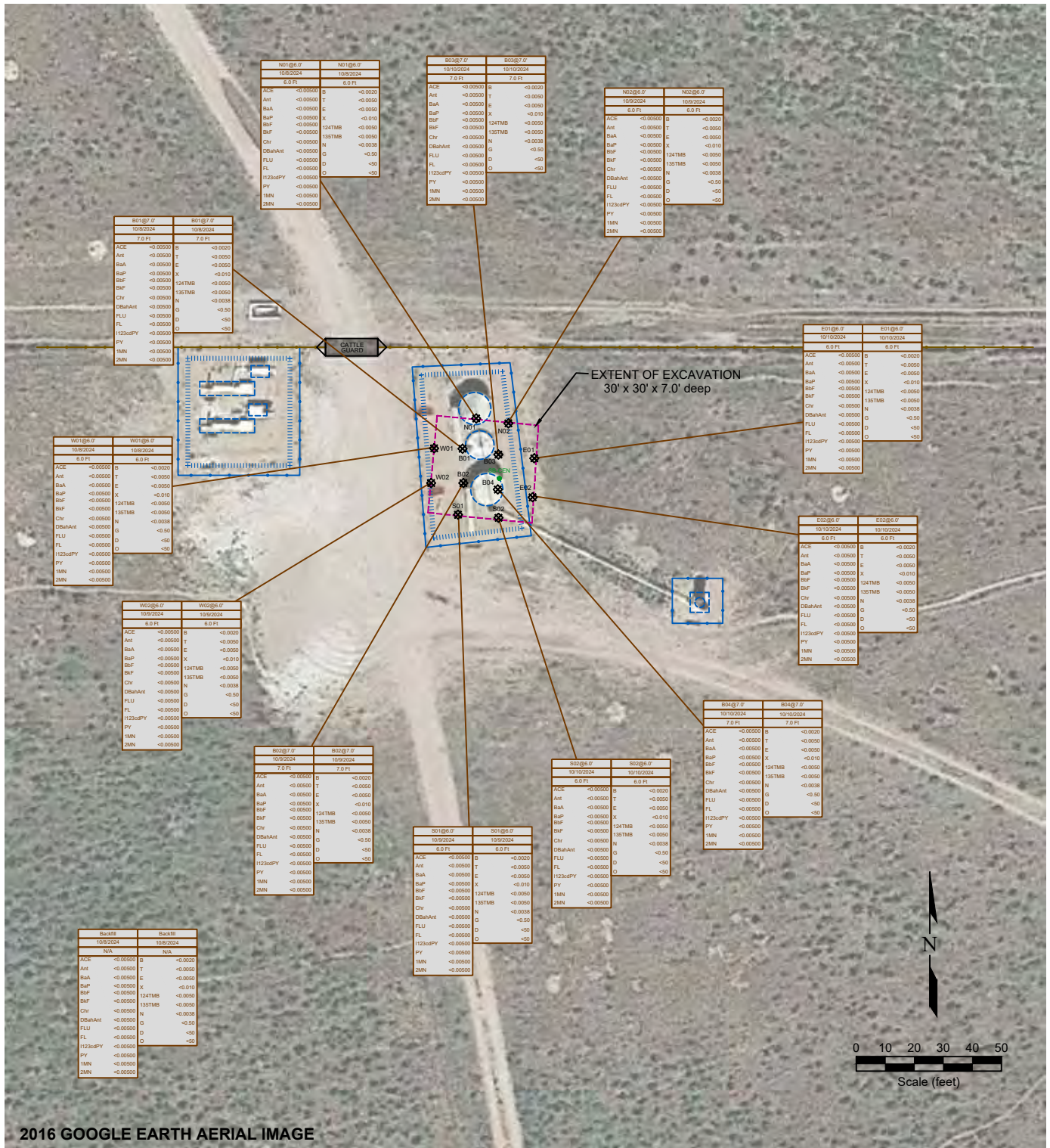
- SOIL BORING LOCATION
- ABOVE GROUND STORAGE TANK
- ▲ DECOMMISSIONING PID READING LOCATION
- FORMER FACILITY
- EXTENT OF EXCAVATION
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL

Figure 2
SITE MAP

NOBLE ENERGY INC - BOOTH CC31-17D TANK
 NWNE Sec. 31, T4N, R63W, 6th PM
 Weld County, Colorado
 40.276016°, -104.478727°

Project No. CO23-029	API #	Facility # 426349
Date 12/4/24	Remediation # 25058	Filename 23029Q1





2016 GOOGLE EARTH AERIAL IMAGE

LEGEND

- SOIL BORING LOCATION
- ⊗ SOIL SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION

SAMPLE ID	DATE	DEPTH (ft)	DATE SAMPLED	DEPTH (ft)	DATE SAMPLED
ACE	<0.0000	0	ACE	<0.0000	0
Ant	<0.0000	0	Ant	<0.0000	0
BaA	<0.0000	0	BaA	<0.0000	0
BaP	<0.0000	0	BaP	<0.0000	0
BbF	<0.0000	0	BbF	<0.0000	0
BkF	<0.0000	0	BkF	<0.0000	0
Chv	<0.0000	0	Chv	<0.0000	0
DBaAnt	<0.0000	0	DBaAnt	<0.0000	0
FLU	<0.0000	0	FLU	<0.0000	0
FL	<0.0000	0	FL	<0.0000	0
H123dPY	<0.0000	0	H123dPY	<0.0000	0
MN	<0.0000	0	MN	<0.0000	0
ZMN	<0.0000	0	ZMN	<0.0000	0

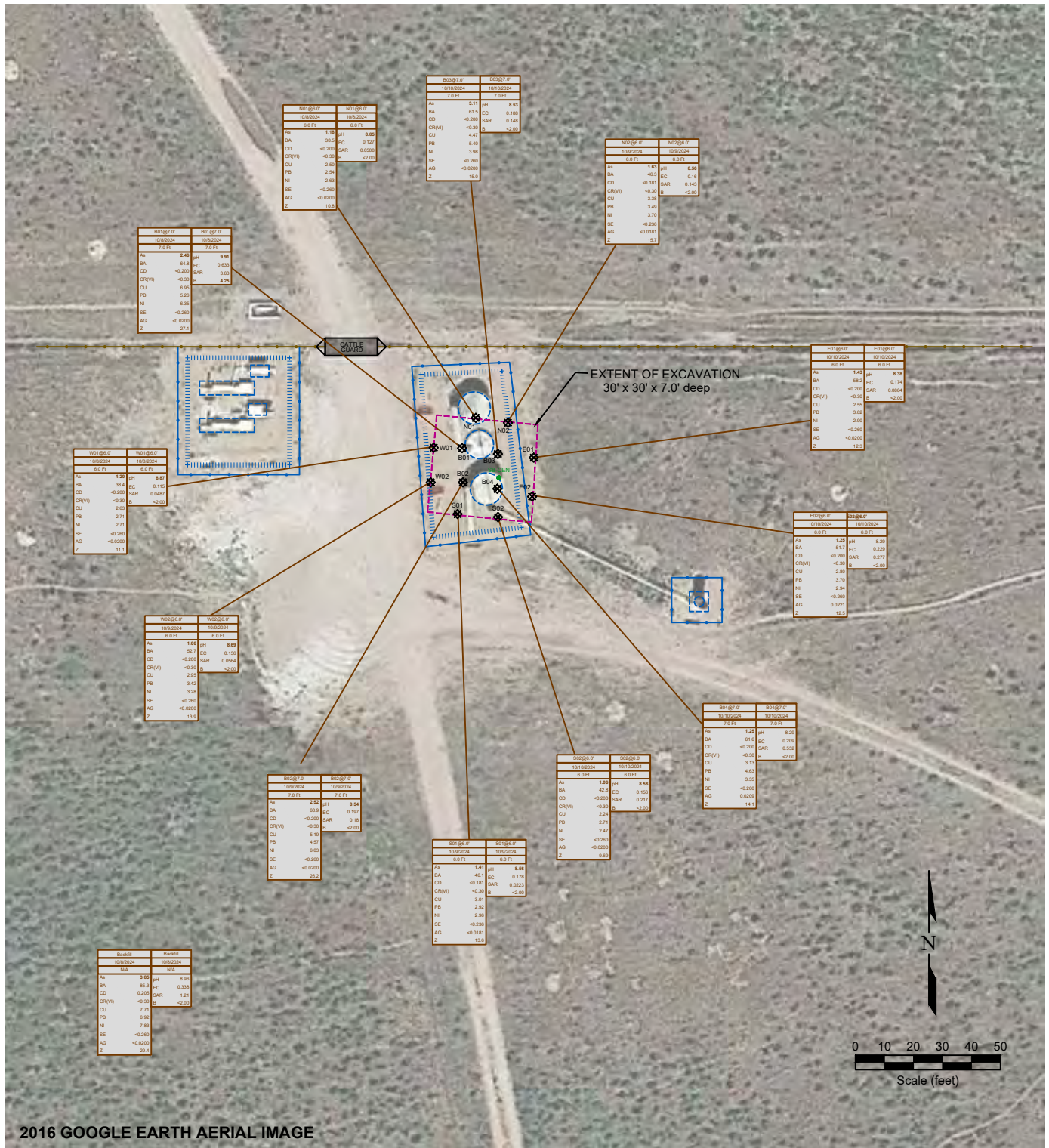
SAMPLE ID	DATE	DEPTH (ft)	SAMPLE ID	DATE	DEPTH (ft)
ACE	<0.0000	0	ACE	<0.0000	0
Ant	<0.0000	0	Ant	<0.0000	0
BaA	<0.0000	0	BaA	<0.0000	0
BaP	<0.0000	0	BaP	<0.0000	0
BbF	<0.0000	0	BbF	<0.0000	0
BkF	<0.0000	0	BkF	<0.0000	0
Chv	<0.0000	0	Chv	<0.0000	0
DBaAnt	<0.0000	0	DBaAnt	<0.0000	0
FLU	<0.0000	0	FLU	<0.0000	0
FL	<0.0000	0	FL	<0.0000	0
H123dPY	<0.0000	0	H123dPY	<0.0000	0
MN	<0.0000	0	MN	<0.0000	0
ZMN	<0.0000	0	ZMN	<0.0000	0

NOBLE ENERGY INC - BOOTH CC31-17D TANK NWNE Sec. 31, T4N, R63W, 6th PM Weld County, Colorado 40.276016° -104.478727°

Project No. CO23-029	API #	Facility # 426349	
Date 12/4/24	Remediation # 25058	Filename 23029Q1	

Figure 3

ORGANIC SOIL CHEMISTRY MAP



2016 GOOGLE EARTH AERIAL IMAGE

LEGEND

- SOIL BORING LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- EXTENT OF EXCAVATION
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL

SAMPLE	DATE	DEPTH	SAMPLE ID	DATE SAMPLED	DEPTH	SAMPLE ID	DATE SAMPLED	DEPTH
As	01/11/2024	0.00	As	01/11/2024	0.00	As	01/11/2024	0.00
BA	01/11/2024	0.00	BA	01/11/2024	0.00	BA	01/11/2024	0.00
CD	01/11/2024	0.00	CD	01/11/2024	0.00	CD	01/11/2024	0.00
CR(V)	01/11/2024	0.00	CR(V)	01/11/2024	0.00	CR(V)	01/11/2024	0.00
CU	01/11/2024	0.00	CU	01/11/2024	0.00	CU	01/11/2024	0.00
FE	01/11/2024	0.00	FE	01/11/2024	0.00	FE	01/11/2024	0.00
NI	01/11/2024	0.00	NI	01/11/2024	0.00	NI	01/11/2024	0.00
SE	01/11/2024	0.00	SE	01/11/2024	0.00	SE	01/11/2024	0.00
AG	01/11/2024	0.00	AG	01/11/2024	0.00	AG	01/11/2024	0.00
Z	01/11/2024	0.00	Z	01/11/2024	0.00	Z	01/11/2024	0.00

Figure 4
METALS AND INORGANIC SOIL CHEMISTRY MAP

NOBLE ENERGY INC - BOOTH CC31-17D TANK
NWNE Sec. 31, T4N, R63W, 6th PM
Weld County, Colorado
40.276016°, -104.478727°

Project No. CO23-029	API #	Facility # 426349	
Date 12/4/24	Remediation # 25058	Filename 23029Q1	

APPENDIX A

PHOTO LOG

Photo Log



Description:

#1A - Booth CC 31-17D Tank (Facility) - Excavation - 1st Floor Sample of Excavation - B01@7.0' - No Impacts Noted - PID: 0.1ppm

Photo Log



Description:

#1B - Booth CC 31-17D Tank (Facility) - Excavation - 2nd Floor Sample of Excavation - B02@7.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1C - Booth CC 31-17D Tank (Facility) - Excavation - 3rd Floor Sample of Excavation - B03@7.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1D - Booth CC 31-17D Tank (Facility) - Excavation - 4th Floor Sample of Excavation - B04@7.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1E - Booth CC 31-17D Tank (Facility) - Excavation - 1st North Sidewall Sample of Excavation - N01@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1F - Booth CC 31-17D Tank (Facility) - Excavation - 2nd North Sidewall Sample of Excavation - N02@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1G - Booth CC 31-17D Tank (Facility) - Excavation - 1st South Sidewall Sample of Excavation - S01@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1H - Booth CC 31-17D Tank (Facility) - Excavation - 2nd South Sidewall Sample of Excavation - S02@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1I - Booth CC 31-17D Tank (Facility) - Excavation - 1st East Sidewall Sample of Excavation - E01@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1J - Booth CC 31-17D Tank (Facility) - Excavation - 2nd East Sidewall Sample of Excavation - E02@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1K - Booth CC 31-17D Tank (Facility) - Excavation - 1st West Sidewall Sample of Excavation - W01@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1L - Booth CC 31-17D Tank (Facility) - Excavation - 2nd West Sidewall Sample of Excavation - W02@6.0' - No Impacts Noted - PID: 0.0ppm

Photo Log



Description:

#1M - Booth CC 31-17D Tank (Facility) - 1st Local Background Sample Dig - BKG01 - Samples Collected at 2.0ft, 4.0ft and 7.0ft

Photo Log



Description:

#1N - Booth CC 31-17D Tank (Facility) - 2nd Local Background Sample Dig - BKG02 - Samples Collected at 2.0ft, 4.0ft and 7.0ft

Photo Log



Description:

#10 - Booth CC 31-17D Tank (Facility) - 3rd Local Background Sample Bore - BKG03 - Samples Collected at 2.0ft, 4.0ft and 7.0ft

Photo Log



Description:

#1P - Booth CC 31-17D Tank (Facility) - 4th Local Background Sample Bore - BKG04 - Samples Collected at 2.0ft, 4.0ft and 7.0ft

Photo Log



Description:

#1Q - Booth CC 31-17D Tank (Facility) - 5th Local Background Sample Bore - BKG05 - Samples Collected at 2.0ft, 4.0ft and 7.0ft

APPENDIX B

COLORADO DEPT. OF WATER RESOURCES

WELL PERMIT DATA

WACOP
COLORADO DIVISION OF WATER RESOURCES

1313 Sherman Street - Room 818
 Denver, Colorado 80203

RECEIVED

OCT 15 1990

THIS FORM MUST BE SUBMITTED
 WITHIN 60 DAYS OF COMPLETION
 OF THE WORK DESCRIBED HERE-
 ON. TYPE OR PRINT IN BLACK
 INK.

WELL COMPLETION AND PUMP INSTALLATION REPORTPERMIT NUMBER 157907 157907

WATER RESOURCES
 STATE ENGINEER
 COLORADO

WELL OWNER Booth Bros. Land & LivestockNW 1/4 of the NE 1/4 of Sec. 31ADDRESS PO. Box 72 Lucerne, Co. 80646T. 4 N. 63 W. 6 P.M.DATE COMPLETED 8-29, 1990**HOLE DIAMETER**8 7/8 in. from 0 to 133 ft.

_____ in. from _____ to _____ ft.

_____ in. from _____ to _____ ft.

DRILLING METHOD RotaryCASING RECORD: Plain CasingSize 6 5/8 & kind steel from +1 to 19 ft.Size 5 & kind PVC from 19 to 133 ft.

Size _____ & kind _____ from _____ to _____ ft.

Perforated CasingSize 5 & kind PVC from 93 to 133 ft.

Size _____ & kind _____ from _____ to _____ ft.

Size _____ & kind _____ from _____ to _____ ft.

GROUTING RECORDMaterial CementIntervals 0-19Placement Method PouredGRAVEL PACK: Size 3/8 8-12Interval 19-133**TEST DATA**Date Tested 8-29-90, 19__Static Water Level Prior to Test 88 ft.Type of Test Pump BailedLength of Test 3 HRS/Sustained Yield (Metered) 7 GPMFinal Pumping Water Level 100'**WELL LOG**

From	To	Type and Color of Material	Water Loc.
0	24	Top soil	
24	53	Calico clay	
53	54	Rotten black silt	
54	62	Calico clay	
62	67	Silted tan sand stone	
67	75 1/2	Calico clay	
75 1/2	77 1/2	Rock gray granite very hard	
77 1/2	94	Gray shale w/rusted ss strks.	
94	131	Tan sandy brown s.s.	*
131	133	Gravel white S.S.	
TOTAL DEPTH <u>133'</u>			

Use additional pages necessary to complete log.

PUMP INSTALLATION REPORT

Pump Make Not installed by R & R

Type _____

Powered by _____ HP _____

Pump Serial No. _____

Motor Serial No. _____

Date Installed _____

Pump Intake Depth _____

Remarks _____

WELL TEST DATA WITH PERMANENT PUMP

Date Tested Not tested by R & R

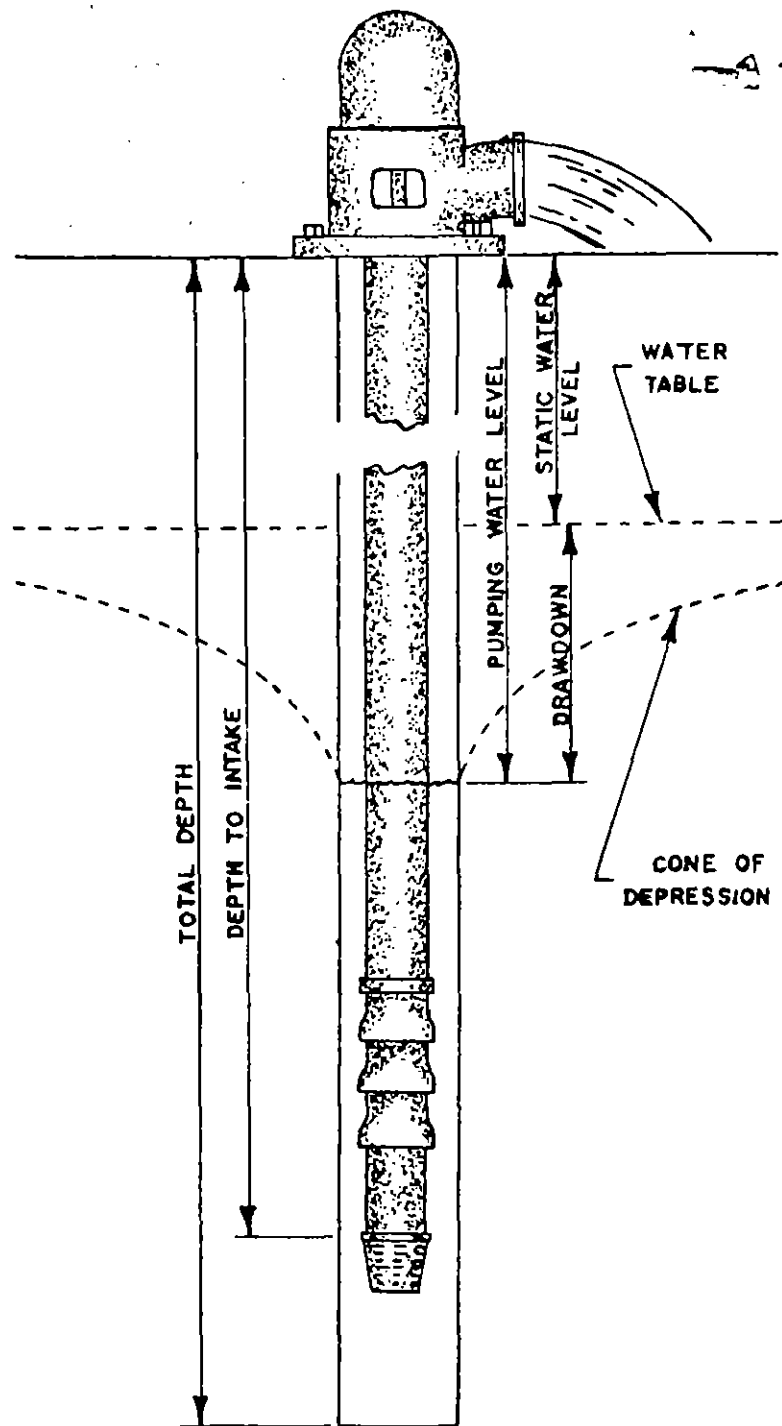
Static Water Level Prior to Test _____

Length of Test _____ Hours

Sustained yield (Metered) _____ GPM

Pumping Water Level _____

Remarks _____



CONTRACTORS STATEMENT

The undersigned, being duly sworn upon oath, deposes and says that he is the contractor of the well or pump installation described hereon; that he has read the statement made hereon; knows the content thereof, and that the same is true of his own knowledge.

Signature R & R Well & Pump Inc. By: [Signature] License No. 857

State of Colorado, County of Weld SS

Subscribed and sworn to before me this 10 day of October, 1990.

My Commission expires: My Commission Expires Feb. 12, 1991, 1990.

Notary Public Margaret J. Clement

FORM TO BE MADE OUT IN QUADRUPLICATE: WHITE FORM must be an original copy on both sides and signed. WHITE AND GREEN copies must be filed with the State Engineer. PINK COPY is for the Owner and YELLOW COPY is for the Driller.

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES

818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

857

WELL PERMIT NUMBER 157907

DIV. 1 CNTY. 62 WD 1 DES. BASIN MD

APPLICANT

BOOTH BROS LAND & LIVESTOCK
P O BOX 72
LUCERNE, CO 80646

APPROVED WELL LOCATION

COUNTY WELD
NW 1/4 NE 1/4 Section 31
Twp 4 N, Range 63 W S P.M.

DISTANCES FROM SECTION LINES

10 Ft. from North Section Line
2500 Ft. from East Section Line

PERMIT TO CONSTRUCT A WELL

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) Approved pursuant to CRS 37-92-602(3)(b)(II)(A) as the only well on a tract of land of 40 acres described as the NW 1/4 of the NE 1/4 of Sec. 31, Twp. 4N, Rng. 63W, 6th P.M., Weld County.
- 3) Production from this well is restricted to the Laramie-Fox Hills aquifer which corresponds to the interval between 145 feet and 480 feet below ground surface. Plain casing shall be installed and sealed to prevent production from other zones.
- 4) The use of ground water from this well is limited to the watering of livestock on farms and ranches.
- 5) The maximum pumping rate shall not exceed 15 GPM.
- 6) This well shall be constructed not more than 200 feet from the location specified on this permit.

Note: To insure a maximum productive life of this well, perforated casing should be set through the entire producing interval of the approved zone or aquifer indicated above.

JWB 8/15/90

APPROVED:
JWB

John A. Daniel
State Engineer

Receipt No. 0316291B

DATE ISSUED AUG 15 1990

By John W. Libby
EXPIRATION DATE AUG 15 1992

COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203

RECEIVED
AUG 02 '90
24E

PERMIT APPLICATION FORM

Application must be complete where applicable. Type or print in **BLACK INK**. No overstrikes or erasures unless initialed.

() A PERMIT TO USE GROUND WATER
(X) A PERMIT TO CONSTRUCT A WELL
FOR: (X) A PERMIT TO INSTALL A PUMP
() REPLACEMENT FOR NO. _____
() OTHER _____
WATER COURT CASE NO. _____

08-02-90 3:33 P
2 @ 60.00
032472 120.00
NWXDB P0011
ITL 120.00
CHG 0.00

4780 230.
CHEQUE 120.00

(1) APPLICANT - mailing address

NAME Booth Bros. Land & Livestock

STREET PO. Box 72

CITY Lucerne CO. 80646
(State) (Zip)

TELEPHONE NO. (303) 353 7055

(2) LOCATION OF PROPOSED WELL

County Weld

NW 1/4 of the NE 1/4, Section 31

Twp. 4 N, Rng. 63 W, 6 P.M.
(N, S) (E, W)

(3) WATER USE AND WELL DATA

Proposed maximum pumping rate (gpm) 15

Average annual amount of ground water to be appropriated (acre-feet): 1

Number of acres to be irrigated: None

Proposed total depth (feet): 250

Aquifer ground water is to be obtained from:

Larime Fox Hills

Owner's well designation _____

GROUND WATER TO BE USED FOR:

() HOUSEHOLD USE ONLY - no irrigation (0)
() DOMESTIC (1) () INDUSTRIAL (5)
(X) LIVESTOCK (2) () IRRIGATION (6)
() COMMERCIAL (4) () MUNICIPAL (8)

() OTHER (9) _____

DETAIL THE USE ON BACK IN (11)

(4) DRILLER

Name R & R Well & Pump Inc

Street PO. Box 577

City Greeley CO. 80632
(State) (Zip)

Telephone No. 353-3118 Lic. No. 857

FOR OFFICE USE ONLY: DO NOT WRITE IN THIS COLUMN

CL-1 1A6291
Receipt No. (316291B)
Basin _____ Dist. _____

CONDITIONS OF APPROVAL

This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of the permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.

APPLICATION APPROVED

PERMIT NUMBER _____

DATE ISSUED _____

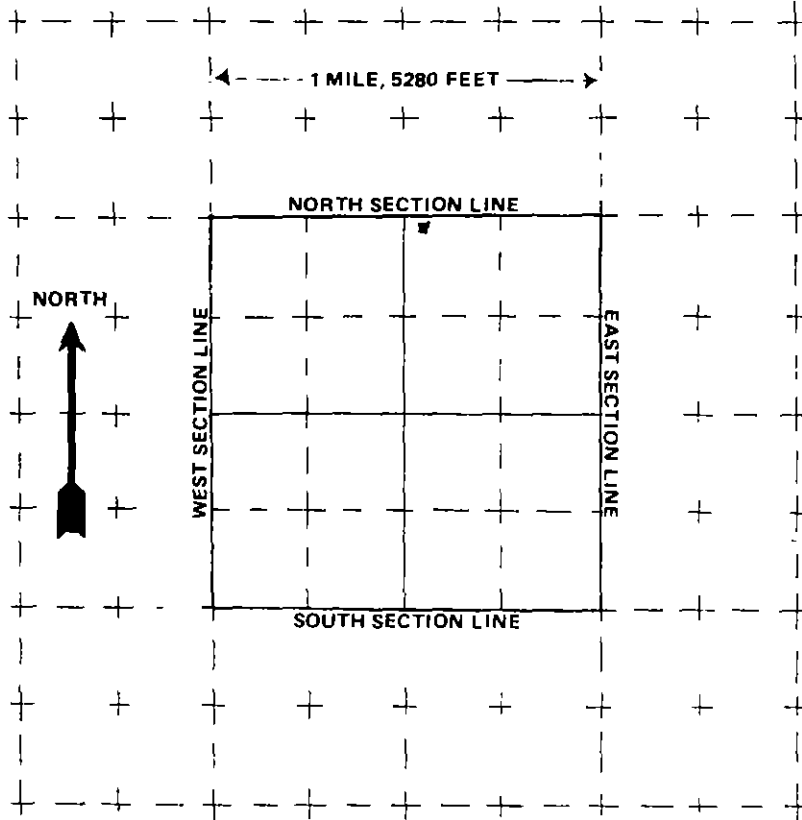
EXPIRATION DATE _____

(STATE ENGINEER)

BY _____

I.D. 1-01 COUNTY 12

(5) **THE LOCATION OF THE PROPOSED WELL** and the area on which the water will be used must be indicated on the diagram below. Use the CENTER SECTION (1 section, 640 acres) for the well location.



The scale of the diagram is 2 inches = 1 mile
Each small square represents 40 acres.

WATER EQUIVALENTS TABLE (Rounded Figures)

An acre-foot covers 1 acre of land 1 foot deep
1 cubic foot per second (cfs) . . . 449 gallons per minute (gpm)
A family of 5 will require approximately 1 acre-foot of water per year.
1 acre-foot . . . 43,560 cubic feet . . . 325,900 gallons.
1,000 gpm pumped continuously for one day produces 4.42 acre-feet.

(6) **THE WELL MUST BE LOCATED BELOW** by distances from section lines.

10 ft. from North sec. line
(north or south)

2500 ft. from East sec. line
(east or west)

LOT _____ BLOCK _____ FILING # _____

SUBDIVISION _____

(7) **TRACT ON WHICH WELL WILL BE LOCATED** Owner: Same as 1

No. of acres 40 Will this be the only well on this tract? Yes

(8) **PROPOSED CASING PROGRAM**

Plain Casing

6 in. from +1 ft. to 19 ft.

5 in. from 19 ft. to 190 ft.

Perforated casing

5 in. from 190 ft. to 250 ft.

_____ in. from _____ ft. to _____ ft.

(9) **FOR REPLACEMENT WELLS** give distance and direction from old well and plans for plugging it:

N/A

(10) **LAND ON WHICH GROUND WATER WILL BE USED:**

Owner(s): Same as 1 No. of acres: 40

Legal description: NW 1/4 Ne 1/4 Sect. 31 Twn. 4N Rng. 63 W 6 PM.

(11) **DETAILED DESCRIPTION** of the use of ground water: Household use and domestic wells must indicate type of disposal system to be used.

Livestock watering

(12) **OTHER WATER RIGHTS** used on this land, including wells. Give Registration and Water Court Case Numbers.

Type or right

Used for (purpose)

Description of land on which used

none

(13) **THE APPLICANT(S) STATE(S) THAT THE INFORMATION SET FORTH HEREON IS TRUE TO THE BEST OF HIS KNOWLEDGE.**

Booth Bros. Land & Livestock by Mark C Booth
SIGNATURE OF APPLICANT(S)

EXEMPT WELL DATA SHEET - DENVER BASIN, COLORADO

APPLICANT: BOOTH BROS. LAND & LIV. RECEIPT NO. 316291B
 LOCATION: NW1/4 OF NE1/4 OF SEC. 31, T.4N., R.63W. (10 NSL, 2500 ESL)

PROPOSED AQUIFER:
 SURFACE ELEVATION: 4780 NUMBER OF ACRES IN TRACT: 40

IS PROPERTY WITHIN SERVICE BOUNDARIES OF MUNICIPALITY S.B.5 CONSENT MAPS? NO ☒ YES ☐
 IF SUBDIVISION IS UNDER AUGMENTATION PLAN, CASE NO. IS _____, DIV. _____
 IF SUBDIVISION WAS RECOMMENDED FOR APPROVAL BY THE WATER MANAGEMENT BRANCH, DATE OF LETTER I
 INFORMATION ON SUBDIVISION OR TRACT OF LAND/SPECIAL RESTRICTIONS:

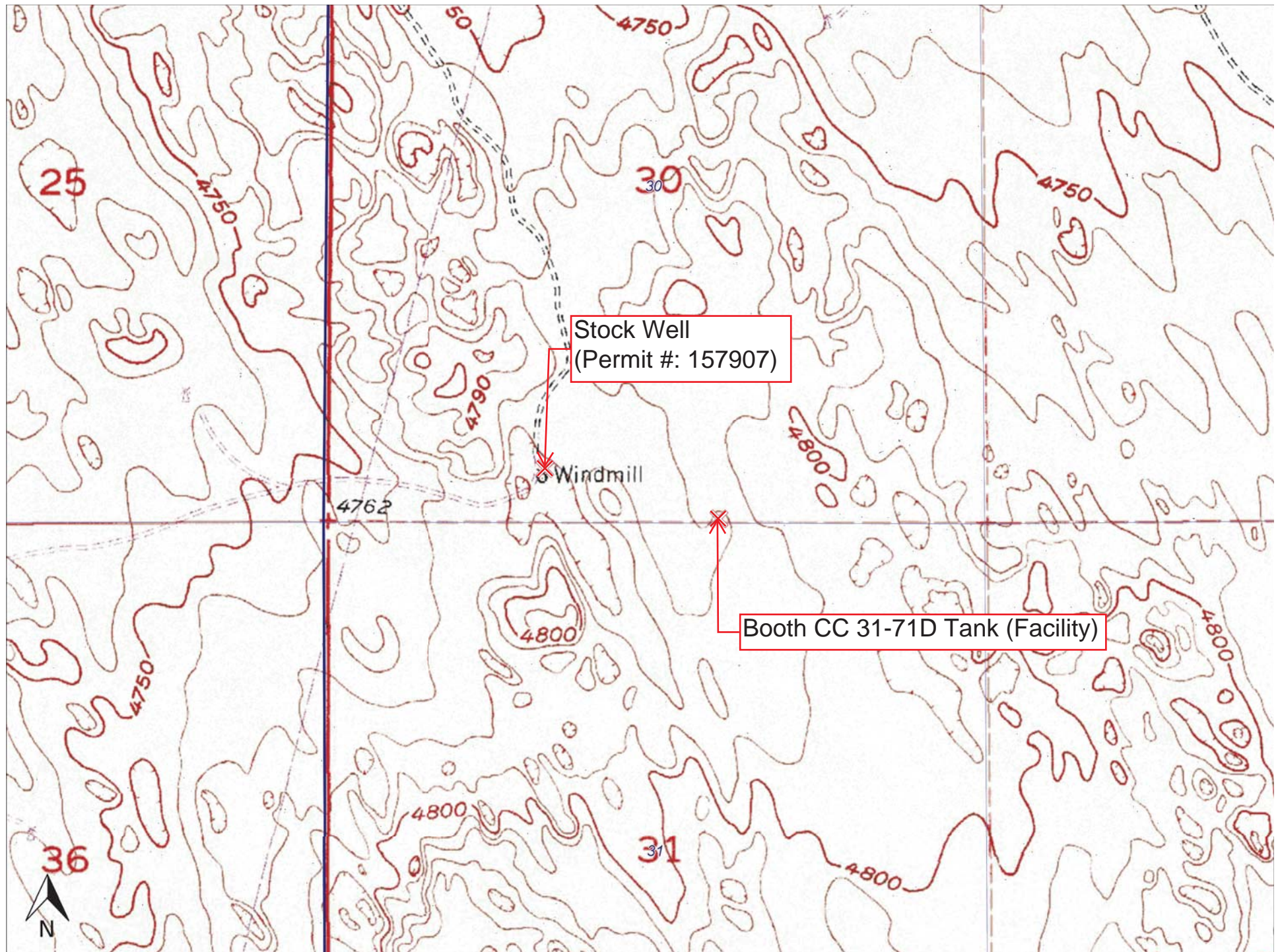
evaluated by JWB
 on 8/15/80

AQUIFER	ELEVATION		NET SAND	DEPTH TO		ANNUAL APPROP A-F	STATUS
	BOT.	TOP		BOT.	TOP		
UPPER DAWSON	---	---	---	---	---	---	---
LOWER DAWSON	---	---	---	---	---	---	---
DENVER	---	---	---	---	---	---	---
UPPER ARAPAHOE	---	---	---	---	---	---	---
LOWER ARAPAHOE	---	---	---	---	---	---	---
LARAMIE-FOX HILLS	4300	4635	171	480	145	10.200	NNT

note: E indicates location is at aquifer boundary and values may be more approximate.
 * indicates the proposed aquifer.

All values are interpolated from the S.B.5 data base assembled in November of 1986.

Booth Tank CC 31-71D Tank and Stock Well (Permit # 157907) Comparison Topo Map



Booth Tank CC 31-71D Tank and Stock Well (Permit # 157907) Comparison Map

