



CDH Consulting, LLC  
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## **Wellhead Closure Investigation and Environmental Summary**

WELLS RANCH USX AA13-01 Wellhead

ECMC Remediation Project #40473

Weld County, Colorado

### **Attachments:**

**Field Form**

**Figure 1 – Site Location Map**

**Figure 2 – Soil Sample and Field Screening Locations Map**

**Figure 3 – Supplemental Site Investigation Map**

**Table 1 – Field Data Summary Table**

**Table 2 – Summary of Volatile Organic Soil Chemistry Data**

**Table 3 – Summary of Polycyclic Aromatic Hydrocarbon Soil Chemistry Data**

**Table 4 – Summary of Soil Suitability for Reclamation**

**Table 5 – Summary of Metals in Soil Chemistry Data**

**Photographic Log**

**Wellhead Closure Checklist**



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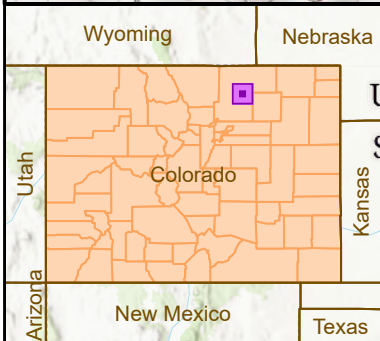
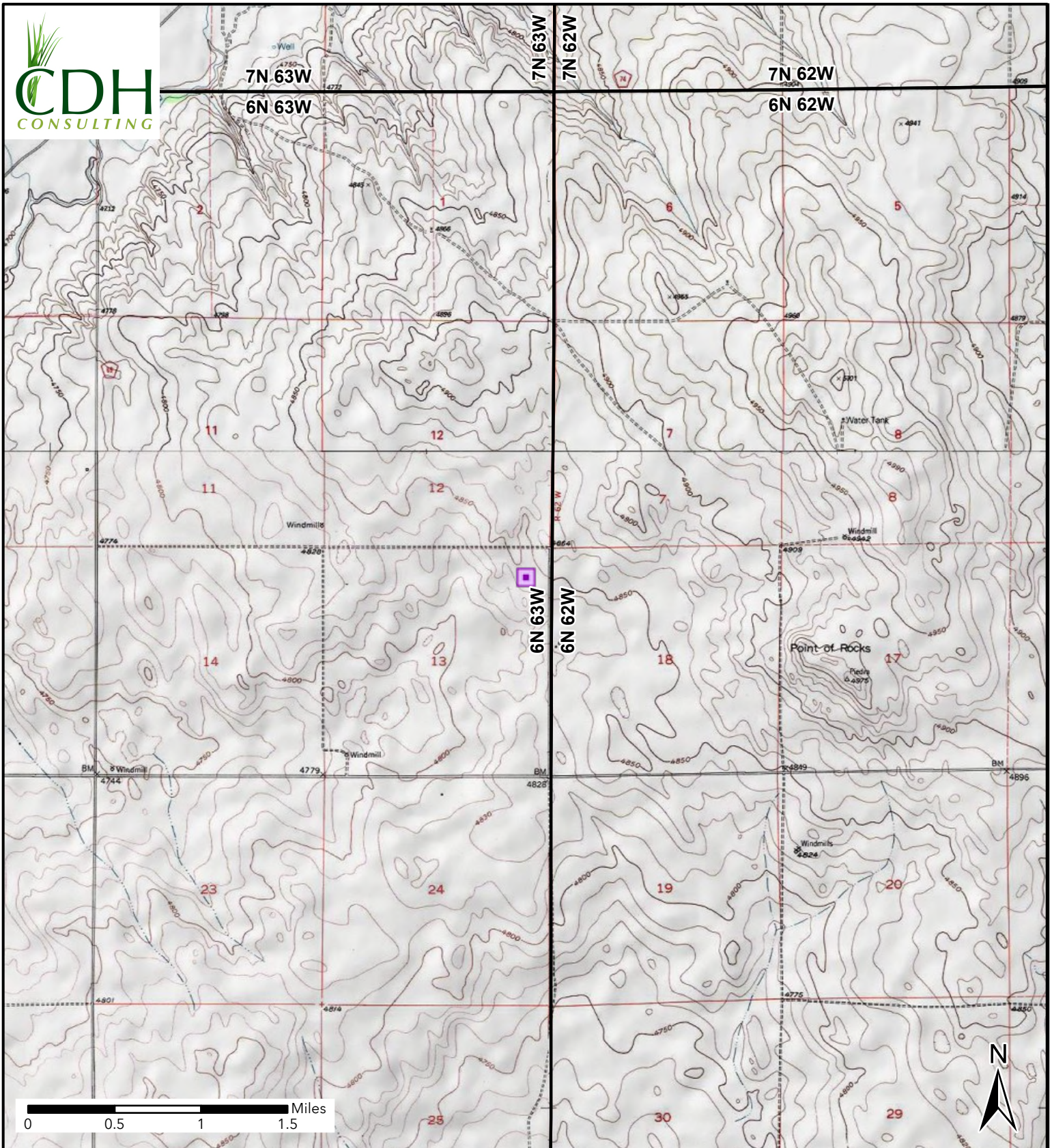
## **FIELD FORM**






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## FIGURES



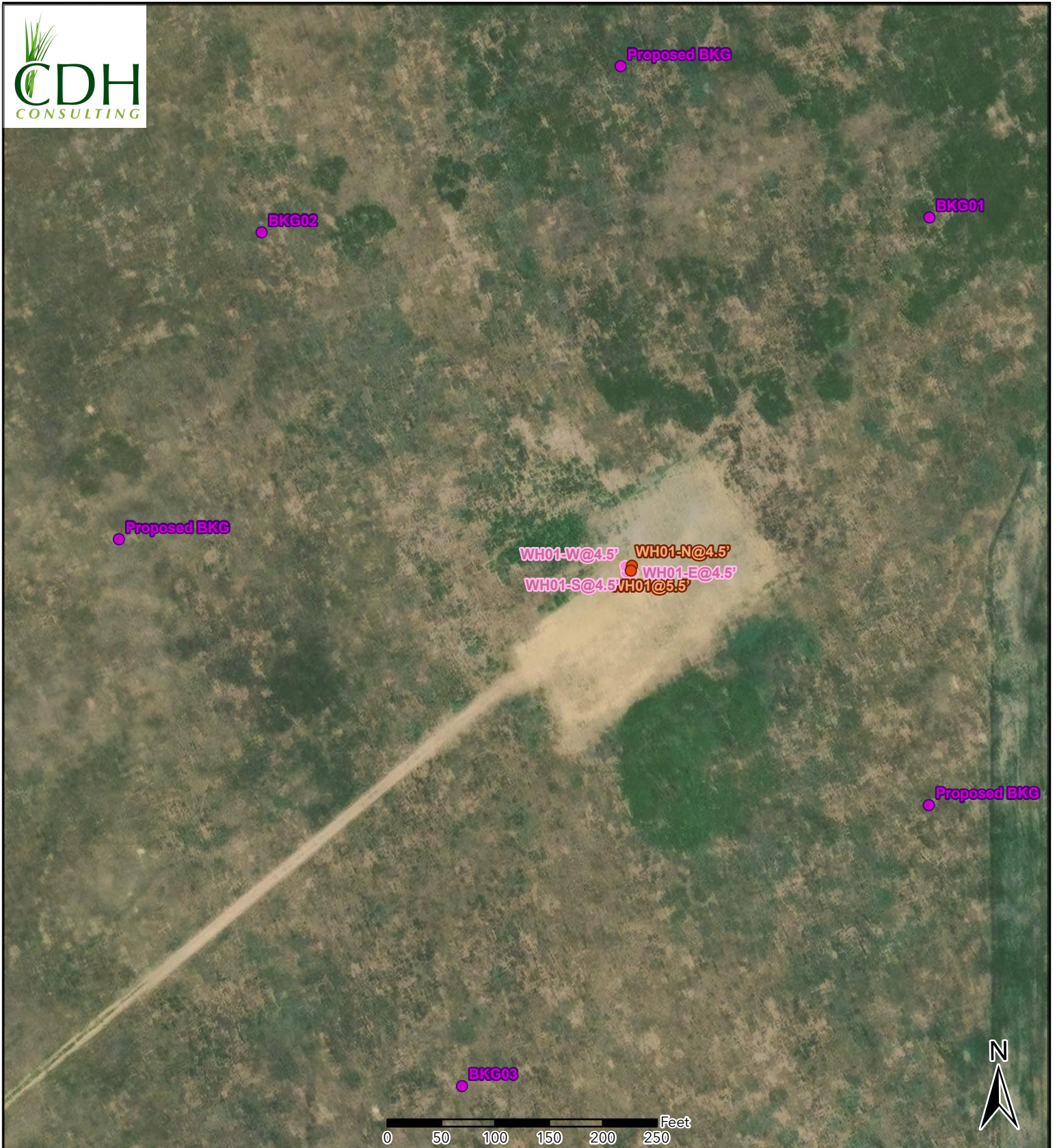
**Figure 1**  
**Site Location**  
**WELLS RANCH USX AA13-01**  
NENE SEC 13-T6N-R63W  
Weld County, Colorado  
Noble Energy Inc

 Site Location



**Figure 2**  
**Soil Sample and Field Screening Locations Map**  
**WELLS RANCH USX AA13-01**  
NENE-SEC 13-T6N-R63W  
Weld County, Colorado  
Noble Energy Inc.

- Soil Sample
- Background Sample
- Screening Point



**Figure 3**  
**Supplemental Site Investigation Map**  
**WELLS RANCH USX AA13-01**  
 NENE-SEC 13-T6N-R63W  
 Weld County, Colorado  
 Noble Energy Inc

- Soil Sample
- Background Sample
- Screening Point



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## **TABLES**

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**WELLS RANCH USX AA13-01, WELD COUNTY, COLORADO**  
**REM # 40473**

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
WH01@5.5'	8/18/2025	5.5	40.492005	-104.377368	1.300000	4.5
WH01-N@4.5'	8/18/2025	4.5	40.492015	-104.377365	1.500000	1.1
WH01-E@4.5'	8/18/2025	4.5	40.491998	-104.377362	1.100000	0.2
WH01-S@4.5'	8/18/2025	4.5	40.491991	-104.377378	1.100000	0.2
WH01-W@4.5'	8/18/2025	4.5	40.492014	-104.377387	1.100000	0.2
BKG01@5'	8/18/2025	5	40.492899	-104.376368	1.200000	0.2
BKG02@5'	8/18/2025	5	40.492882	-104.378595	1.100000	0.3
BKG03@5'	8/18/2025	5	40.490703	-104.377963	1.200000	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  
WELLS RANCH USX AA13-01, WELD COUNTY, COLORADO  
REM # 40473

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@5.5'	8/18/2025	5.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<132.611	<0.211	<26.4	<106
WH01-N@4.5'	8/18/2025	4.5	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<150.341	<0.241	<30.1	<120

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  
AP = Analysis pending  
NA = Not analyzed

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
WELLS RANCH USX AA13-01, WELD COUNTY, COLORADO  
REM # 40473

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@5.5'	8/18/2025	5.5	<0.021	<0.021	<0.005	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.021	<0.002	<0.002
WH01-N@4.5'	8/18/2025	4.5	<0.024	<0.024	<0.006	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024	<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

AP = Analysis pending

NA = Not analyzed

TABLE 4  
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION  
NOBLE 100322  
WELLS RANCH USX AA13-01, WELD COUNTY, COLORADO  
REM # 40473

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@5.5'	8/18/2025	5.5	7.66	1.19	0.966	0.235
WH01-N@4.5'	8/18/2025	4.5	7.96	1.20	0.682	0.419
BKG01@5'	8/18/2025	5	7.40	0.0498	0.184	<0.102
BKG02@5'	8/18/2025	5	8.10	0.184	0.258	0.245
BKG03@5'	8/18/2025	5	7.52	0.0676	0.189	<0.105
Maximum Background Concentration			8.10	0.184	0.258	0.245

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.

ft = Feet

EC = Electrical Conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

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

AP = Analysis pending

NA = Not analyzed

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE 100322  
WELLS RANCH USX AA13-01, WELD COUNTY, COLORADO  
REM # 40473

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@5.5'	8/18/2025	5.5	<b>2.79</b>	<79.7	<0.369	<0.22*	<44.7	<13.6	<25.3	<0.253	<0.778	<360
WH01-N@4.5'	8/18/2025	4.5	<b>4.11</b>	<75.5	<0.350	<0.26*	<42.4	<b>15.7</b>	<23.9	<0.239	<0.737	<341
BKG01@5'	8/18/2025	5	<b>2.69</b>	<72.7	<0.337	<0.21*	<40.8	<12.4	<23.0	<0.230	<0.709	<328
BKG02@5'	8/18/2025	5	<b>2.33</b>	<73.4	<0.340	<0.20*	<41.2	<12.5	<23.3	<0.233	<0.716	<331
BKG03@5'	8/18/2025	5	<b>2.52</b>	<77.7	<0.360	<0.21*	<43.6	<13.3	<24.6	<0.246	<0.758	<350
1.25x Maximum Background Concentration			3.36	NA	NA	NA	NA	NA	NA	NA	NA	NA

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
  2. **Red** 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.
- (<) = 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  
AP = Analysis pending  
NA = Not analyzed



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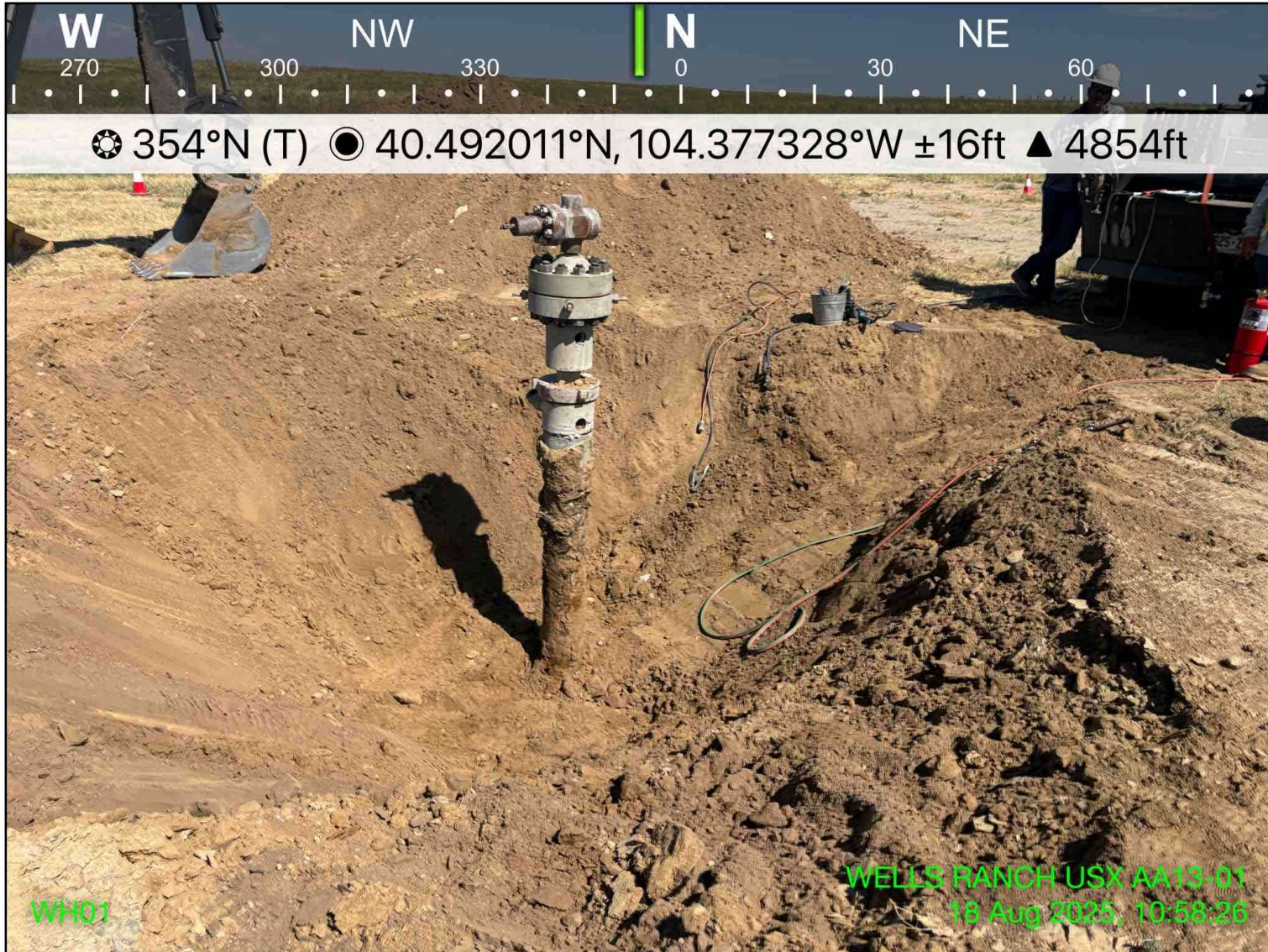
## **PHOTOGRAPHIC LOG**

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



**Photo 1:** View of WH01 sample location and excavation extent, facing west

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



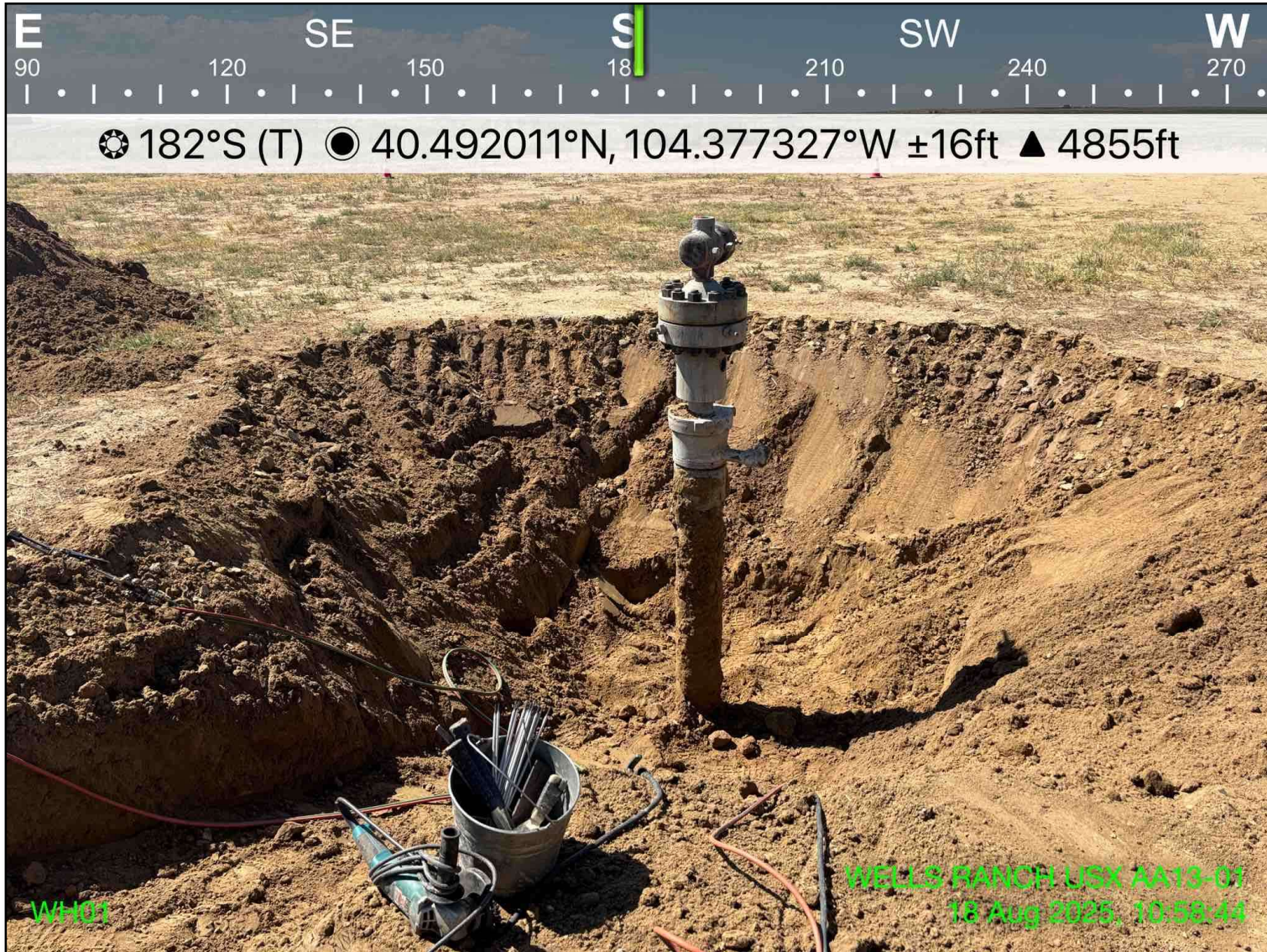
**Photo 2:** View of WH01 sample location and excavation extent, facing north

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



**Photo 3:** View of WH01 sample location and excavation extent, facing east

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



**Photo 4:** View of WH01 sample location and excavation extent, facing south

**Photographic Log**

WELLS RANCH USX AA13-01 – REM #40473

Noble Energy, Inc

8/18/2025



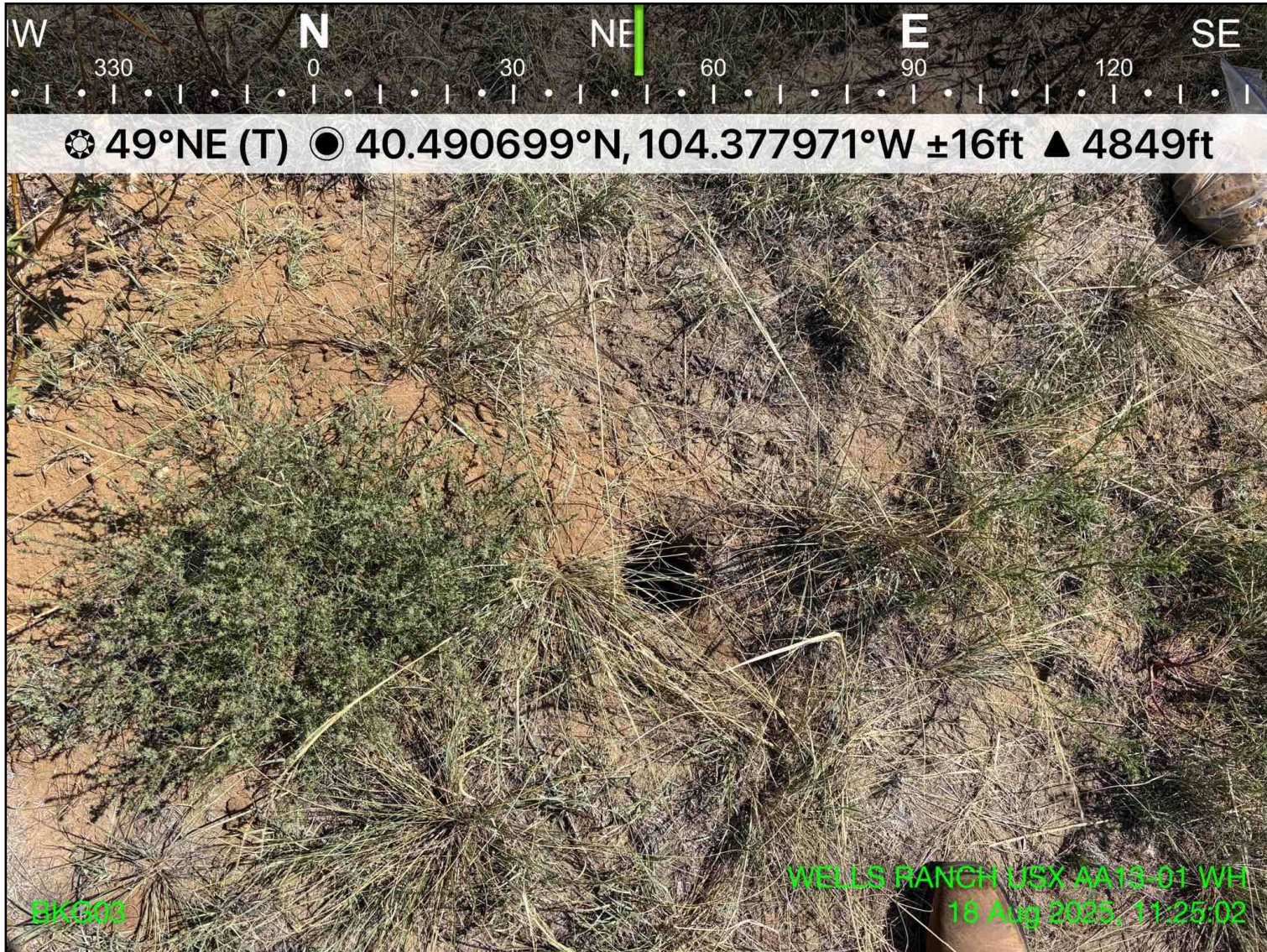
**Photo 5:** View of BKG01 sample location, facing southeast

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



**Photo 6:** View of BKG02 sample location, facing east-southeast

**Photographic Log**  
WELLS RANCH USX AA13-01 – REM #40473  
Noble Energy, Inc  
8/18/2025



**Photo 7:** View of BKG03 sample location, facing northeast



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## **WELLHEAD CLOSURE CHECKLIST**

## 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
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Site Name & COGCC Facility Number: WELLS RANCH USX AA13-01 / #299091	Date: 8/18/2025	Remediation Project #: 40473
Associated Wells: WELLS RANCH USX AA13-01	Age of Site: 5/22/2009 (Spud Date)	Number of Photos Attached: 7
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.492002/-104.377363		Estimated Facility Size (acres): 0.1

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

USCS Soil Type: Poorly Graded Sands (SP) Estimated Depth to Groundwater: Groundwater not encountered.

Hydrocarbon Impacted Soils / Spills : (Note estimated size and if impact appears to be surficial or extends to an unknown depth) Not encountered

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) Not encountered

#### Wellhead(s)

Well API	05-123-29247					
Age	5/22/2009 (Spud Date)					
Condition of surface around	Good					
PID Readings	0.2-4.5 ppm					
Condition of subsurface (staining)	Good					
PID Readings	0.2-4.5 ppm					
Sample taken? Location/Sample ID#	See attached					
Photo Number(s)	See attached					

Other observations regarding wellheads: Flowline riser not present.

#### 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: 2

Highest PID Reading: 4.5 Total number of samples submitted to lab for analysis: 2

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? Yes **No**

Date Groundwater was encountered: Commencement date of removal:

Sheen on groundwater? Yes **No** Volume of groundwater removed prior to sampling:

Free product observed? Yes **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: