

DATE:	6/7/24
DESIGNED BY:	JW
DRAWN BY:	JW



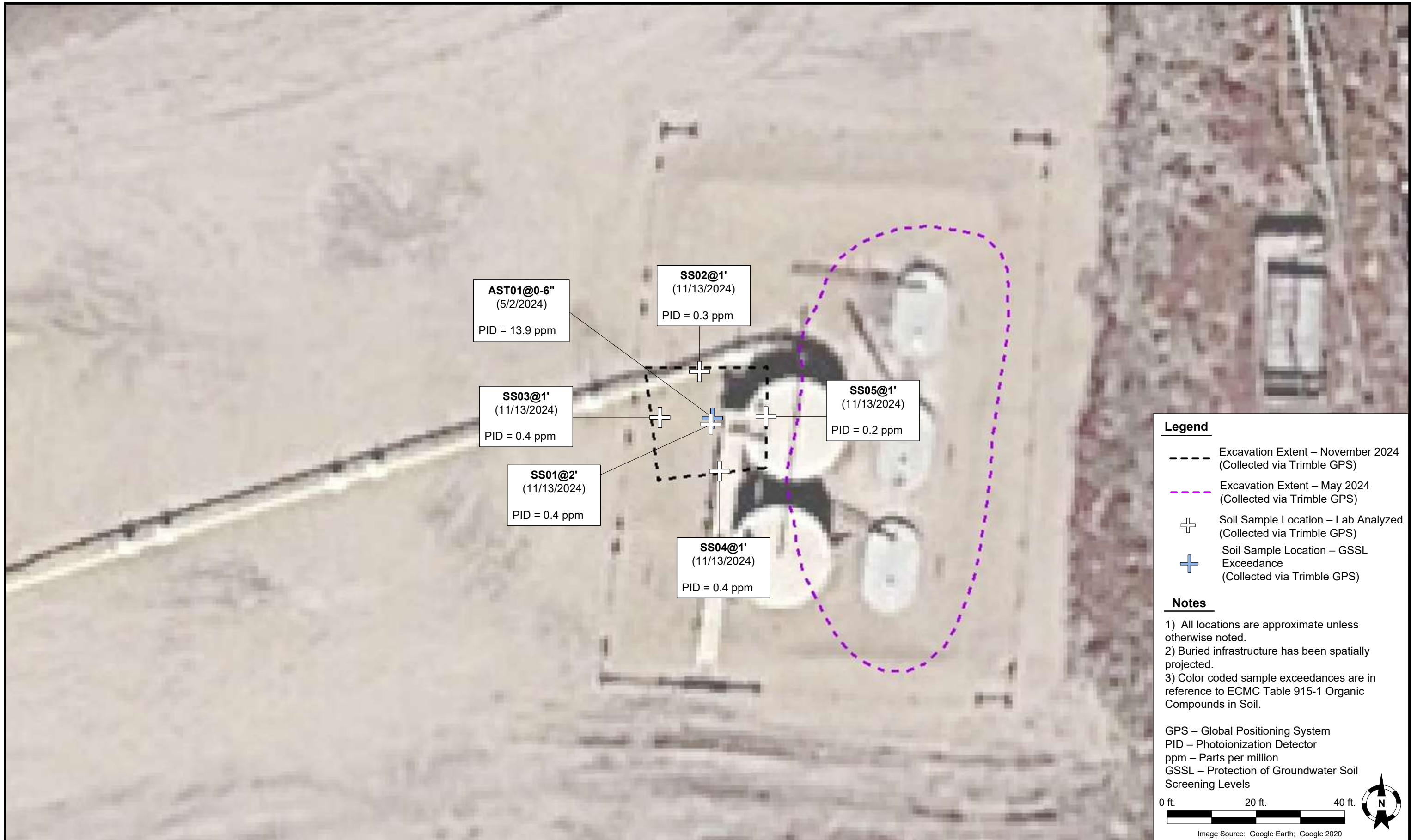
TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Wolfe USX CC07-16 Facility
SESW, Section 7, Township 4 North, Range 63 West
Weld County, Colorado

Tank Battery Closure & Soil
Analytical Results Map
(05/02/2024)

FIGURE
1



Legend

- Excavation Extent – November 2024 (Collected via Trimble GPS)
- - - Excavation Extent – May 2024 (Collected via Trimble GPS)
- + Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)
- + Soil Sample Location – GSSL Exceedance (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Color coded sample exceedances are in reference to ECMC Table 915-1 Organic Compounds in Soil.

GPS – Global Positioning System
 PID – Photoionization Detector
 ppm – Parts per million
 GSSL – Protection of Groundwater Soil Screening Levels

0 ft. 20 ft. 40 ft.

Image Source: Google Earth; Google 2020

DATE: November 13, 2024

DESIGNED BY: J. Whritenour

DRAWN BY: L. Reed

Tasman, Inc.
 6855 W 119th Avenue
 Broomfield, CO 80020




Noble Energy, Inc. – DJ Basin
Wolfe USX CC07-16 Facility
 SESW, Section 7, Township 4 North, Range 63 West
 Weld County, Colorado

EXCAVATION SITE MAP
 (AST01)

FIGURE
 2



Legend

-  Proposed Soil Boring Location
-  Excavation Extent – November 2024 (Collected via Trimble GPS)
-  Excavation Extent – May 2024 (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.

GPS – Global Positioning System

0 ft. 20 ft. 40 ft.

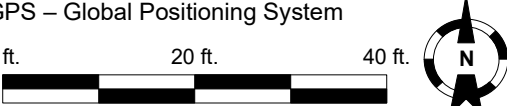


Image Source: Google Earth; Google 2020

DATE:	01/08/2024
DESIGNED BY:	JW
DRAWN BY:	BW



TASMAN
GEOSCIENCES

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6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Wolfe USX CC07-16 Facility
SESW, Section 7, Township 4 North, Range 63 West
Weld County, Colorado

Proposed Soil Boring
Location Map

FIGURE
3

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY, INC (100322)
WOLFE USX CC07-16, WELD COUNTY, COLORADO
REM # 33389

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
FLARE01 @ 0-6"	5/2/2024	0 - 0.5	40.319934	-104.482968	1.0	1.3
FLARE02 @ 0-6"	5/2/2024	0 - 0.5	40.319885	-104.482967	1.0	1.9
FL01R-S@3'	5/2/2024	3	40.319984	-104.482865	0.9	7.5
MH01 @ 0-6"	5/2/2024	0 - 0.5	40.319946	-104.482918	0.8	2.0
PWV01-B @ 4'	5/2/2024	4	40.319991	-104.482435	1.0	1.1
PWV01-N @ 2.5'	5/2/2024	2.5	40.320015	-104.482434	0.8	1.1
PWV01-W @ 2.5'	5/2/2024	2.5	40.320002	-104.482460	0.9	3.9
PWV01-E @ 2.5'	5/2/2024	2.5	40.319993	-104.482407	0.8	0.8
PWV02-B @ 4'	5/2/2024	4	40.319957	-104.482443	0.9	7.8
PWV02-W @ 2.5'	5/2/2024	2.5	40.319955	-104.482482	0.9	1.7
PWV02-E @ 2.5'	5/2/2024	2.5	40.319952	-104.482416	0.9	0.5
PWV03-B @ 4'	5/2/2024	4	40.319914	-104.482454	0.9	5.2
PWV03-W @ 2.5'	5/2/2024	2.5	40.319917	-104.482480	0.9	1.1
PWV03-S @ 2.5'	5/2/2024	2.5	40.319896	-104.482452	1.0	5.3
PWV03-E @ 2.5'	5/2/2024	2.5	40.319921	-104.482419	0.8	0.6
SEP01-DL @ 3'	5/2/2024	3	NC	NC	NC	2.6
AST01 @ 0-6"	5/2/2024	0 - 0.5	40.319964	-104.482526	0.8	13.9
AST02 @ 0-6"	5/2/2024	0 - 0.5	40.319913	-104.482521	0.9	3.2
SS01@2'	11/13/2024	2	40.319962	-104.482526	0.9	0.4
SS03@1'	11/13/2024	1	40.319964	-104.482548	0.9	0.4
SS04@1'	11/13/2024	1	40.319947	-104.482523	0.9	0.4
SS02@1'	11/13/2024	1	40.319979	-104.482531	0.9	0.3
SS05@1'	11/13/2024	1	40.319965	-104.482503	1.0	0.2

Notes:

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

NC = Not collected

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY, INC (100322)
WOLFE USX CC07-16, WELD COUNTY, COLORADO
REM # 33389

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**		
FL01R-S@3'	05/02/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
AST01@0-6"	05/02/2024	0 - 0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0-6"	05/02/2024	0 - 0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-B@4'	05/02/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-W@2.5'	05/02/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV02-B@4'	05/02/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV02-W@2.5'	05/02/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV03-B@4'	05/02/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV03-S@2.5'	05/02/2024	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@3'	05/02/2024	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	110	<0.50	110	<50
SS01@2'	11/13/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<500
SS02@1'	11/13/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<500
SS03@1'	11/13/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<500
SS04@1'	11/13/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<500
SS05@1'	11/13/2024	1	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<500

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s).
2. Pink & 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.

ECMC = Energy & Carbon Management Commission

(<) = 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

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

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY, INC (100322)
WOLFE USX CC07-16, WELD COUNTY, COLORADO
REM # 33389

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
FL01R-S@3'	05/02/2024	3	<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
AST01@0-6"	05/02/2024	0 - 0.5	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0101	0.0218
AST02@0-6"	05/02/2024	0 - 0.5	<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
PWV01-B@4'	05/02/2024	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
PWV01-W@2.5'	05/02/2024	2.5	<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
PWV02-B@4'	05/02/2024	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
PWV02-W@2.5'	05/02/2024	2.5	<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	0.00697
PWV03-B@4'	05/02/2024	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
PWV03-S@2.5'	05/02/2024	2.5	<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
SEP01-DL@3'	05/02/2024	3	<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
SS01@2'	11/13/2024	2	<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
SS02@1'	11/13/2024	1	<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
SS03@1'	11/13/2024	1	<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
SS04@1'	11/13/2024	1	<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
SS05@1'	11/13/2024	1	<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

Notes:

1. Bold values exceed the ECMC Table 915-1 limit(s).
2. Pink & 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.

ECMC = Colorado Energy & Carbon Management Commission

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

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

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

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY, INC(100322)
WOLFE USX CC07-16, WELD COUNTY, COLORADO
REM # 33389

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
FL01R-S@3'	05/02/2024	3	7.75	0.045	0.0416	<2.00
AST01@0-6"	05/02/2024	0 - 0.5	9.12	0.265	1.30	2.73
AST02@0-6"	05/02/2024	0 - 0.5	7.53	0.0944	0.431	<2.00
PWV01-B@4'	05/02/2024	4	9.02	0.271	0.144	<2.00
PWV01-W@2.5'	05/02/2024	2.5	8.19	0.266	0.340	<2.00
PWV02-B@4'	05/02/2024	4	8.40	0.674	2.52	<2.00
PWV02-W@2.5'	05/02/2024	2.5	7.89	0.168	0.319	<2.00
PWV03-B@4'	05/02/2024	4	8.52	0.254	0.287	<2.00
PWV03-S@2.5'	05/02/2024	2.5	8.21	0.157	0.0861	<2.00
SEP01-DL@3'	05/02/2024	3	8.04	0.425	4.12	2.66
SS01@2'	11/13/2024	2	7.99	0.106	0.0137	<2.00
SS02@1'	11/13/2024	1	7.16	0.129	0.0502	<2.00
SS03@1'	11/13/2024	1	7.08	0.0864	0.078	<2.00
SS04@1'	11/13/2024	1	8.27	0.141	0.128	<2.00
SS05@1'	11/13/2024	1	7.08	0.0644	0.034	<2.00

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.
- Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
- Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

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

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY, INC (100322)
WOLFE USX CC07-16, WELD COUNTY, COLORADO
REM # 33389

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
FL01R-S@3'	05/02/2024	3	1.98	69.4	0.548	<0.30	7.23	6.13	6.20	<0.260	0.0271	27.8
AST01@0-6"	05/02/2024	0 - 0.5	1.10	49.3	<0.180	<0.30	3.76	5.22	3.20	<0.234	0.0225	13.9
AST02@0-6"	05/02/2024	0 - 0.5	1.08	52.7	<0.200	<0.30	3.79	5.20	3.43	<0.260	0.0270	14.6
PWV01-B@4'	05/02/2024	4	1.67	101	0.242	<0.30	3.82	6.13	4.51	<0.260	0.0334	16.8
PWV01-W@2.5'	05/02/2024	2.5	1.19	47.1	<0.200	<0.30	3.50	4.75	3.14	<0.260	0.0212	13.2
PWV02-B@4'	05/02/2024	4	2.15	145	0.262	<0.30	3.91	6.50	4.99	<0.234	0.0396	16.9
PWV02-W@2.5'	05/02/2024	2.5	1.20	57.6	<0.200	<0.30	3.73	5.29	3.51	<0.260	0.0239	14.6
PWV03-B@4'	05/02/2024	4	1.13	67.3	0.217	<0.30	4.55	7.18	3.79	<0.236	0.0306	16.5
PWV03-S@2.5'	05/02/2024	2.5	1.07	56.3	0.209	<0.30	3.88	5.68	3.42	<0.260	0.0250	15.6
SEP01-DL@3'	05/02/2024	3	1.21	66.5	<0.200	<0.30	3.79	5.09	3.48	<0.260	<0.0200	14.1
SS01@2'	11/13/2024	2	1.65	52.8	<0.200	<0.30	5.45	5.18	3.66	<0.260	0.0248	22.5
SS02@1'	11/13/2024	1	1.59	52.7	<0.200	<0.30	5.33	5.15	3.52	<0.260	0.0238	21.0
SS03@1'	11/13/2024	1	2.04	74.0	0.209	<0.30	7.69	6.80	4.19	<0.260	0.0302	30.3
SS04@1'	11/13/2024	1	1.61	47.6	<0.200	<0.30	5.05	4.78	3.36	<0.260	0.0212	18.8
SS05@1'	11/13/2024	1	1.98	63.0	0.220	<0.30	7.55	7.22	3.98	<0.260	0.0295	27.3

Notes:

- 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. Compound falls within ECMC Table 915-1 Footnote 9.
5. 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

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



SITE NAME: Wolfe USX CC07-13,16							DATE: 11/13/2024	REM. PROJECT #:	WEATHER: Sunny 45
SITE DIRECTIONS: RD 46 and county rd 61 continue on county rd 46 east .25 miles into							CLIENT: PDC		
LEGALS AND LAT/LONG: 40.320227, -104.482246							TASMAN PERSONNEL: Jon Meier		
SOIL TYPES: Well Graded Sand - SW							SURFACE GRADIENT: Southeast		
SOIL SAMPLING							FACILITY INFRASTRUCTURE		
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?
11/13/2024 14:22	SS01@2'	0.4	No Staining	No Odor	Yes	Lab	Above Ground Storage Tank (AST)	1	<input checked="" type="checkbox"/>
11/13/2024 14:24	SS02@1'	0.3	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		
11/13/2024 14:26	SS03@1'	0.4	No Staining	No Odor	Yes	Lab	Separator		
11/13/2024 14:28	SS04@1'	0.4	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)		
11/13/2024 14:30	SS05@1'	0.2	No Staining	No Odor	Yes	Lab	Dump Line		
							Wellhead		
							Flowline		
							Other:		
							Soil Loads Removed		
							IMPACTED SOIL IDENTIFIED?		
							ESTIMATED VOLUME OF IMPACTS:		
							Date	Number	CY
							11/13/2024	1	
							Total Removed	1	0
							Disposal Facility:		
							Groundwater Recovery		
							DATE GW ENCOUNTERED:	DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?		
							LNAPL OR SHEEN OBSERVED ON GW?		
GROUNDWATER SAMPLING							Date	BBLs	
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?			
							Total Removed	0	
							Disposal Facility:		

					
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions:			Notes/Conditions:		



Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions:			