

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: Farr C #18-25		Date: 9-26-22						Remediation Project #: 24172
Associated Wells: 05-123-23727		Age of Site: years						Number of Photos Attached: 2
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.308680 / -104.597350							Estimated Facility Size (acres):	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) <div style="text-align: center; font-size: 1.2em;">Good condition</div>								
USCS Soil Type: CL				Estimated Depth to Groundwater: ~10-15'				
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <div style="text-align: center; font-size: 1.2em;">None observed</div>								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) <div style="text-align: center; font-size: 1.2em;">None observed</div>								
Wellhead(s)								
Well API	05-123-23727							
Age	years							
Condition of surface around wellhead	Good-Per Crew							
PID Readings	N/A-Excavated upon arrival							
Condition of subsurface	Good-no staining/no odor							
PID Readings	7.3	10.6	10.9	11.3	12.3			
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: <div style="text-align: center; font-size: 1.2em;">Well casing cut/capped following assessment</div>								
Summary								
Was impacted soil identified? <div style="display: flex; justify-content: space-between;"> <input checked="" type="radio"/> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards </div>								
Total number of samples field screened: 5				Total number of samples collected: 5				
Highest PID Reading: 12.3				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? <div style="text-align: center; font-size: 1.5em;">N/A</div>								
Was groundwater encountered during the investigation? <div style="display: flex; justify-content: space-between;"> <input checked="" type="radio"/> No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils </div>								
Measured depth to groundwater:				Was remedial groundwater removal conducted? Yes No				
Date Groundwater was encountered:				Commencement date of removal:				
Seen 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:								



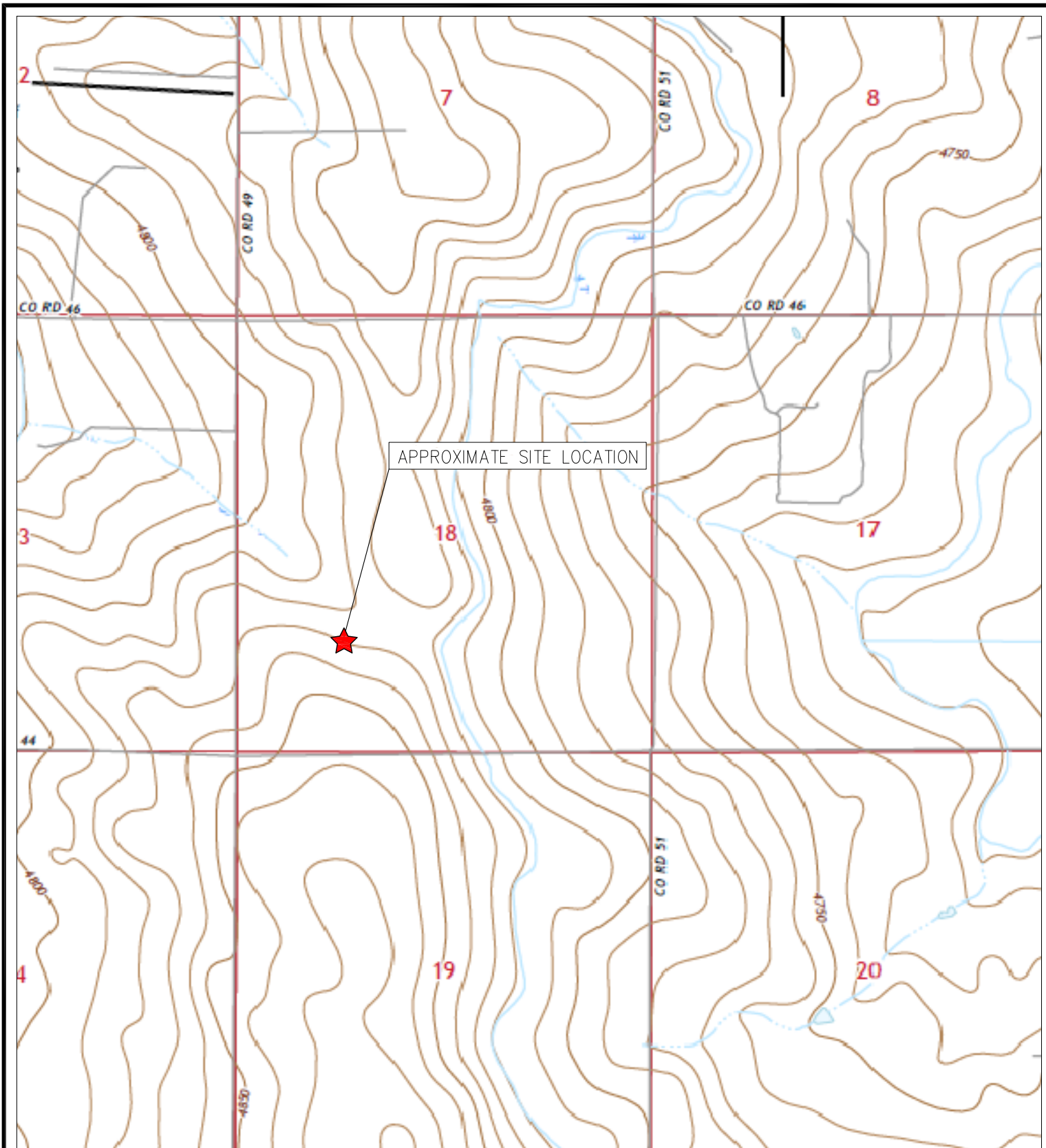
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Analytical Map

Figure 4: Polycyclic Aromatic Hydrocarbons Map



TOPOGRAPHIC SITE LOCATION MAP
 FARR C #18-25
 CLOSURE ASSESSMENT
 40.308680 / -104.597350
 NE¼ SW¼ SEC.18 T4N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-23727
 REMEDIATION # 24172



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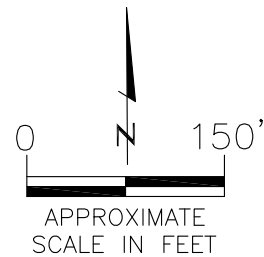
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
 VALLEY VIEW SCHOOL, CO QUADRANGLE 2022

FIGURE NO. 1



LEGEND

- FORMER FARR C #18-25 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP

FARR C #18-25
CLOSURE ASSESSMENT
40.308680 / -104.597350
NE¼ SW¼ SEC.18 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-23727
REMEDATION # 24172

FIGURE NO.
2

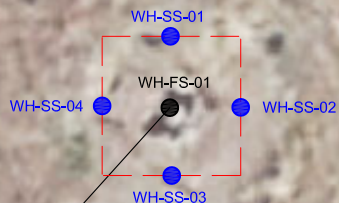
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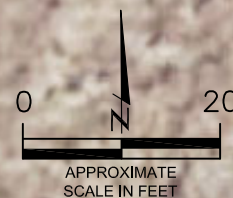
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BACKGROUND-01@2'
09/26/22
2'
B = NA
T = NA
E = NA
X = NA
G = NA
D = NA
R = NA
1,2,4-TMB = NA
1,3,5-TMB = NA
Brn= NA
EC = NA
SAR= NA
pH = 8.08

BACKGROUND-01



WH-FS-01@6'
09/26/22
6'
B = <0.00200
T = <0.00200
E = <0.00200
X = <0.00200
G = <0.200
D = <25.0
R = <100
1,2,4-TMB = <0.00200
1,3,5-TMB = <0.00200
Brn= 0.351
EC = 0.548
SAR= 2.55
pH = **8.52**



LEGEND

- INITIAL ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- 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 TRIMETHYLBENZENE (mg/kg)
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)
Brn= BORON (mg/L)
EC = SPECIFIC CONDUCTANCE (mmhos/cm)
SAR= SODIUM ADSORPTION RATIO
pH = pH (pH UNITS)

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

NA = NOT ANALYZED

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 LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

SOIL ANALYTICAL MAP

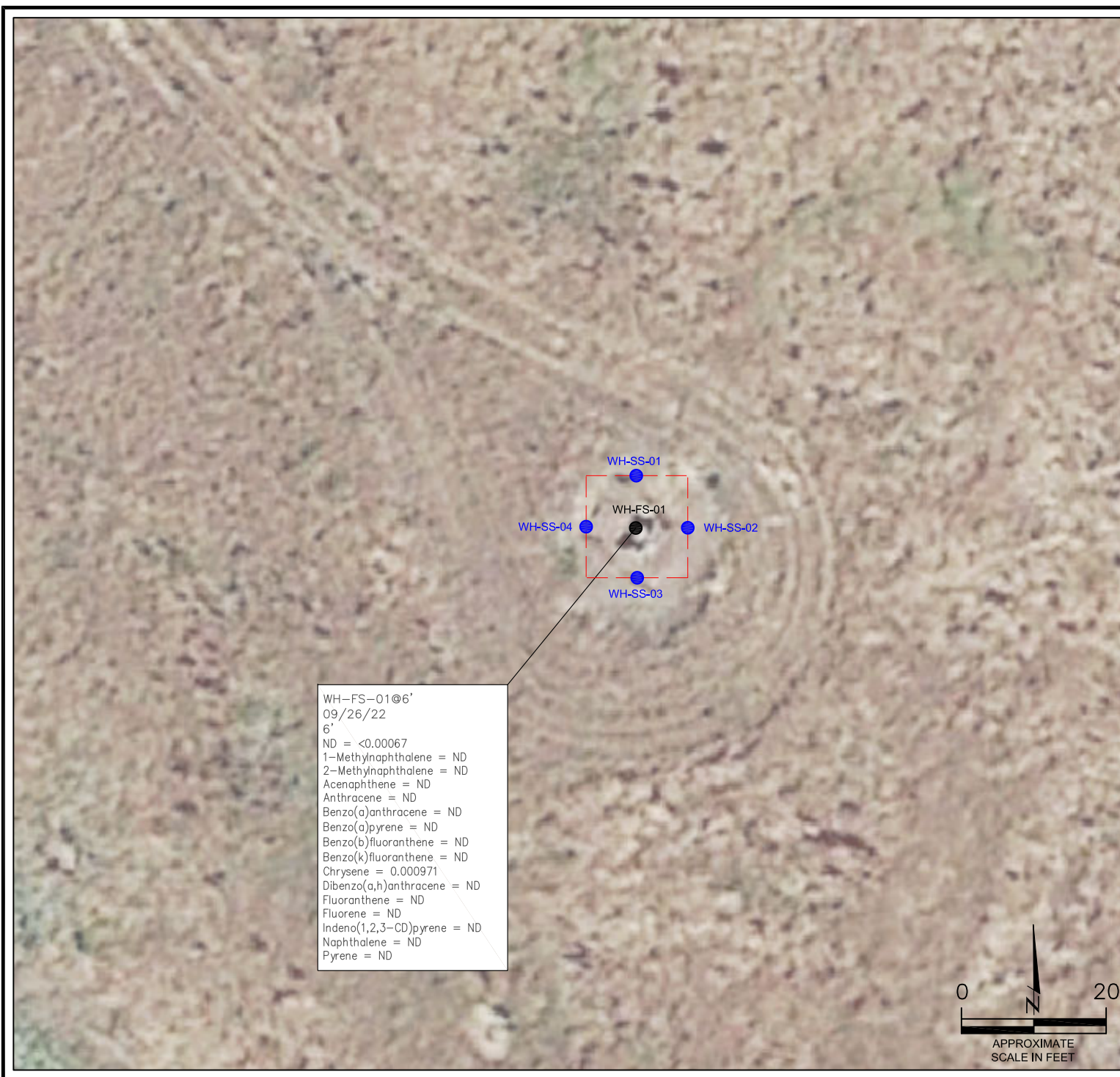
FARR C #18-25
CLOSURE ASSESSMENT
40.308680 / -104.597350
NE¼ SW¼ SEC.18 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-23727
REMEDATION # 24172

FIGURE NO.
3

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WH-FS-01@6'
09/26/22
6'
ND = <0.00067
1-Methylnaphthalene = ND
2-Methylnaphthalene = ND
Acenaphthene = ND
Anthracene = ND
Benzo(a)anthracene = ND
Benzo(a)pyrene = ND
Benzo(b)fluoranthene = ND
Benzo(k)fluoranthene = ND
Chrysene = 0.000971
Dibenzo(a,h)anthracene = ND
Fluoranthene = ND
Fluorene = ND
Indeno(1,2,3-CD)pyrene = ND
Naphthalene = ND
Pyrene = ND

LEGEND

- INITIAL ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SAMPLE LOCATION
DATE SAMPLE COLLECTED
APPROXIMATE DEPTH

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)

NOTE:
CONCENTRATIONS PRESENTED IN mg/kg

mg/kg = MILLIGRAMS PER KILOGRAM

ND = NON-DETECT

NOTE:
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

POLYCYCLIC AROMATIC HYDROCARBONS MAP

FARR C #18-25
CLOSURE ASSESSMENT
40.308680 / -104.597350
NE¼ SW¼ SEC.18 T4N R64W 6PM
WELD COUNTY, COLORADO
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REMEDIAL # 24172

FIGURE NO.
4

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TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
FARR C #18-25
CLOSURE ASSESSMENT
40.308680 / -104.597350
NE1/4 SW1/4 SEC.18 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-23727
REMEDIATION # 24172

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-SS-01 @ 5' (40.308706 / -104.597371)	09/26/22	5	7.3	N
WH-SS-02 @ 5' (40.308685 / -104.597340)	09/26/22	5	10.6	N
WH-SS-03 @ 5' (40.308665 / -104.597368)	09/26/22	5	10.9	N
WH-SS-04 @ 5' (40.308684 / -104.597394)	09/26/22	5	11.3	N
WH-FS-01 @ 6' (40.308687 / -104.597371)	09/26/22	6	12.3	Y
Background-01 @ 2' (40.308725 / -104.597477)	09/26/22	2	6.0	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS
FARR C #18-25
CLOSURE ASSESSMENT
40.308680 / -104.597350
NE1/4 SW1/4 SEC.18 T4N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-23727
REMEDATION # 24172

Sample Location				WH-FS-01 @ 6'	Background-01 @ 2'
(Latitude / Longitude)				(40.308687 / -104.597371)	(40.308725 / -104.597477)
Sample Date				9/26/2022	9/26/2022
Sample Depth				6'	2'
PID Reading (ppm-v)				12.3	6.0
Regulatory Limits					
Chemical of Concern	Units	COGCC Table 915-1 RSSLs	COGCC Table 915-1 GSSLs	Local Clean-Up Level	
VOCs					
Benzene	mg/kg	1.2	0.0026	<0.00200	NA
Toluene	mg/kg	490	0.69	<0.00200	NA
Ethylbenzene	mg/kg	5.8	0.78	<0.00200	NA
Total Xylenes	mg/kg	58	9.9	<0.00200	NA
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	<0.00200	NA
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	<0.00200	NA
TOTAL PETROLEUM HYDROCARBONS					
TPH-GRO	mg/kg	500	--	<0.200	NA
TPH-DRO	mg/kg	500	--	<25.0	NA
TPH-RRO	mg/kg	500	--	<100	NA
POLYCYCLIC AROMATIC HYDROCARBONS					
1-Methyl-naphthalene	mg/kg	18	0.006	<0.00067	NA
2-Methyl-naphthalene	mg/kg	24	0.019	<0.00067	NA
Acenaphthene	mg/kg	360	0.55	<0.00067	NA
Anthracene	mg/kg	1800	5.8	<0.00067	NA
Benzo(a)-anthracene	mg/kg	1.1	0.011	<0.00067	NA
Benzo(a)-pyrene	mg/kg	0.11	0.24	<0.00067	NA
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	<0.00067	NA
Benzo(k)-fluoranthene	mg/kg	11	2.9	<0.00067	NA
Chrysene	mg/kg	110	9	0.000971	NA
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	<0.00067	NA
Fluoranthene	mg/kg	240	8.9	<0.00067	NA
Fluorene	mg/kg	240	0.54	<0.00067	NA
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	<0.00067	NA
Naphthalene	mg/kg	2	0.0038	<0.00067	NA
Pyrene	mg/kg	180	1.3	<0.00067	NA
SOIL SUITABILITY (Inorganics)					
Boron	mg/L	2	--	0.351	NA
pH	standard unit	6-8.3	--	8.52	8.08
Sodium Adsorption Ratio (SAR)	--	<6	--	2.55	NA
Specific Conductance (EC)	mmhos/cm	<4	--	0.548	NA
COGCC = Colorado Oil and Gas Conservation Commission NA - Not Analyzed VOCs - Volatile Organic Compounds mg/kg = milligrams per kilogram mmhos/cm = millimhos per centimeter RSSLs = Residential Soil Screening Levels PID = Photoionization Detector GSSLs = Protection of Groundwater Soil Screening Levels ppm-v = parts per million by volume TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics mg/L = milligrams per liter TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics SAR = Sodium Adsorption Ratio 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 COGCC Table 915-1 Regulatory Limits.					



ATTACHMENT A

Photo Log

Farr C #18-25
API # 05-123-23727
Remediation # 24172

Closure Assessment

September 2022

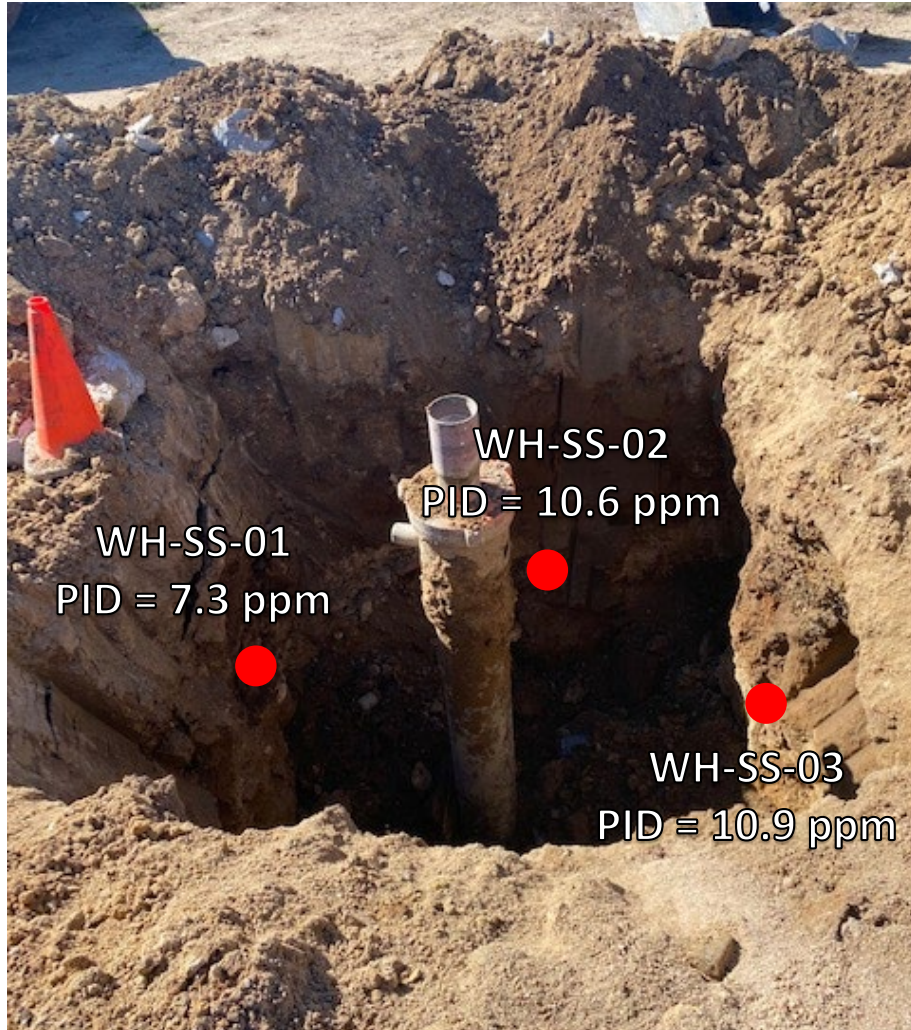


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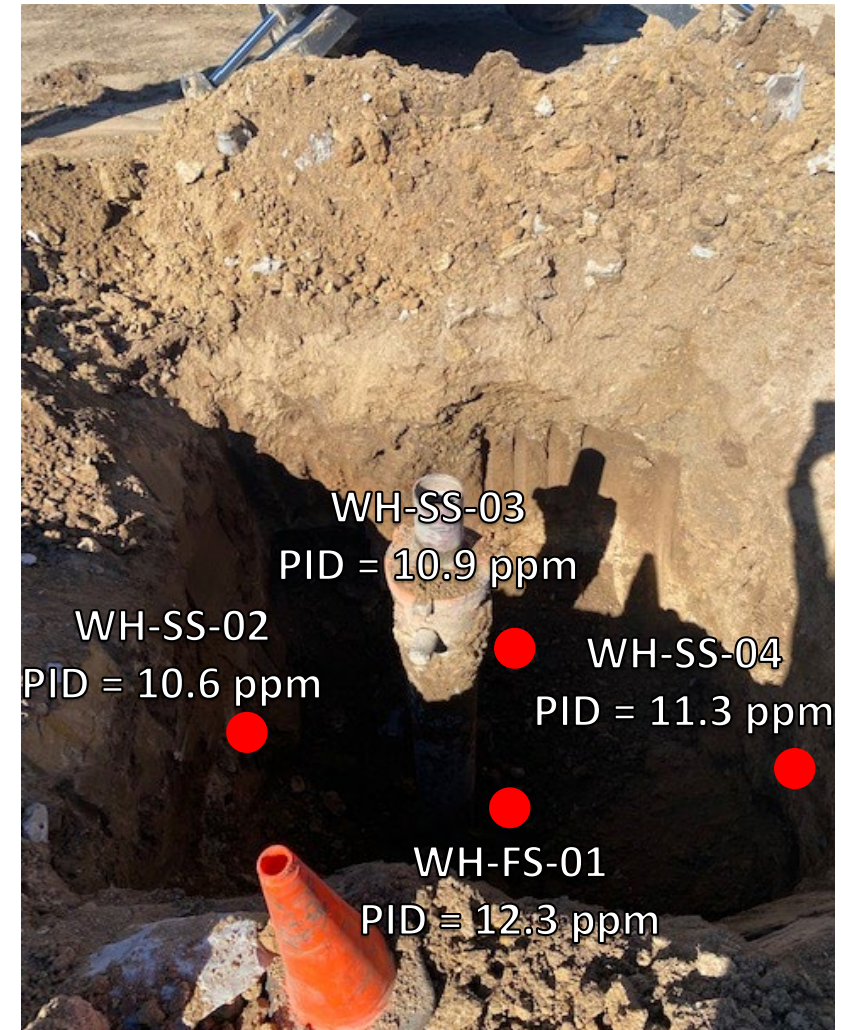


Wellhead Excavation – 09/26/22



Looking east

No petroleum hydrocarbon staining or odor observed



Looking south

No petroleum hydrocarbon staining or odor observed