

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: Gibson # 11-9		Date: 2-23-24					Remediation Project #: 31628	
Associated Wells: 05-123-23102		Age of Site: years					Number of photos Attached: 6	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)						40.506190 / -104.448170		Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good condition								
USCS Soil Type: SC				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) 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	05-123-23102							
Age	years							
Condition of surface around wellhead	Good - No odor/no staining							
PID Readings	WH-N: 0.8	WH-E: 0.8	WH-S: 1.1	WH-W: 1.0				
Condition of subsurface (staining present)	Good - No odor/no staining							
PID Readings	2.0	2.7	1.9	1.2	1.9			
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01			
Photo Number(s)	See photo log							
Other observations regarding wellheads: Well casing cut/capped following assessment								
Summary								
Was impacted soil identified? <input checked="" type="radio"/> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: 9				Total number of samples collected: 9				
Highest PID Reading: 2.7				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? <input checked="" type="radio"/> 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:								



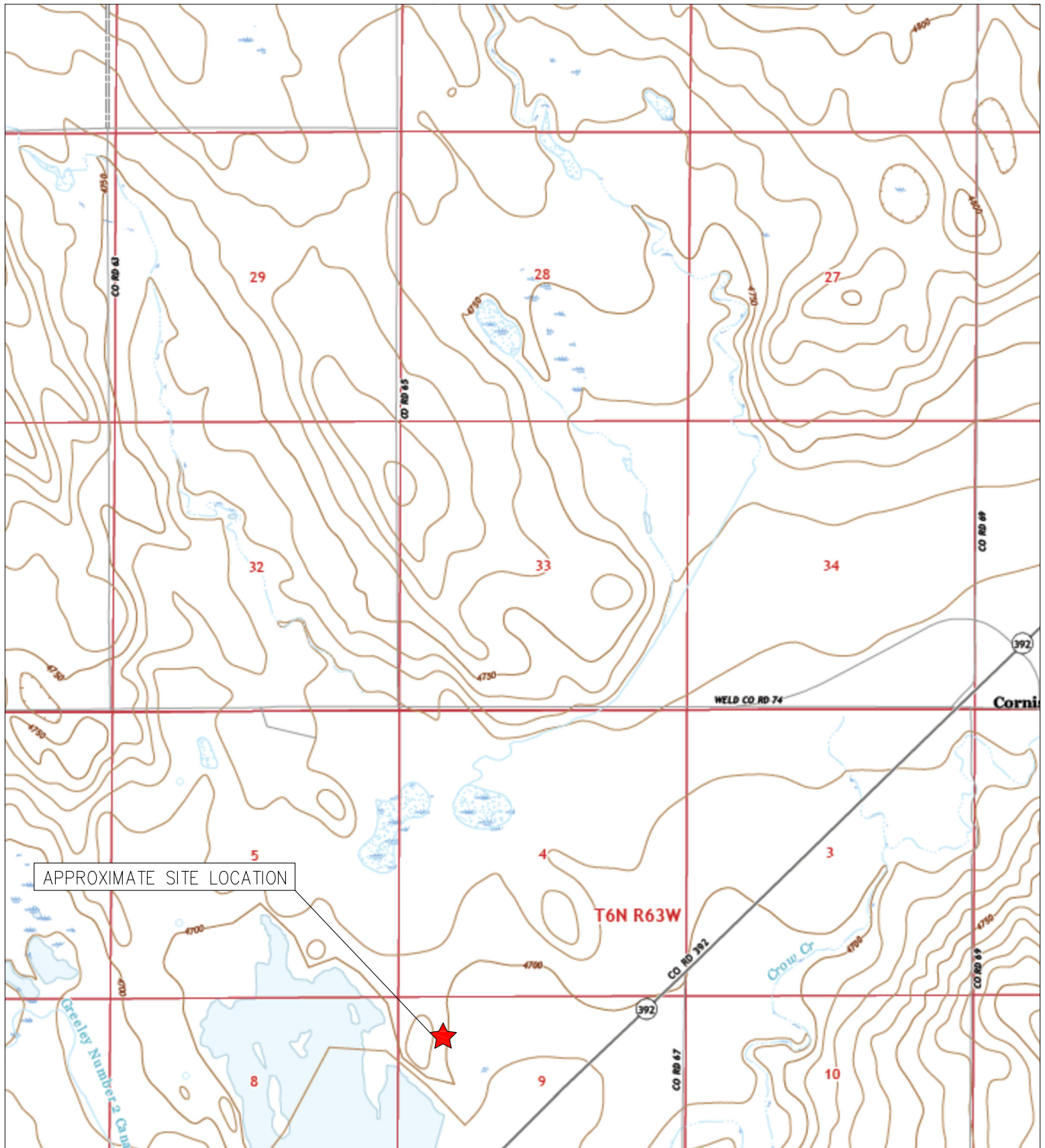
FIGURES

Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Sampling Location Map

Figure 4: Soil Analytical Map



APPROXIMATE SITE LOCATION

T6N R63W



TOPOGRAPHIC SITE LOCATION MAP
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

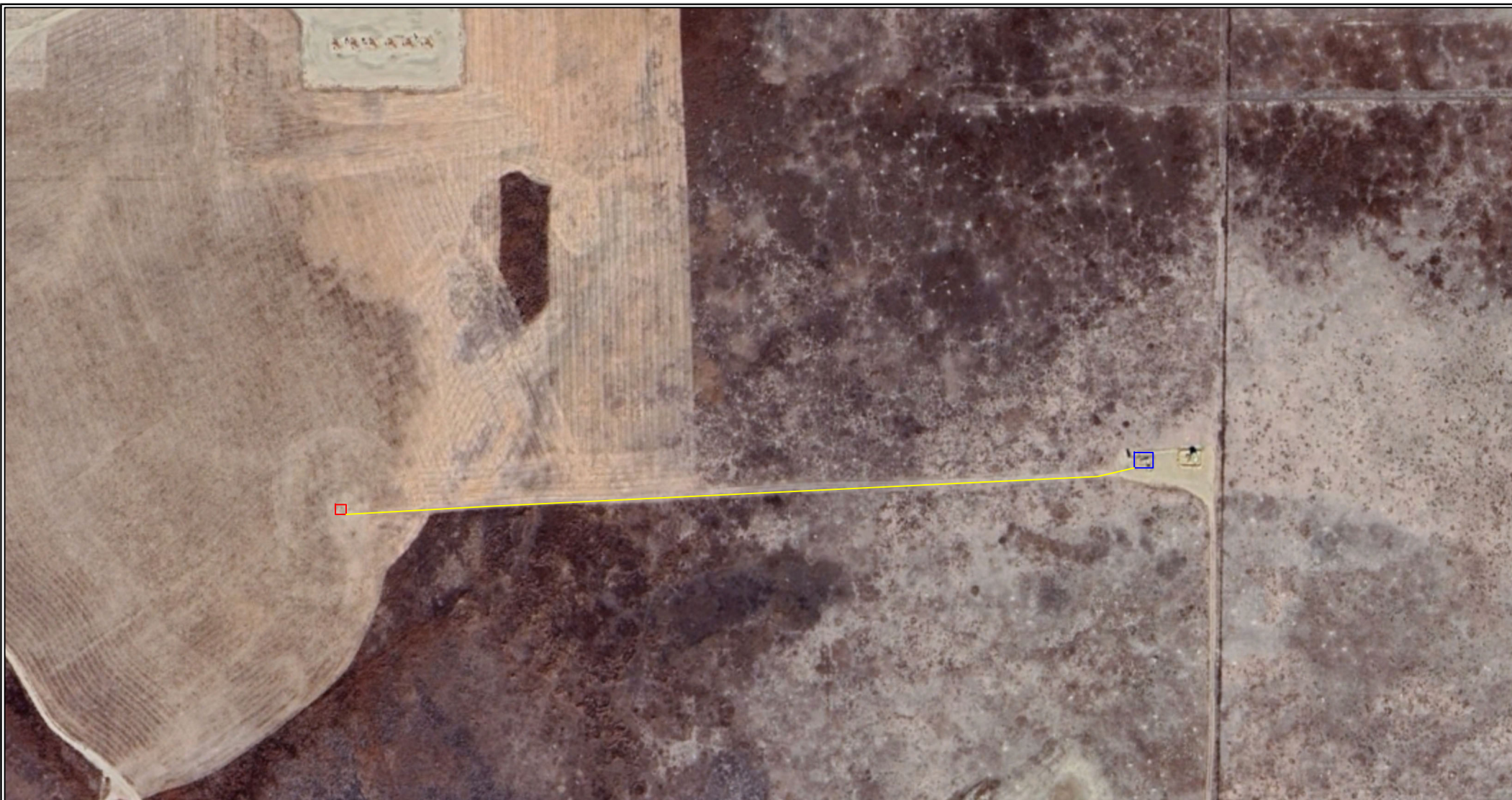


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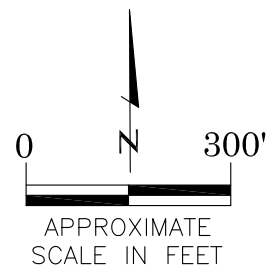
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP,
CORNISH, CO QUADRANGLE 2022

FIGURE NO. 1



LEGEND

- FORMER GIBSON #11-9 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



AERIAL SITE LOCATION MAP

GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

FIGURE NO.
2

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LEGEND

- INITIAL 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)
N = NAPHTHALENE (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)
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

SAMPLE LOCATION MAP

GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW1/4 NW1/4 Sec.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

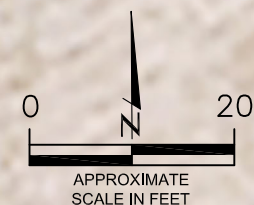
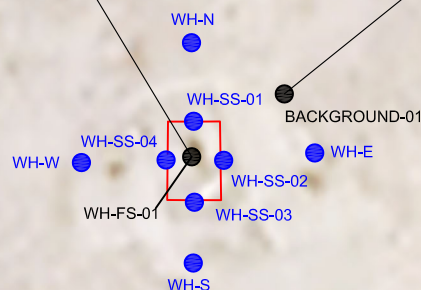
FIGURE NO.
3

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WH-FS-01@7'
02/23/24
7'
(BRL)

BACKGROUND-01@2'
02/23/24
2'
Brn= 0.395
EC = 0.333
SAR= 0.620
pH = **8.32**



LEGEND

- INITIAL 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 SAMPLE COLLECTED
APPROXIMATE DEPTH
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)

mg/kg = MILLIGRAMS PER KILOGRAM

NOTES:
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT/OR ABOVE LABORATORY REPORTING LIMITS AND/OR MINIMUM DETECTION LIMITS.

ELEVATED METALS ARE NATURALLY OCCURRING IN COLORADO. LOCAL CLEAN-UP LEVELS ARE 1.25*BACKGROUND CONCENTRATIONS WHERE APPLICABLE.

VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS AND APPLICABLE LOCAL CLEAN-UP LEVELS.

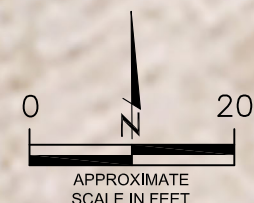
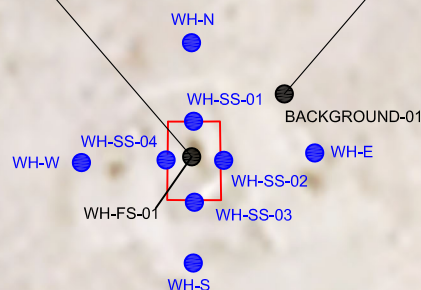
*VALUES EXCEED ECMC TABLE 915-1 PROTECTION OF GROUNDWATER SOIL SCREENING LEVELS, ONLY.

**ACHIEVABLE PRACTICAL QUANTITATIVE LIMITS FOR HEXAVALENT CHROMIUM (Cr VI) IN SOILS IS IN THE RANGE OF 0.1 TO 1 mg/kg.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

WH-FS-01@7'
02/23/24
7'
Arsenic = **4.55**
Barium = **89.4***
Cadmium = 0.322
Chromium (VI) = <0.244**
Copper = <9.06
Lead = 9.58
Nickel = 5.73
Selenium = **0.405***
Silver = 0.252
Zinc = <33.5

BACKGROUND-01@2'
02/23/24
2'
Arsenic = 3.29
Barium = 62.8
Cadmium = 0.134
Chromium (VI) = <0.244**
Copper = <9.77
Lead = 7.16
Nickel = 5.67
Selenium = <0.254
Silver = <0.0977
Zinc = <36.2



METALS IN SOIL MAP
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDIAL # 31628

FIGURE NO.
4

DRAWN BY:
RS





TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDIALATION # 31628

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 7' (40.506162 / -104.448213)	02/23/24	7	1.9	Y
WH-SS-01 @ 6' (40.506171 / -104.448212)	02/23/24	6	2.0	N
WH-SS-02 @ 6' (40.506169 / -104.448207)	02/23/24	6	2.7	N
WH-SS-03 @ 6' (40.506162 / -104.448215)	02/23/24	6	1.9	N
WH-SS-04 @ 6' (40.506168 / -104.448229)	02/23/24	6	1.2	N
WH-N @ 0.5' (40.506190 / -104.448217)	02/23/24	0.5	0.8	N
WH-E @ 0.5' (40.506169 / -104.448189)	02/23/24	0.5	1.1	N
WH-S @ 0.5' (40.506145 / -104.448214)	02/23/24	0.5	0.8	N
WH-W @ 0.5' (40.506167 / -104.448255)	02/23/24	0.5	1.0	N
Background-01 @ 2' (40.506146 / -104.448250)	02/23/24	2	1.3	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
GIBSON #11-9
CLOSURE ASSESSMENT
40.506190 / -104.448170
NW¼ NW¼ SEC.9 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-23102
REMEDATION # 31628

Sample Location				WH-FS-01 @ 7'	Background-01 @ 2'
(Latitude / Longitude)				(40.506162 / -104.448213)	(40.506146 / -104.448250)
Sample Date				2/23/2024	2/23/2024
Sample Depth				7	2
PID Reading (ppm-v)				1.9	1.3
Regulatory Limits					
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level	
VOLATILE ORGANIC COMPOUNDS					
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
Naphthalene	mg/kg	2	0.0038	--	<0.00380
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	--	<0.002
2-Methyl-naphthalene	mg/kg	24	0.019	--	<0.002
Acenaphthene	mg/kg	360	0.55	--	<0.020
Anthracene	mg/kg	1800	5.8	--	<0.020
Benzo(a)-anthracene	mg/kg	1.1	0.011	--	<0.005
Benzo(a)-pyrene	mg/kg	0.11	0.24	--	<0.020
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	--	<0.020
Benzo(k)-fluoranthene	mg/kg	11	2.9	--	<0.020
Chrysene	mg/kg	110	9	--	<0.020
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	--	<0.020
Fluoranthene	mg/kg	240	8.9	--	<0.020
Fluorene	mg/kg	240	0.54	--	<0.020
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	--	<0.020
Pyrene	mg/kg	180	1.3	--	<0.020
SOIL SUITABILITY (Inorganics)					
Boron	mg/L	2	--	--	0.295
pH	standard unit	6-8.3	--	--	8.08
Sodium Adsorption Ratio (SAR)	--	<6	--	--	0.520
Specific Conductance (EC)	mmhos/cm	<4	--	--	0.792
METALS					
Arsenic	mg/kg	0.68	0.29	4.11	4.55
Barium	mg/kg	15000	82	--	89.4*
Cadmium	mg/kg	71	0.38	--	0.322
Copper	mg/kg	3100	46	--	<9.06
Lead	mg/kg	400	14	--	9.58
Nickel	mg/kg	1500	26	--	5.73
Selenium	mg/kg	390	0.26	--	0.405*
Silver	mg/kg	390	0.8	--	0.252
Zinc	mg/kg	23000	370	--	<33.5
Hexavalent Chromium	mg/kg	0.3**	0.00067**	0.1 to 1.0**	<0.244**
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 NA - Not Analyzed 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. Elevated metals are naturally occurring in Colorado. Local Clean-up Levels are 1.25*Background concentrations where applicable. Values presented in BOLD exceed ECMC Table 915-1 Regulatory Limits and applicable Local Clean-up Levels. Values presented with asterisk (*) exceed ECMC Table 915-1 GSSLs, only. **Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.					



ATTACHMENT A

Photo Log

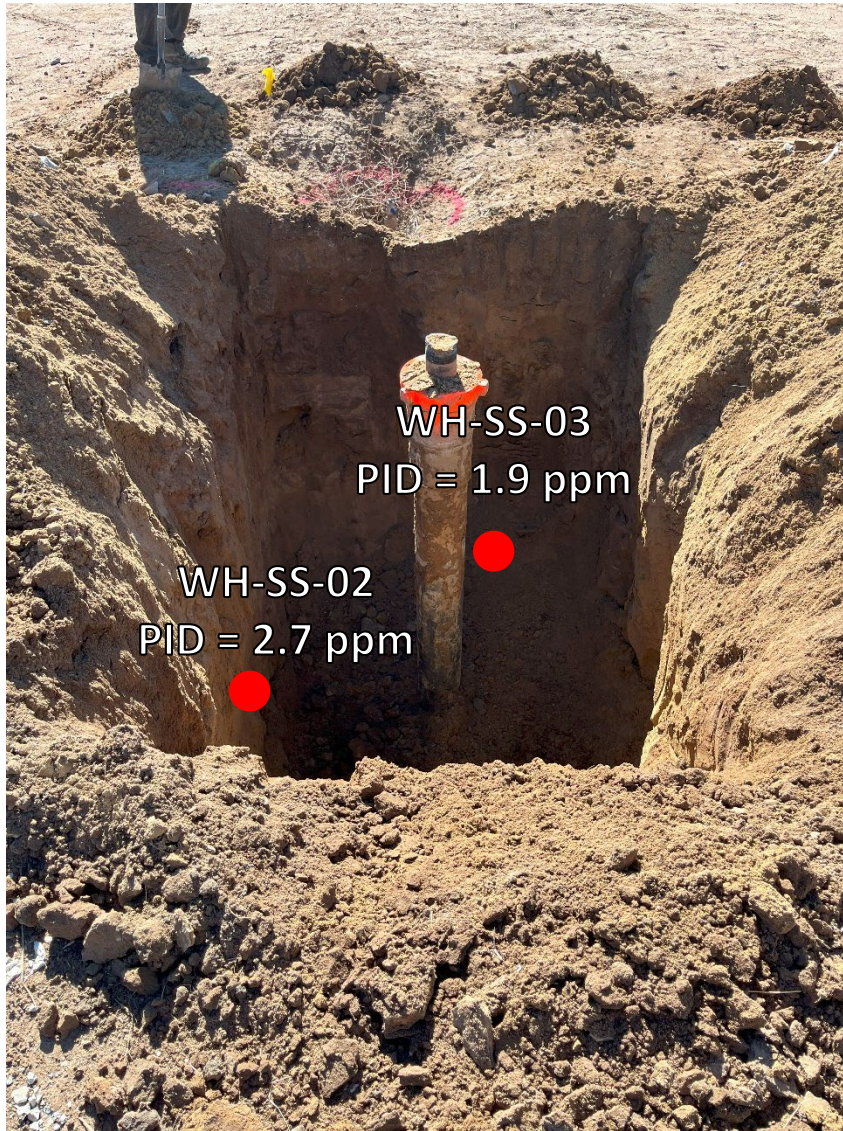
Gibson #11-9
API # 05-123-23102
Remediation # 31628

Closure Assessment

February 2024



Wellhead Excavation – 02/23/24



Looking south

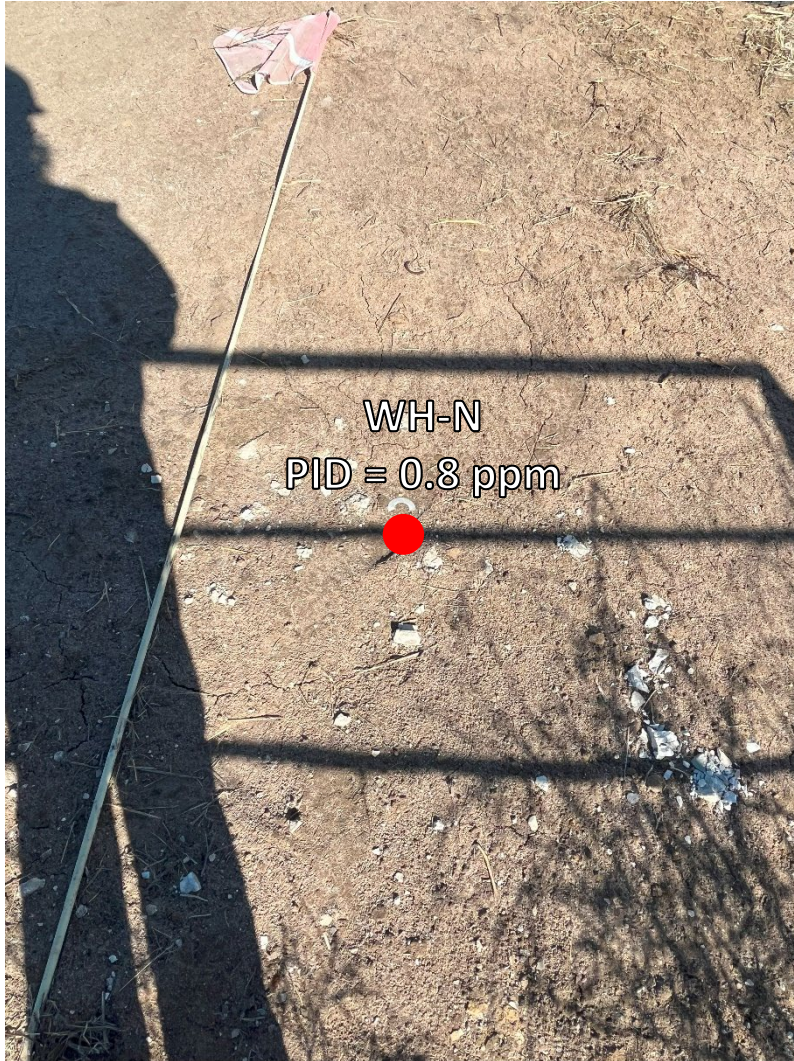
No petroleum hydrocarbon staining or odor observed



Looking west

No petroleum hydrocarbon staining or odor observed

Wellhead Surface – 02/23/24



Looking north

Site in good condition – no petroleum hydrocarbon staining or odor
Observed on surface around wellhead



Looking east

Site in good condition – no petroleum hydrocarbon staining or odor
Observed on surface around wellhead

Wellhead Surface – 02/23/24



Looking south

Site in good condition – no petroleum hydrocarbon staining or odor
Observed on surface around wellhead



Looking west

Site in good condition – no petroleum hydrocarbon staining or odor
Observed on surface around wellhead