



Facility Closure Investigation and Environmental Summary

Novacek C28-27D Wellhead

ECMC Remediation Project #34736

Weld County, Colorado

Attachments:

Figure 1 – General Location Map

Figure 2 – Wellhead Soil Sample and Field Screening Locations

Figure 3 – Supplemental Site Investigation Map

Table 1 – Soil Sample and Field Screening Location Information

Table 2 – Soil Analytical Results Summary Table – Volatile Organics

Table 3 – Soil Analytical Results Summary Table – PAHs

Table 4 – Soil Analytical Results Summary Table – Soil Suitability

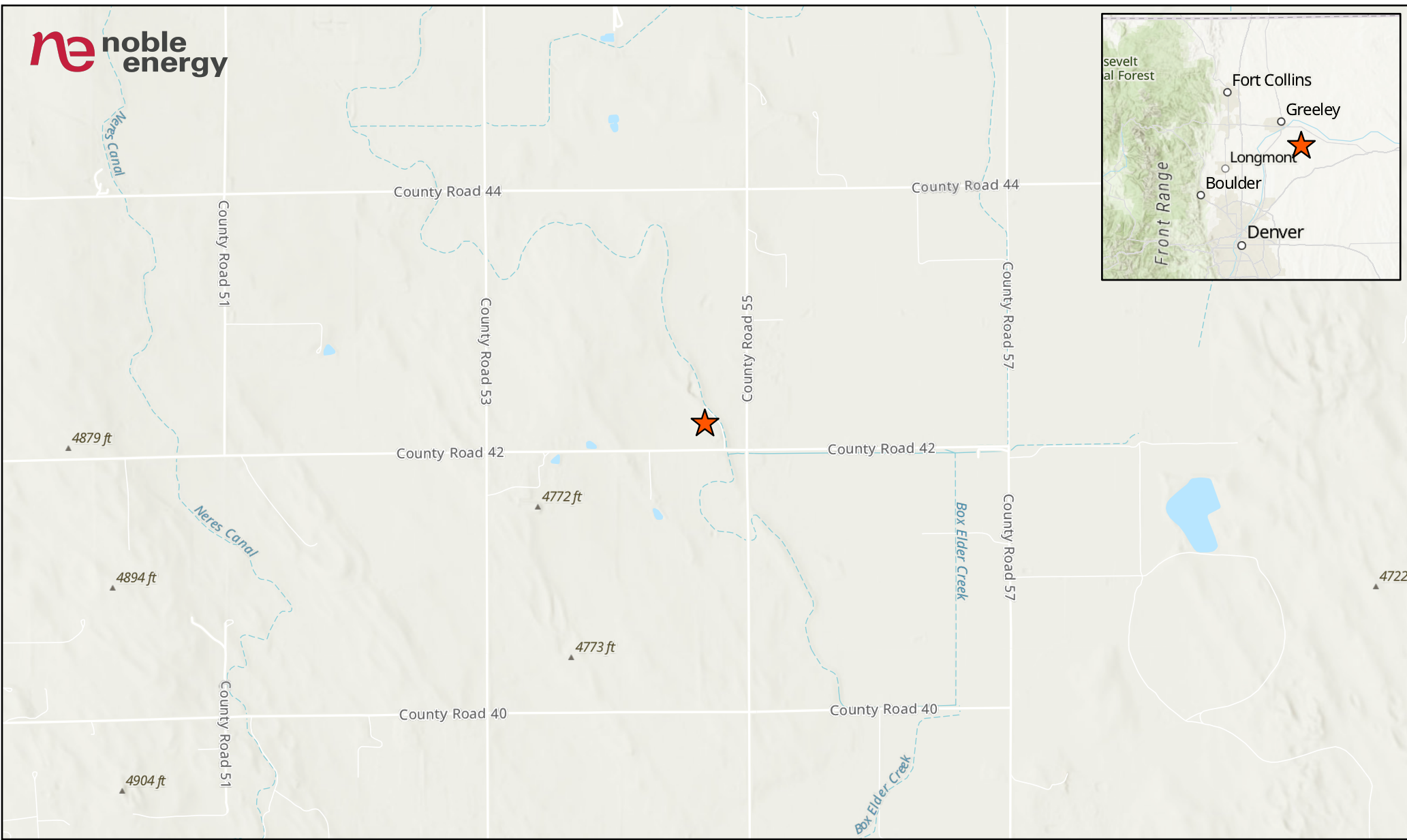
Table 5 – Soil Analytical Results Summary Table – Metals

Attachment A: Photographic Log

Attachment B: Facility Closure Checklists

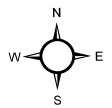
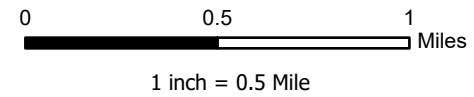
Attachment C: Field Form

FIGURES



LEGEND

Site Location



Project No: 024-214

Map By: JW

Date: 07/25/2024

**NOVACEK C28-27D WELLHEAD
GENERAL LOCATION MAP**
NOBLE ENERGY
SE 1/4 SE 1/4 SECTION 21
T4N R64W, 6TH PM
WELD COUNTY, COLORADO



1843 Sunlight Dr.
Longmont, CO 80504
303.378.4036

Figure

1



NOTE:
 XXXX@X = Sample Name @ Depth in Feet
BOLD - Above ECMC Table 915-1 Standards
 "mg/kg" = Milligrams per kilogram



Figure 2
Soil Sample and
Field Screening Locations

NOVACEK C28-27D WH
 SESE-SEC 21-T4N-R64W
 Weld County, Colorado
 Noble Energy Inc.

- Soil Sample
- Background Sample
- Screening Point
- Flowline Removed

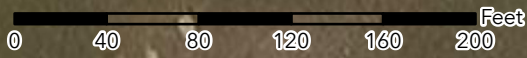
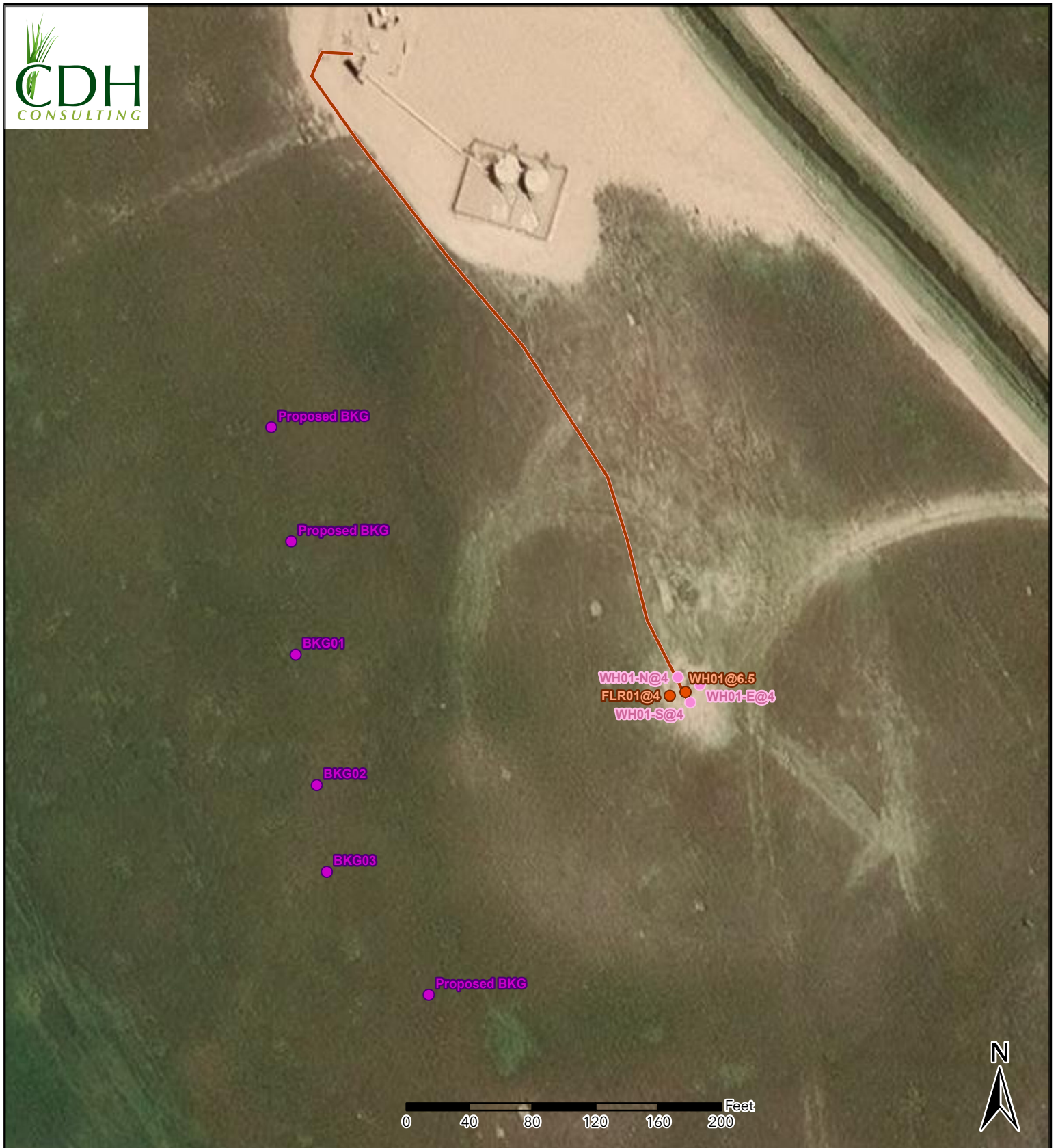


Figure 3
Supplemental Site Investigation Map
 NOVACEK C28-27D WH
 SESE-SEC 21-T4N-R64W
 Weld County, Colorado
 Noble Energy Inc.

- Soil Sample
- Background Sample
- Screening Point
- Flowline Removed

TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
NOVACEK C28-27D, WELD COUNTY, COLORADO
REM # 34736

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude/Longitude			
WH01@6	5/16/2024	6	40.2922286	-104.549413	NM	0.0
FLR01@4	5/16/2024	4	40.2922236	-104.549440	NM	0.0
WH01-N@4	5/16/2024	4	40.2922482	-104.549426	NM	0.0
WH01-S@4	5/16/2024	4	40.2922148	-104.549404	NM	0.0
WH01-E@4	5/16/2024	4	40.2922383	-104.549388	NM	0.0
WH01@6.5	7/1/2025	6.5	40.2922286	-104.549413	NM	0.6
BKG01@4'	7/18/2025	4	40.2922710	-104.550080	0.962701	0.0
BKG01@6'	7/18/2025	6	40.2922710	-104.550080	0.962701	0.3
BKG02@4'	7/18/2025	4	40.2920990	-104.550044	0.855158	0.4
BKG02@6'	7/18/2025	6	40.2920990	-104.550044	0.855158	0.1
BKG03@4'	7/18/2025	4	40.2919840	-104.550026	0.911904	0.0
BKG03@6'	7/18/2025	6	40.2919840	-104.550026	0.911904	0.8

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

ft = Feet

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
NOVACEK C28-27D, WELD COUNTY, COLORADO
REM # 34736

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**		
WH01@6.5	7/1/2025	6.5	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002	<125.200	<0.200	<25.0	<100

1. Bold values exceed the ECMC Table 915-1 limit(s)
 2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
 3. * Indicates laboratory minimum detection limit in excess of SSL
 4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg
- (<) = Analytical result is less than the indicated laboratory reporting limit.
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics
TPH-DRO = Total petroleum hydrocarbons - diesel range organics
TPH-ORO = Total petroleum hydrocarbons - oil range organics
mg/kg = Milligrams per kilogram
ft = Feet

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE 100322
NOVACEK C28-27D, WELD COUNTY, COLORADO
REM # 34736

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
WH01@6.5	7/1/2025	6.5	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002

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
- (<) = Analytical result is less than the indicated laboratory reporting limit.
mg/kg = Milligrams per kilogram
ft = Feet

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
NOVACEK C28-27D, WELD COUNTY, COLORADO
REM # 34736

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
WH01@6.5	7/1/2025	6.5	8.45	0.272	1.88	<0.0998
BKG01@4'	7/18/2025	4	6.84	0.188	0.311	<0.100
BKG01@6'	7/18/2025	6	7.34	0.212	0.248	<0.100
BKG02@4'	7/18/2025	4	6.74	0.145	0.186	<0.100
BKG02@6'	7/18/2025	6	6.98	0.169	0.187	<0.100
BKG03@4'	7/18/2025	4	6.67	0.127	0.172	<0.100
BKG03@6'	7/18/2025	6	7.76	0.519	0.817	<0.100
Maximum Background Concentration			7.76	0.519	0.817	NA

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

2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.

3. Brown highlighted soil analytical values indicate a regulatory exceedance.

NA = Not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE 100322
NOVACEK C28-27D, WELD COUNTY, COLORADO
REM # 34736

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
WH01@6.5	7/1/2025	6.5	1.05	<72.8	<0.338	0.120	<40.9	<12.4	<23.1	<0.231	<0.711	<329
BKG01@4'	7/18/2025	4	3.94	101	<0.100	0.545	<10.0	<10.0	<10.0	0.219	<0.500	<50.0
BKG01@6'	7/18/2025	6	6.45	108	<0.100	0.960	<10.0	<10.0	<10.0	0.375	<0.500	<50.0
BKG02@4'	7/18/2025	4	4.33	74.3	<0.100	0.550	<10.0	<10.0	<10.0	0.248	<0.500	<50.0
BKG02@6'	7/18/2025	6	9.19	164	<0.100	0.992	<10.0	<10.0	<10.0	0.501	<0.500	<50.0
BKG03@4'	7/18/2025	4	3.44	102	<0.100	0.608	<10.0	<10.0	<10.0	0.170	<0.500	<50.0
BKG03@6'	7/18/2025	6	2.11	160	<0.100	0.279	<10.0	<10.0	<10.0	<0.100	<0.500	<50.0
1.25x Maximum Background Concentration			11.5	205	NA	1.240	NA	NA	NA	0.626	NA	NA

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

ECMC = Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft = Feet

* Indicates laboratory minimum detection limit in excess of SSL

NA = Not analyzed

**ATTACHMENT A
PHOTOGRAPHIC LOG**

Novacek C28-27D Wellhead Photographic Log



Novacek C28-27D Wellhead Photographic Log



Novacek C28-27D Wellhead Photographic Log



Novacek C28-27D Wellhead Photographic Log



Photographic Log

NOVACEK C28-27D - REM #34436

Noble Energy, Inc

07/18/2025



Photo 1: View of BKG01 sample location, facing northwest

Photographic Log

NOVACEK C28-27D - REM #34436

Noble Energy, Inc

07/18/2025



Photo 2: View of BKG02 sample location, facing south

Photographic Log
NOVACEK C28-27D - REM #34436
Noble Energy, Inc
07/18/2025

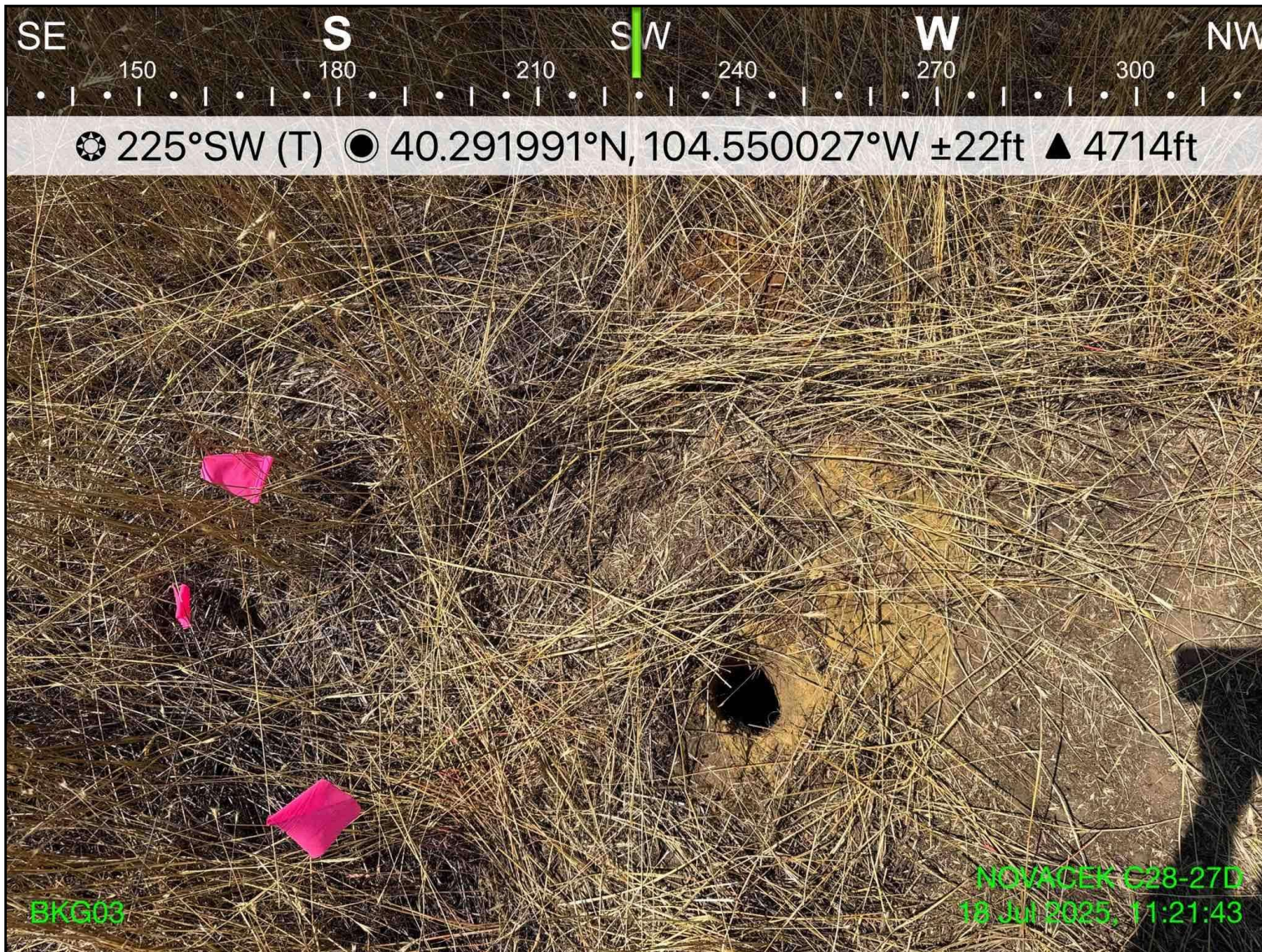


Photo 3: View of BGK03 sample location, facing southwest

**ATTACHMENT B
FACILITY CLOSURE CHECKLISTS**

Wellhead Closure Checklist

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

Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure	
Site Name & COGCC Facility Number: Novacek C28-27D, 426071		Date: 5/16/2024 and 7/1/2025						Remediation Project #: 34736	
Associated Wells: NA		Age of Site: 2/10/2012-spud date						Number of Photos Attached: 4	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.292230 / -104.549400							Estimated Facility Size (acres): ~0.01		

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

Overall good

USCS Soil Type: SM Estimated Depth to Groundwater: Unknown as none encountered

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

None encountered or observed

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

None encountered or observed

Wellhead(s)

Well API	05-123-34562					
Age	2/10/2012-spud date					
Condition of surface around wellhead	Good					
PID Readings	0.0 ppm					
Condition of subsurface (staining present)	Good					
PID Readings	0.6 ppm					
Sample taken? Location/Sample ID#	WH01@6.5					
Photo Number(s)	1-4					

Other observations regarding wellheads:

Summary

Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards

Total number of samples field screened: 5	Total number of samples collected: 5
Highest PID Reading: 0.6 ppm	Total number of samples submitted to lab for analysis: 1

If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	Estimated spill volume:
Lateral extent:	Volume of soil removed:

Is additional investigation required?

Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils

Measured depth to groundwater:	Was remedial groundwater removal conducted? <input type="checkbox"/> Yes <input type="checkbox"/> No
Date Groundwater was encountered:	Commencement date of removal:
Sheen on groundwater? <input type="checkbox"/> Yes <input type="checkbox"/> No	Volume of groundwater removed prior to sampling:
Free product observed? <input type="checkbox"/> Yes <input type="checkbox"/> No	Volume of groundwater removed post sampling:
Total number of samples collected:	Total Volume of groundwater removed:
Total number of samples submitted to lab for analysis:	

**ATTACHMENT C
FIELD FORM**

