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:	*Date:*	*Remediation Project #:*
Born-Sitzman #1	05/09/23	27857
Associated Wells: 05-123-11308	*Age of Site:* Years	*Number of Photos Attached:* 1
Location: *(GPS coordinates of wellhead or southeastern most wellhead for multiple)* 40.289050 / -104.529660		*Estimated Facility Size (acres):*

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

Good Condition

USCS Soil Type: Silty SAND	*Estimated Depth to Groundwater:* Approx. 10-15'

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

None observed.

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

None observed.

Wellhead(s)

Well API	05-123-11308					
Age	Years					
Condition of surface around wellhead	Good - Per Crew					
PID Readings	N/A - Excavated Upon Arrival					
Condition of subsurface (staining present	Good - No Odor/Staining					
PID Readings	2.8	2.5	1.6	1.7	3.1	
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01	
Photo Number(s)	See photolog					

Other observations regarding wellheads:

Well casing cut/capped following assessment.

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: 3.1	*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:*

N/A

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:	

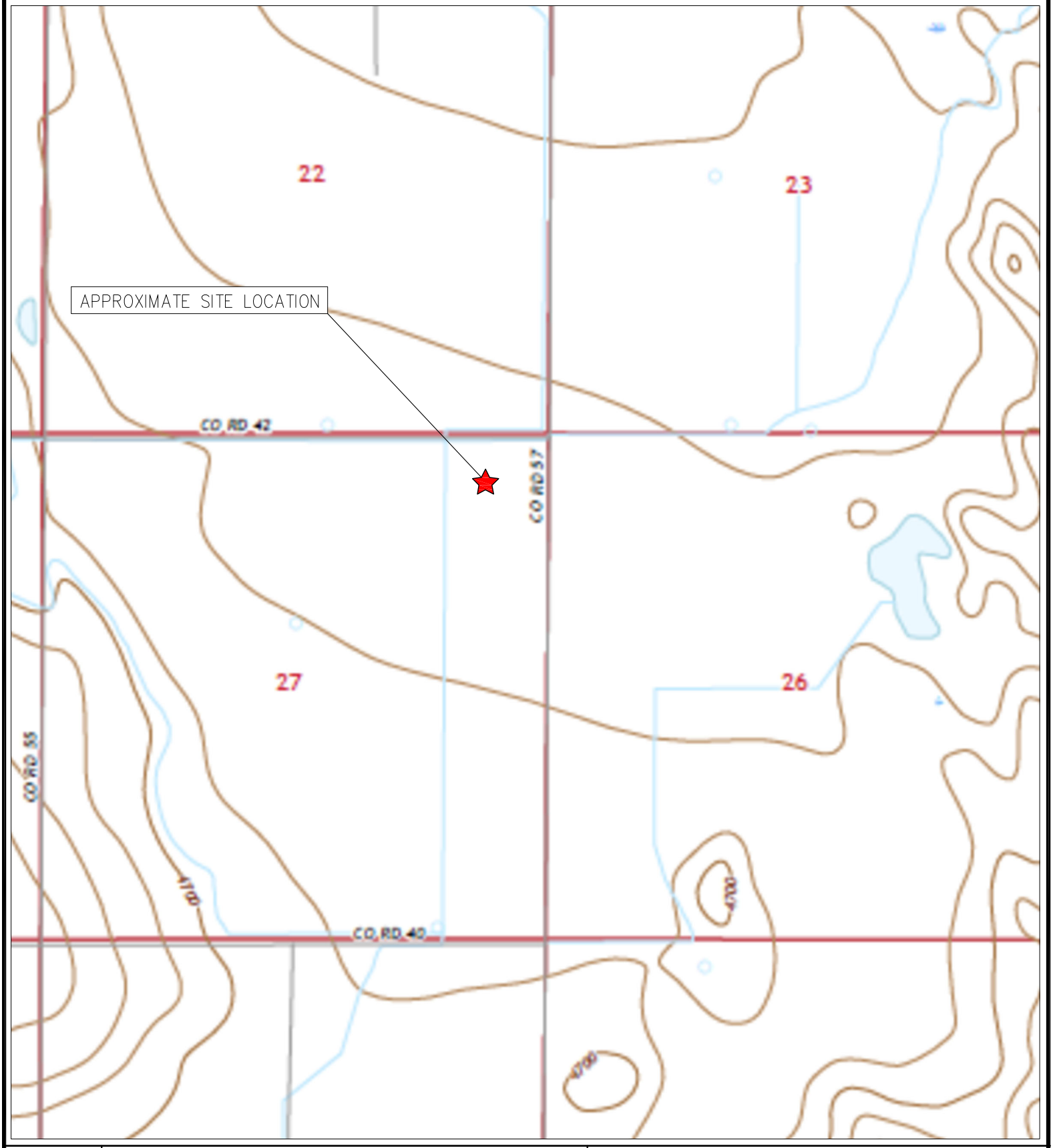
N/A

FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map



TOPOGRAPHIC SITE LOCATION MAP
BORN–SITZMAN #1
CLOSURE ASSESSMENT
40.289050 / –104.529660
NE¼ NE¼ SEC.27 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05–123–11308
REMEDIATION # 27857

N

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
VALLEY VIEW SCHOOL, CO QUADRANGLE 2022

FIGURE NO. 1

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LEGEND

- FORMER BORN–SITZMAN #1 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION

0 N 120'

APPROXIMATE SCALE IN FEET

AERIAL SITE LOCATION MAP
BORN–SITZMAN #1
CLOSURE ASSESSMENT
40.289050 / –104.529660
NE¼ NE¼ SEC.27 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05–123–11308
REMEDIATION # 27857

FIGURE NO.
2

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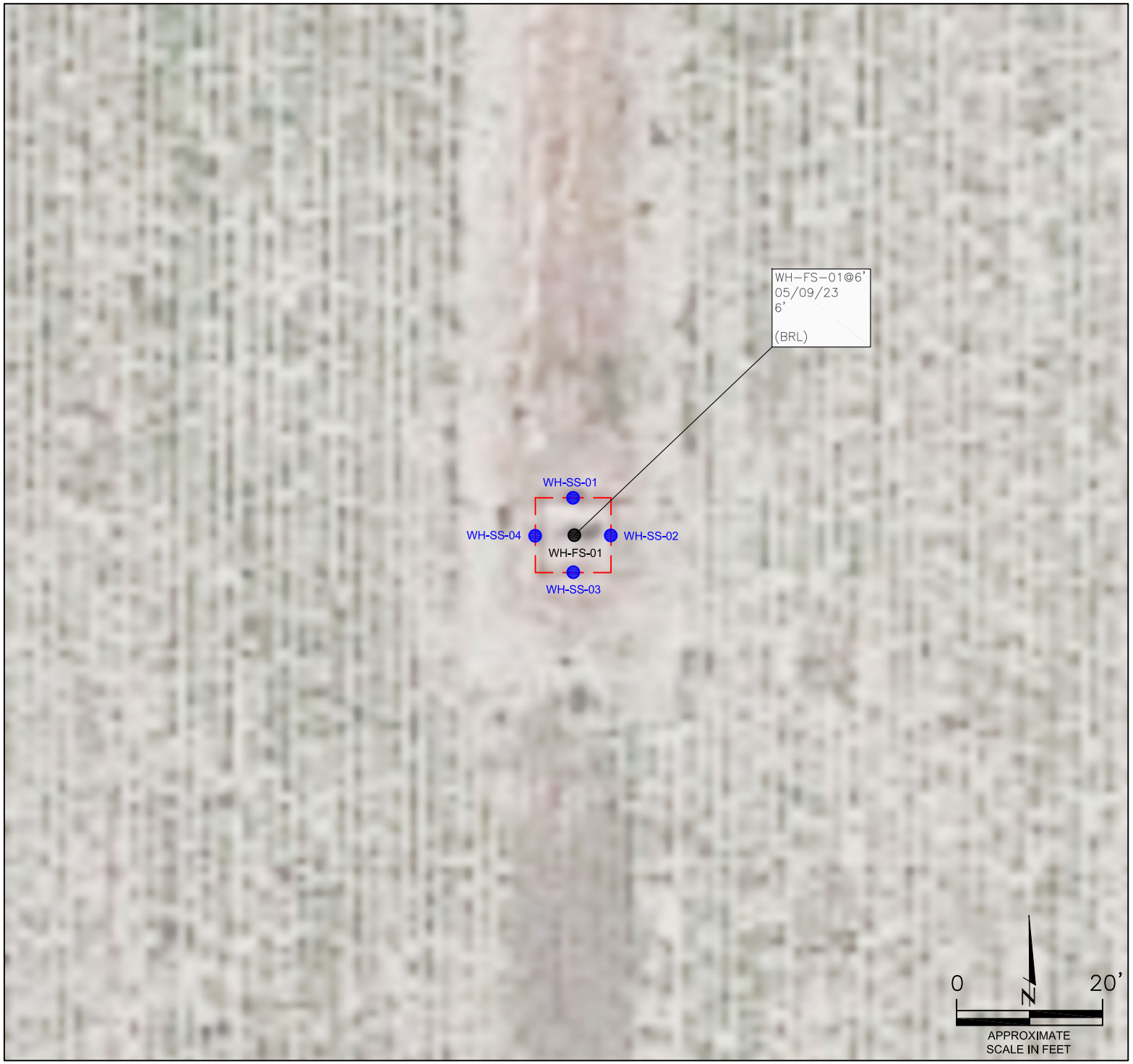

LEGEND

WELLHEAD ASSESSMENT BOUNDARIES

SS-02 — APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR

SS-02 — APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)
R = TPH-RRO (mg/kg)
1,2,4-TMB = 1,2,4 TRIMETHLYBENZENE (mg/kg)
1,3,5-TMB = 1,3,5 TRIMETHLYBENZENE (mg/kg)
Brn= BORON (mg/L)
EC = SPECIFIC CONDUCTANCE (mmhos/cm)
SAR= SODIUM ADSORPTION RATIO
pH = pH (pH UNITS)
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM
mg/L = MILLIGRAMS PER LITER
mmhos/cm = MILLIMHOS PER CENTIMETER

(BRL) = ALL VALUES BELOW REGULATORY LIMITS

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS – GASOLINE RANGE ORGANICS
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS – DIESEL RANGE ORGANICS
TPH-RRO = TOTAL PETROLEUM HYDROCARBONS – RESIDUAL RANGE ORGANICS

NOTES:
VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SOIL ANALYTICAL MAP
BORN-SITZMAN #1
CLOSURE ASSESSMENT
40.289050 / -104.529660
NE¼ NE¼ SEC.27 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-11308
REMEDIATION # 27857

FIGURE NO. 3

DRAWN BY: GF

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TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
BORN-SITZMAN #1
CLOSURE ASSESSMENT
40.289050 / -104.529660
NE¼ NE¼ SEC.27 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-11308
REMEDIATION # 27857

Sample Location (Latitude/Longitude)	**Date**	**Approximate Depth** (feet)	**PID Reading** (ppm-v)	**Lab Submission** (Y/N)
WH-SS-01 @ 5' (40.289071 / -104.529668)	05/09/23	5	2.8	N
WH-SS-02 @ 5' (40.289060 / -104.529652)	05/09/23	5	2.5	N
WH-SS-03 @ 5' (40.289047 / -104.529666)	05/09/23	5	1.6	N
WH-SS-04 @ 5' (40.289058 / -104.529686)	05/09/23	5	1.7	N
WH-FS-01 @ 6' (40.289059 / -104.529669)	05/09/23	6	3.1	Y

(Y/N) = Yes or No
ppm-v = parts per million by volume
PID = Photoionization Detector

EAGLE ENVIRONMENTAL CONSULTING, LLC

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
BORN-SITZMAN #1
CLOSURE ASSESSMENT
40.289050 / -104.529660
NE¼ NE¼ SEC.27 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-11308
REMEDIATION # 27857

Sample Location				WH-FS-01 @ 6'
(Latitude / Longitude)				(40.289059 / -104.529669)
Sample Date				5/9/2023
Sample Depth				6'
PID Reading (ppm-v)				3.1
		Regulatory Limits		
Chemical of Concern	**Units**	**ECMC Table 915-1 RSSLs**	**ECMC Table 915-1 GSSLs**	
VOCs				
Benzene	mg/kg	1.2	0.0026	<0.00200
Toluene	mg/kg	490	0.69	<0.00200
Ethylbenzene	mg/kg	5.8	0.78	<0.00200
Total Xylenes	mg/kg	58	9.9	<0.00200
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	<0.00200
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	<0.00200
TOTAL PETROLEUM HYDROCARBONS				
TPH-GRO	mg/kg	500	--	<0.200
TPH-DRO	mg/kg	500	--	<25.0
TPH-RRO	mg/kg	500	--	<100
POLYCYCLIC AROMATIC HYDROCARBONS				
1-Methyl-naphthalene	mg/kg	18	0.006	<0.00201
2-Methyl-naphthalene	mg/kg	24	0.019	<0.00201
Acenaphthene	mg/kg	360	0.55	<0.00067
Anthracene	mg/kg	1800	5.8	<0.00067
Benzo(a)-anthracene	mg/kg	1.1	0.011	<0.00067
Benzo(a)-pyrene	mg/kg	0.11	0.24	<0.00067
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	<0.00067
Benzo(k)-fluoranthene	mg/kg	11	2.9	<0.00067
Chrysene	mg/kg	110	9	<0.00067
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00067
Fluoranthene	mg/kg	240	8.9	<0.00067
Fluorene	mg/kg	240	0.54	<0.00067
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00067
Naphthalene	mg/kg	2	0.0038	<0.00201
Pyrene	mg/kg	180	1.3	<0.00067
SOIL SUITABILITY (Inorganics)				
Boron	mg/L	2	--	0.351
pH	standard unit	6-8.3	--	7.97
Sodium Adsorption Ratio (SAR)	--	<6	--	2.55
Specific Conductance (EC)	mmhos/cm	<4	--	1.06

ECMC = Energy & Carbon Management Commission
mg/kg = milligrams per kilogram
mmhos/cm = millimhos per centimeter
PID = Photoionization Detector
ppm-v = parts per million by volume
mg/L = milligrams per liter
SAR = Sodium Adsoption Ratio

VOCs - Volatile Organic Compounds
RSSLs = Residential Soil Screening Levels
GSSLs = Protection of Groundwater Soil Screening Levels
TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics
TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics
TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics

Notes:
Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit.
Values presented in **BOLD** exceed ECMC Table 915-1 Regulatory Limits.

EAGLE ENVIRONMENTAL CONSULTING, LLC

ATTACHMENT A

Photo Log

Born-Sitzman #1

API # 05-123-11308

Remediation # 27857

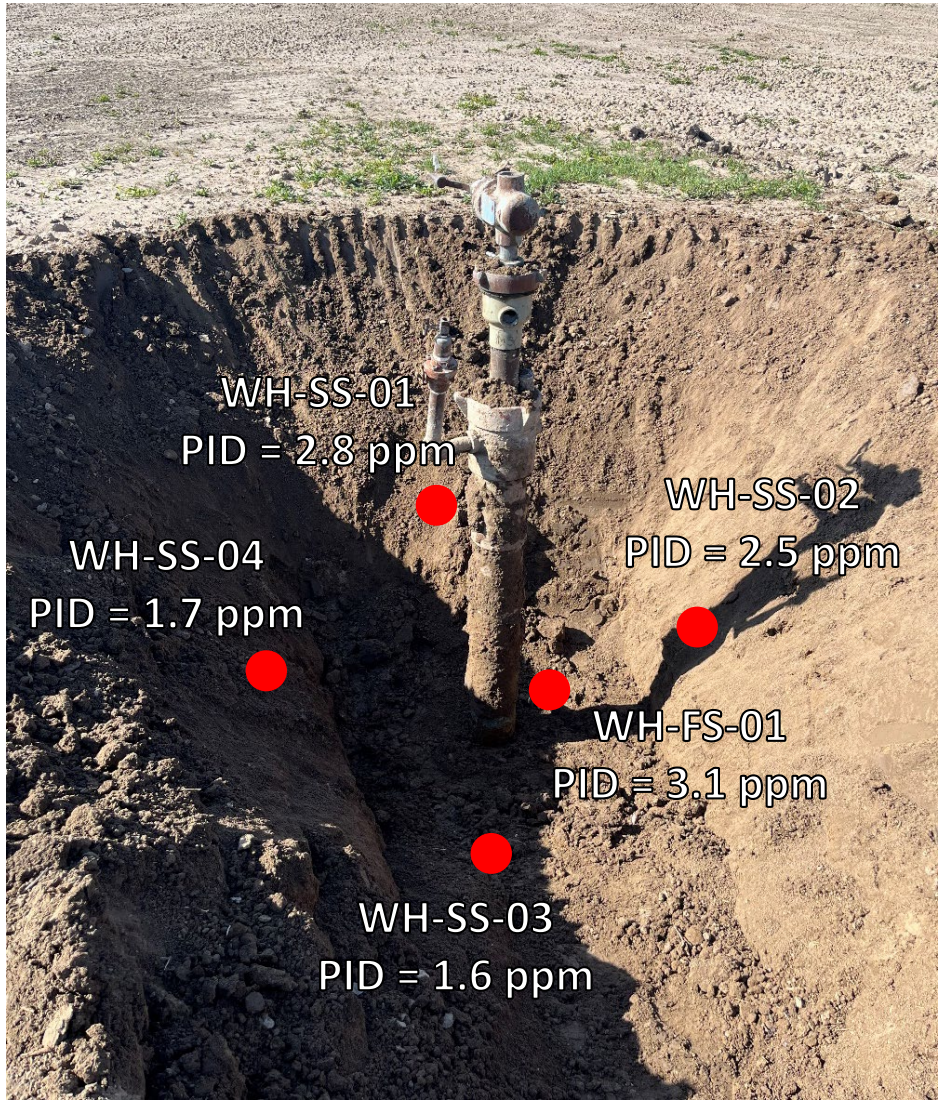
Closure Assessment

May 2023

EAGLE ENVIRONMENTAL CONSULTING, LLC

noble energy

Wellhead Excavation – 05/09/23



Looking north

No petroleum hydrocarbon staining or odor observed