

Wellhead Closure Checklist

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

Additional attachments (optional):		Pit Closure <u> </u>		Tank Battery Closure <u> </u>		Flowline Closure <u> </u>		Partially Buried Vault Closure <u> </u>	
Site Name & COGCC Facility Number: Brown-USX AA #3-23		Date: 07-27-23					Remediation Project #: 30240		
Associated Wells: 05-123-24609		Age of Site: Years					Number of Photos Attached: 1		
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)						40.512320 / -104.417940			
Estimated Facility Size (acres):									
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good									
USCS Soil Type: Clayey SAND				Estimated Depth to Groundwater: Approx. 15-25'					
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) High PID, faint odor, no staining									
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	05-123-24609								
Age	Years								
Condition of surface around wellhead	Good - Per Crew								
PID Readings	N/A - Excavated Upon Arrival								
Condition of subsurface (staining present)	Faint odor, no staining								
PID Readings	71.6	91.0	44.2	79.1	38.3				
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: Well casing cut/capped following assessment.									
Summary									
Was impacted soil identified? No <input type="checkbox"/> Yes - less than 10 cubic yards <input checked="" type="checkbox"/> Yes - more than 10 cubic yards <input type="checkbox"/>									
Total number of samples field screened: 5				Total number of samples collected: 5					
Highest PID Reading: 91.0				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? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - not impacted or in contact with impacted soils <input type="checkbox"/> 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

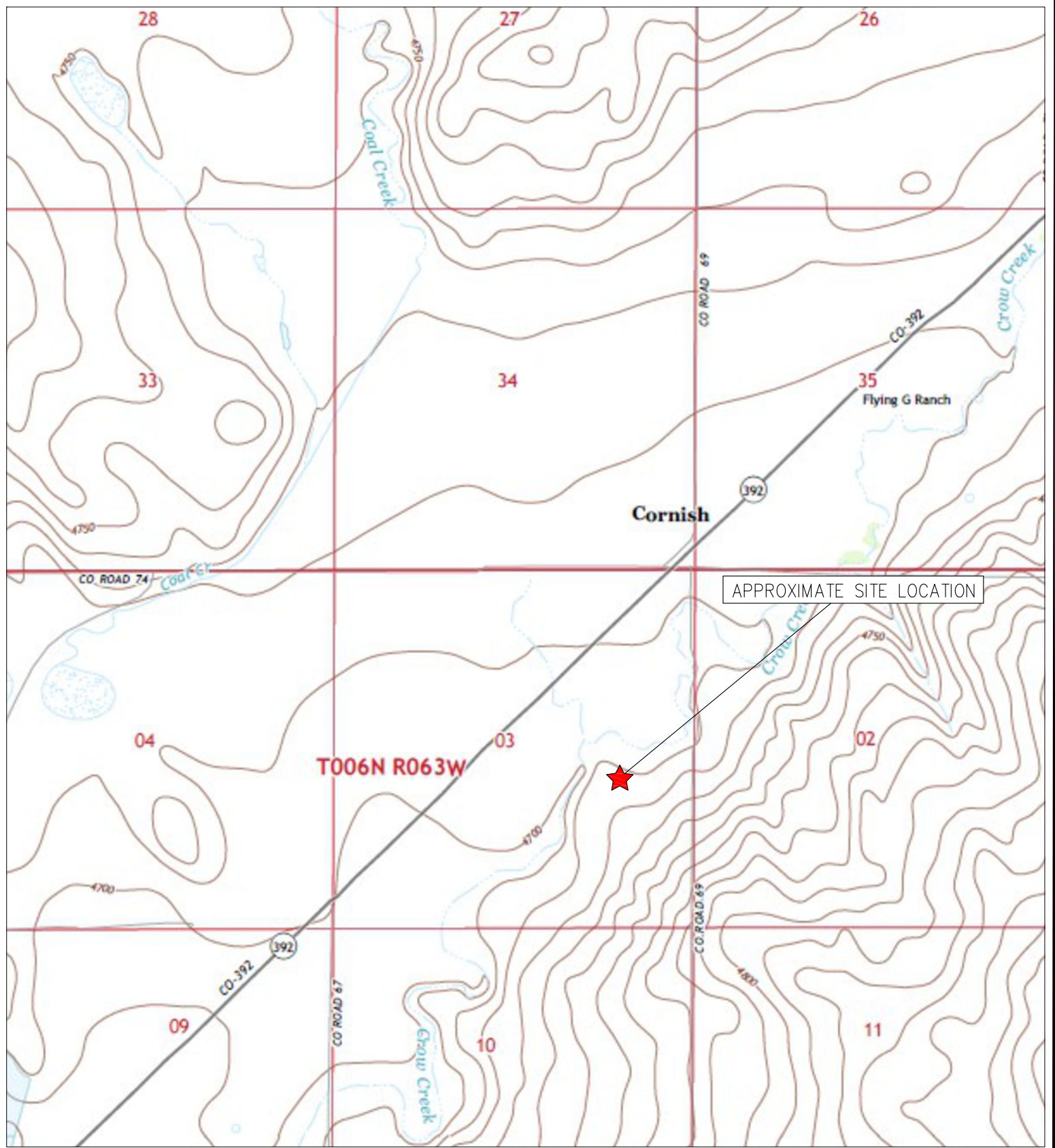
Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Sample Location Map

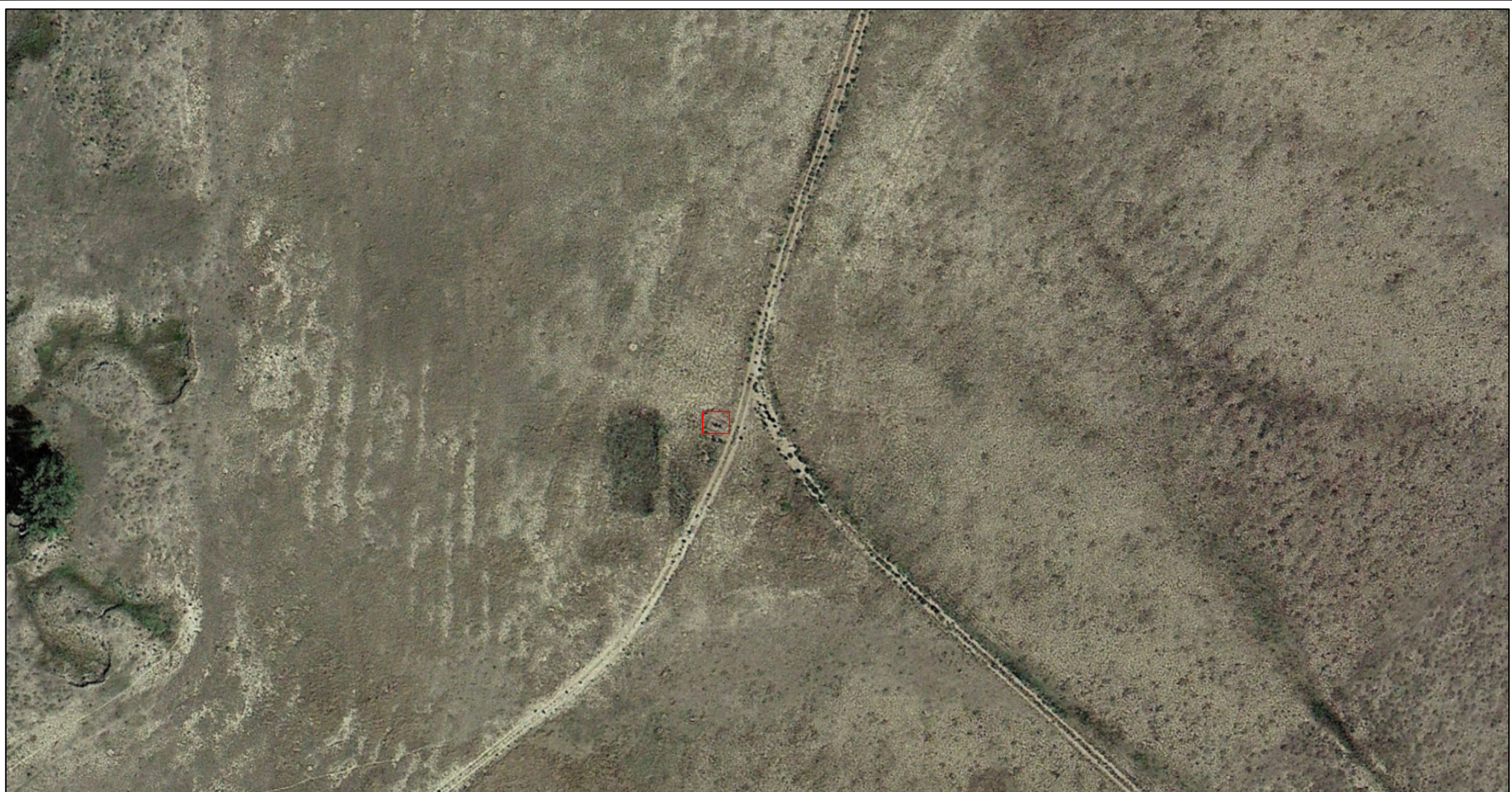
Figure 4: Soil Analytical Map

Figure 5: Metals in Soil Map




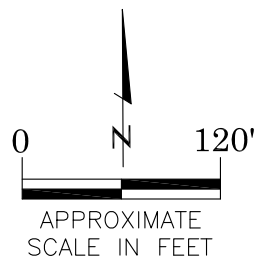
TOPOGRAPHIC SITE LOCATION MAP
 BROWN-USX AA #3-23
 CLOSURE ASSESSMENT
 40.512320 / -104.417940
 NW¼ SE¼ SEC.3 T6N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-24609
 REMEDIATION # 30240





LEGEND

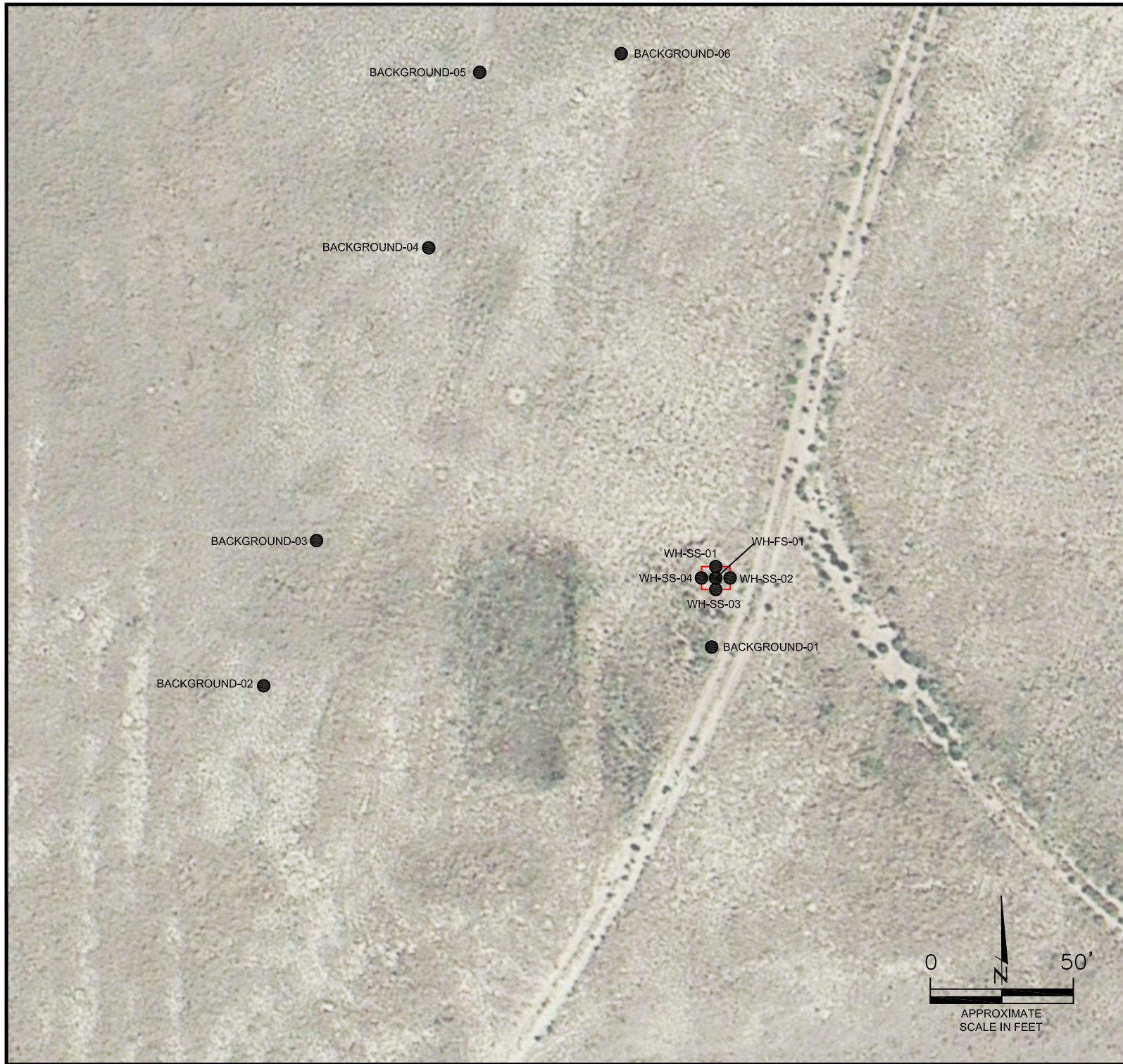
 FORMER BROWN-USX AA #3-23 WELLHEAD (PLUGGED AND ABANDONED)



AERIAL SITE LOCATION MAP
BROWN-USX AA #3-23
CLOSURE ASSESSMENT
40.512320 / -104.417940
NW¼ SE¼ SEC.3 T6N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-24609
REMEDATION # 30240

FIGURE NO.
2

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LEGEND

--- WELLHEAD ASSESSMENT BOUNDARIES

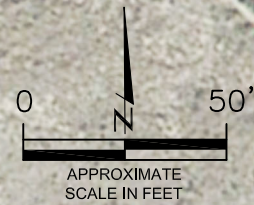
● APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

SS-02

SOIL SAMPLE LOCATION MAP
 BROWN-USX AA #3-23
 CLOSURE ASSESSMENT
 40.512320 / -104.417940
 NW¼ SE¼ SEC.3 T6N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-24609
 REMEDIATION # 30240

FIGURE NO.
3

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LEGEND

- - - - WELLHEAD ASSESSMENT BOUNDARIES
- 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

NS = NOT SAMPLED

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

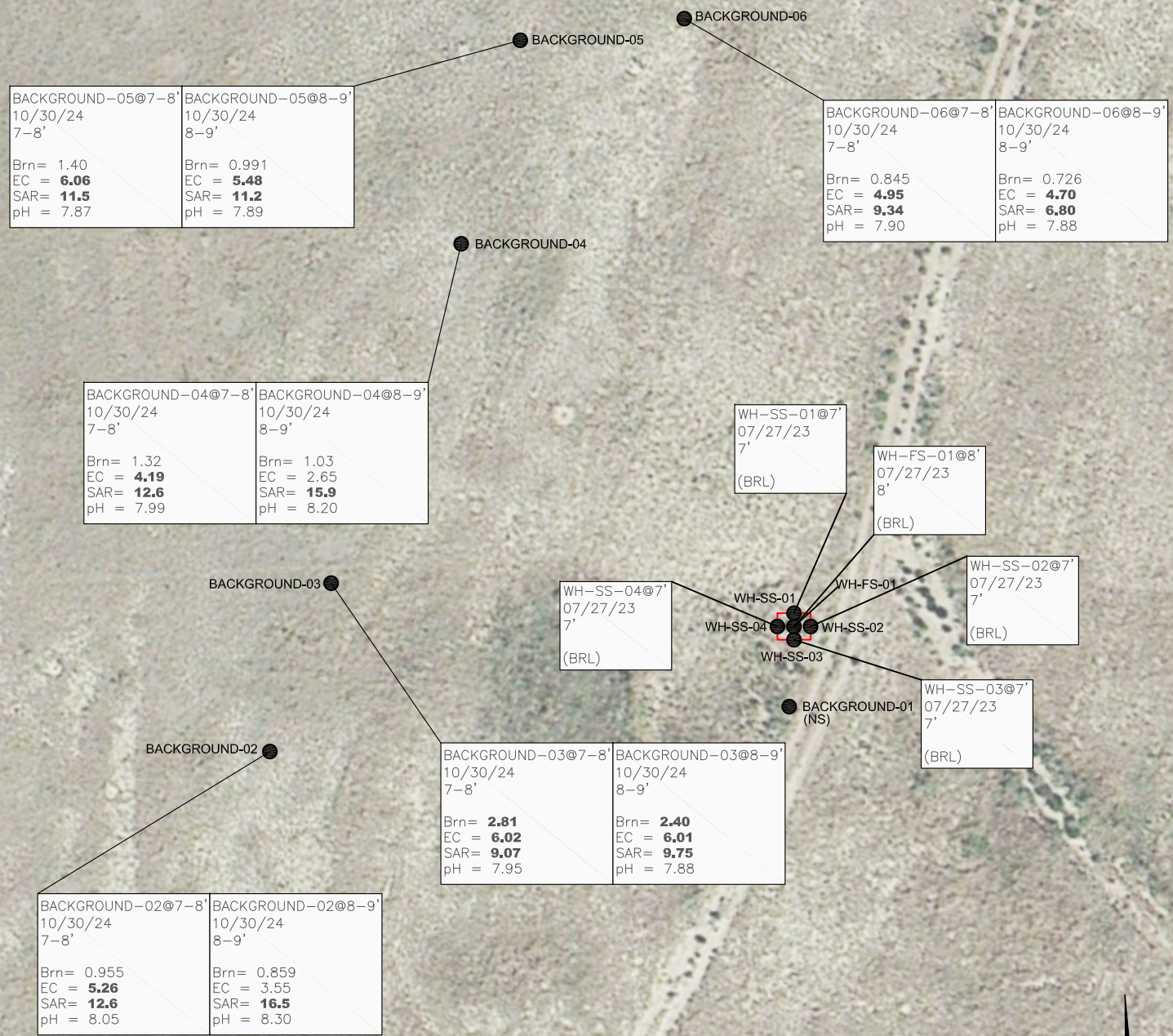
NOTES:
 VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SOIL ANALYTICAL MAP
 BROWN-USX AA #3-23
 CLOSURE ASSESSMENT
 40.512320 / -104.417940
 NW¼ SEC.3 T6N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-24609
 REMEDIATION # 30240

FIGURE NO.
4

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BACKGROUND-05@7-8' 10/30/24 7-8'	BACKGROUND-05@8-9' 10/30/24 8-9'
Brn= 1.40 EC = 6.06 SAR= 11.5 pH = 7.87	Brn= 0.991 EC = 5.48 SAR= 11.2 pH = 7.89

BACKGROUND-06@7-8' 10/30/24 7-8'	BACKGROUND-06@8-9' 10/30/24 8-9'
Brn= 0.845 EC = 4.95 SAR= 9.34 pH = 7.90	Brn= 0.726 EC = 4.70 SAR= 6.80 pH = 7.88

BACKGROUND-04@7-8' 10/30/24 7-8'	BACKGROUND-04@8-9' 10/30/24 8-9'
Brn= 1.32 EC = 4.19 SAR= 12.6 pH = 7.99	Brn= 1.03 EC = 2.65 SAR= 15.9 pH = 8.20

WH-SS-04@7' 07/27/23 7'
(BRL)

WH-SS-01@7' 07/27/23 7'
(BRL)

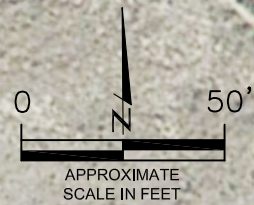
WH-FS-01@8' 07/27/23 8'
(BRL)

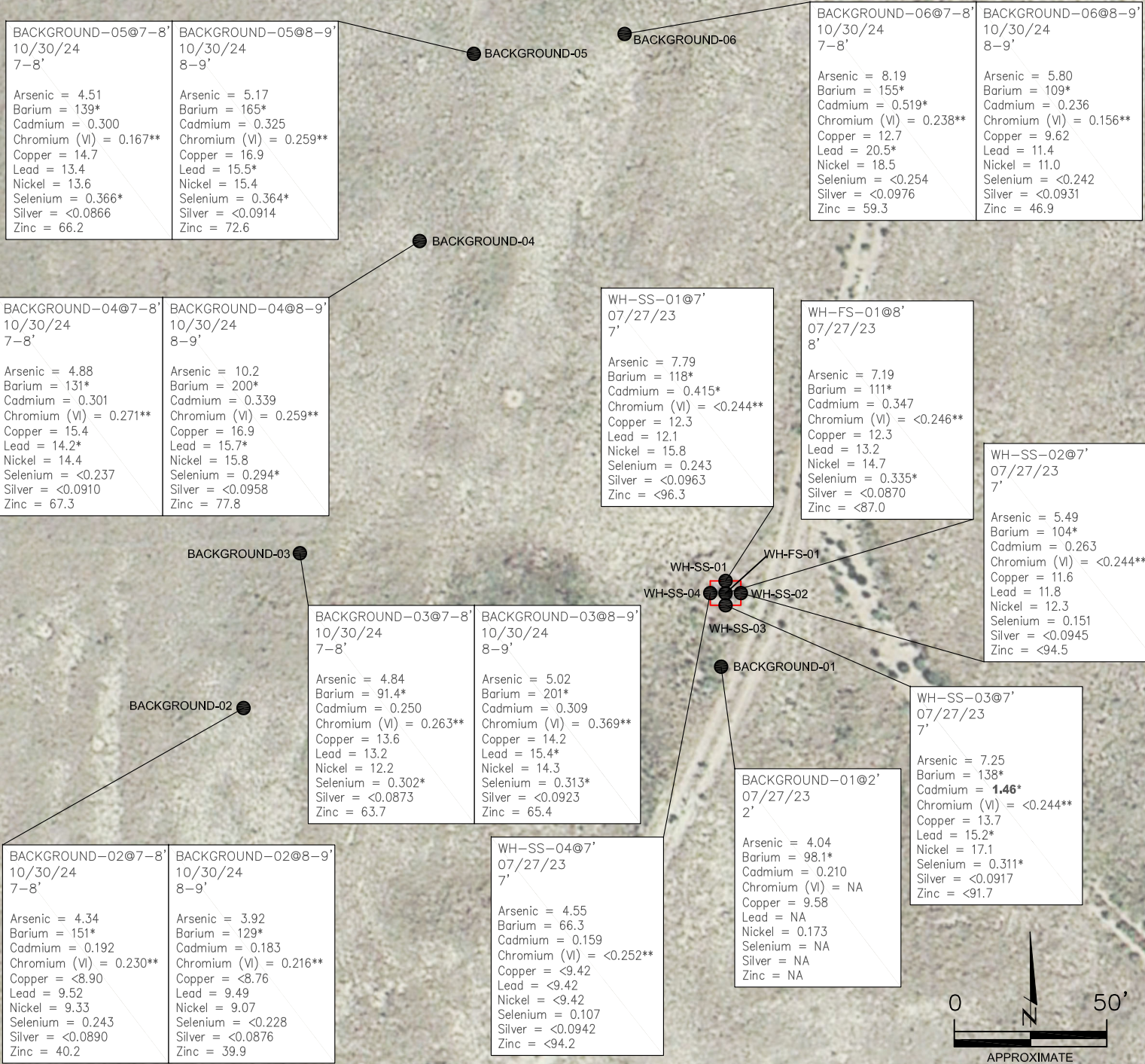
WH-SS-02@7' 07/27/23 7'
(BRL)

WH-SS-03@7' 07/27/23 7'
(BRL)

BACKGROUND-03@7-8' 10/30/24 7-8'	BACKGROUND-03@8-9' 10/30/24 8-9'
Brn= 2.81 EC = 6.02 SAR= 9.07 pH = 7.95	Brn= 2.40 EC = 6.01 SAR= 9.75 pH = 7.88

BACKGROUND-02@7-8' 10/30/24 7-8'	BACKGROUND-02@8-9' 10/30/24 8-9'
Brn= 0.955 EC = 5.26 SAR= 12.6 pH = 8.05	Brn= 0.859 EC = 3.55 SAR= 16.5 pH = 8.30





LEGEND

- - - - WELLHEAD ASSESSMENT BOUNDARIES
- 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

NA – NOT ANALYZED

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

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.

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

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

METALS IN SOIL MAP
 BROWN-USX AA #3-23
 CLOSURE ASSESSMENT
 40.512320 / -104.417940
 NW¼ SE¼ SEC.3 T6N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-24609
 REMEDIATION # 30240

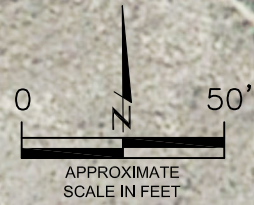


FIGURE NO.
5

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TABLES

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

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE ENERGY 100322
BROWN-USX AA #3-23, WELD COUNTY, COLORADO
REM # 30240

Sample ID	Sample Date	Depth	GPS Data		VOC Concentration (ppm)
			Latitude/Longitude		
WH-FS-01 @ 8'	7/27/2023	8	40.512323	-104.417931	38.3
WH-SS-01 @ 7'	7/27/2023	7	40.512335	-104.417932	71.6
WH-SS-02 @ 7'	7/27/2023	7	40.512323	-104.417916	91.0
WH-SS-03 @ 7'	7/27/2023	7	40.512312	-104.417931	44.2
WH-SS-04 @ 7'	7/27/2023	7	40.512324	-104.417950	79.1
Background-01 @ 2'	7/27/2023	2	40.512253	-104.417926	0.3
Background-02 @ 7-8'	10/30/2024	7-8	40.512212	-104.418483	0.3
Background-02 @ 8-9'	10/30/2024	8-9	40.512212	-104.418483	0.3
Background-03 @ 7-8'	10/30/2024	7-8	40.512351	-104.418422	1.2
Background-03 @ 8-9'	10/30/2024	8-9	40.512351	-104.418422	1.0
Background-04 @ 7-8'	10/30/2024	7-8	40.512628	-104.418292	0.2
Background-04 @ 8-9'	10/30/2024	8-9	40.512628	-104.418292	0.2
Background-05 @ 7-8'	10/30/2024	7-8	40.512783	-104.418237	0.2
Background-05 @ 8-9'	10/30/2024	8-9	40.512783	-104.418237	0.3
Background-06 @ 7-8'	10/30/2024	7-8	40.512828	-104.418035	1.9
Background-06 @ 8-9'	10/30/2024	8-9	40.512828	-104.418035	2.2

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

in. = Inches

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY 100322
BROWN-USX AA #3-23, WELD COUNTY, COLORADO
REM # 30240

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**		
WH-SS-01 @ 7'	7/27/2023	7	<0.00200	0.00638	0.00740	0.0136	<0.00200	0.00218	<0.00380	<500	<0.200	<25.0	<100
WH-SS-02 @ 7'	7/27/2023	7	<0.00200	0.00436	0.00594	0.0107	<0.00200	<0.00200	<0.00380	<500	<0.200	<25.0	<100
WH-SS-03 @ 7'	7/27/2023	7	<0.00200	<0.00200	0.00506	0.00692	<0.00200	0.00246	<0.00380	<500	<0.200	<25.0	<100
WH-SS-04 @ 7'	7/27/2023	7	<0.00200	0.00464	0.00616	0.0107	<0.00200	<0.00200	<0.00380	<500	<0.200	<25.0	<100
WH-FS-01 @ 8'	7/27/2023	8	<0.00200	0.00620	0.00734	0.0131	<0.00200	<0.00200	<0.00380	<500	<0.200	<25.0	<100

1. Bold values are equal to or 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

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY 100322
BROWN-USX AA #3-23, WELD COUNTY, COLORADO
REM # 30240

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
WH-SS-01 @ 7'	7/27/2023	7	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
WH-SS-02 @ 7'	7/27/2023	7	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
WH-SS-03 @ 7'	7/27/2023	7	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
WH-SS-04 @ 7'	7/27/2023	7	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201
WH-FS-01 @ 8'	7/27/2023	8	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00201	<0.00201

1. Bold values are equal to or 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

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY 100322
BROWN-USX AA #3-23, WELD COUNTY, COLORADO
REM # 30240

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
WH-SS-01 @ 7'	7/27/2023	7	8.19	0.736	2.00	0.649
WH-SS-02 @ 7'	7/27/2023	7	7.87	3.06	1.44	0.578
WH-SS-03 @ 7'	7/27/2023	7	8.26	0.289	0.463	0.289
WH-SS-04 @ 7'	7/27/2023	7	7.77	2.51	0.117	0.315
WH-FS-01 @ 8'	7/27/2023	8	8.03	0.610	1.33	0.509
Background-02 @ 7-8'	10/30/2024	7-8	8.05	5.26	12.6	0.955
Background-02 @ 8-9'	10/30/2024	8-9	8.30	3.55	16.5	0.859
Background-03 @ 7-8'	10/30/2024	7-8	7.95	6.02	9.07	2.81
Background-03 @ 8-9'	10/30/2024	8-9	7.88	6.01	9.75	2.40
Background-04 @ 7-8'	10/30/2024	7-8	7.99	4.19	12.6	1.32
Background-04 @ 8-9'	10/30/2024	8-9	8.20	2.65	15.9	1.03
Background-05 @ 7-8'	10/30/2024	7-8	7.87	6.06	11.5	1.40
Background-05 @ 8-9'	10/30/2024	8-9	7.89	5.48	11.2	0.991
Background-06 @ 7-8'	10/30/2024	7-8	7.90	4.95	9.34	0.845
Background-06 @ 8-9'	10/30/2024	8-9	7.88	4.70	6.80	0.726
Maximum Background Concentration			8.30	6.06	16.5	2.81
Average Background Concentration			7.99	4.89	11.5	1.33

1. Bold values are equal to or exceed the ECMC Table 915-1 limit(s)
 2. Blue highlighted soil analytical values indicate a regulatory exceedance
- NA - Not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY 100322
BROWN-USX AA #3-23, WELD COUNTY, COLORADO
REM # 30240

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
WH-SS-01 @ 7'	7/27/2023	7	7.79	118	0.415	<0.244*	12.3	12.1	15.8	0.243	<0.0963	<96.3
WH-SS-02 @ 7'	7/27/2023	7	5.49	104	0.263	<0.244*	11.6	11.8	12.3	0.151	<0.0945	<94.5
WH-SS-03 @ 7'	7/27/2023	7	7.25	138	1.46	<0.244*	13.7	15.2	17.1	0.311	<0.0917	<91.7
WH-SS-04 @ 7'	7/27/2023	7	4.55	66.3	0.159	<0.252*	<9.42	<9.42	<9.42	0.107	<0.0942	<94.2
WH-FS-01 @ 8'	7/27/2023	8	7.19	111	0.347	<0.246*	12.3	13.2	14.7	0.335	<0.0870	<87.0
Background-01 @ 2'	7/27/2023	2	4.04	98.1	0.210	NA	NA	9.58	NA	0.173	NA	NA
Background-02 @ 7-8'	10/30/2024	7-8	4.34	151	0.192	0.230	<8.90	9.52	9.33	0.243	<0.0890	40.2
Background-02 @ 8-9'	10/30/2024	8-9	3.92	129	0.183	0.216	<8.76	9.49	9.07	<0.228	<0.0876	39.9
Background-03 @ 7-8'	10/30/2024	7-8	4.84	91.4	0.250	0.263	13.6	13.2	12.2	0.302	<0.0873	63.7
Background-03 @ 8-9'	10/30/2024	8-9	5.02	201	0.309	0.369	14.2	15.4	14.3	0.313	<0.0923	65.4
Background-04 @ 7-8'	10/30/2024	7-8	4.88	131	0.301	0.271	15.4	14.2	14.4	<0.237	<0.0910	67.3
Background-04 @ 8-9'	10/30/2024	8-9	10.2	200	0.339	0.259	16.9	15.7	15.8	0.294	<0.0958	77.8
Background-05 @ 7-8'	10/30/2024	7-8	4.51	139	0.300	0.167	14.7	13.4	13.6	0.366	<0.0866	66.2
Background-05 @ 8-9'	10/30/2024	8-9	5.17	165	0.325	0.259	16.9	15.5	15.4	0.364	<0.0914	72.6
Background-06 @ 7-8'	10/30/2024	7-8	8.19	155	0.519	0.238	12.7	20.2	18.5	<0.254	<0.0976	59.3
Background-06 @ 8-9'	10/30/2024	8-9	5.80	109	0.236	0.156	9.62	11.4	11.0	<0.242	<0.0931	46.9
Maximum Background Concentration			10.2	201	0.519	0.369	16.9	20.2	18.5	0.366		77.8
125% Maximum Background Concentration			12.8	251	0.649	0.461	21.1	25.3	23.1	0.458		97.3

1. Bold values are equal to or 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)

* Achievable practical quantitative limits for Hexavalent Chromium (CrVI) in soils is in the range of 0.1 to 1 mg/kg

NA - Not analyzed

ATTACHMENT A

Photo Log

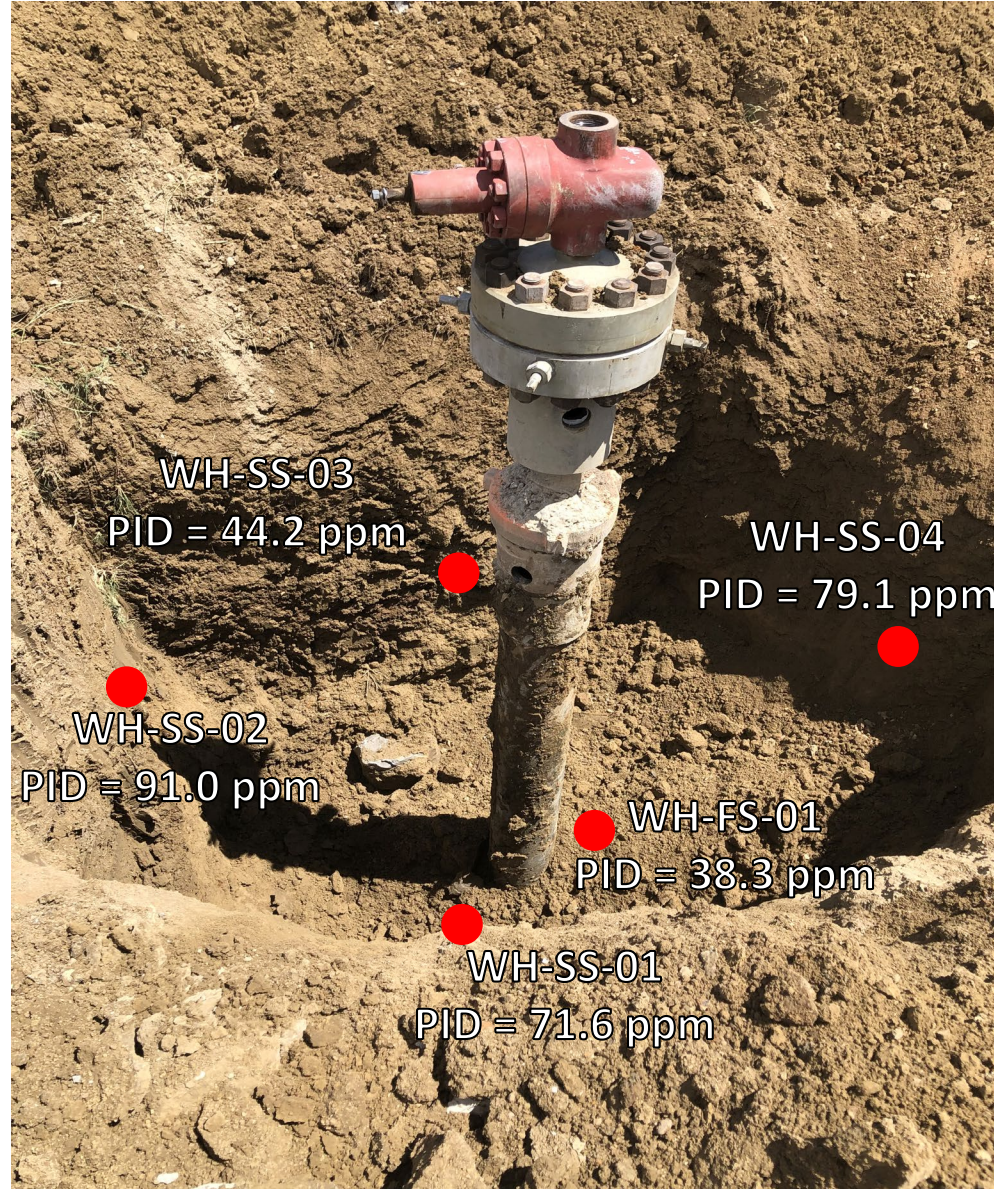
Brown-USX AA #3-23
API # 05-123-24609
Remediation # 30240

Closure Assessment

July 2023



Wellhead Excavation – 07/27/23



Looking south

No petroleum hydrocarbon staining but slight odor observed.

ATTACHMENT B

Soil Boring Logs

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') silty SAND - brown, dry, fine grained, loose/soft, poorly graded with ~30-35% silt, no plasticity, N/O, N/S	SM	HA	1	100	0.1	N/A			
						0.3				
5	(5-9') clayey SAND - brown, dry, loose/soft, fine grained, poorly-graded with ~20-25% clay, slight plasticity, N/O, N/S	SC	HA	2	100	0.5	N/A			
						0.3				
						0.3				
10	BoB @ 9'									
15										
20										
25										
30										

HA - Hand Auger
 DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 10/30/24		SAND PACK INTERVAL (FEET): N/A	
PROJECT: BROWN-USX AA #3-23		BENTONITE/GROUT INTERVAL (FEET): N/A	
LOGGED BY: I. MCFARLAND		WELL SCREEN INTERVAL (FEET): N/A	
DRILLING COMPANY/EQUIPMENT: EAGLE/HAND AUGER		WELL DIAMETER (INCHES): N/A	
BORING DEPTH (FEET): 9	WELL DEPTH (FEET): N/A		
PID INSTRUMENT: MiniRAE 3000 - PID #10			
TIME STARTED/COMPLETED: 1140/1220			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 7-8'/1205 & 8-9'/1220			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') silty SAND - brown, dry, fine grained, loose/soft, poorly graded with ~30-35% silt, no plasticity, N/O, N/S	SM	HA	1	100	0.9	N/A			
						1.3				
5	(5-9') clayey SAND - brown, dry, loose/soft, fine grained, poorly-graded with ~20-25% clay, slight plasticity, N/O, N/S @7-9' trace CaCO3	SC	HA	2	100	1.3	N/A			
						1.2				
						1.0				
10	BoB @ 9'									
15										
20										
25										
30										

HA - Hand Auger
 DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 10/30/24	SAND PACK INTERVAL (FEET): N/A
PROJECT: BROWN-USX AA #3-23	BENTONITE/GROUT INTERVAL (FEET): N/A
LOGGED BY: I. MCFARLAND	WELL SCREEN INTERVAL (FEET): N/A
DRILLING COMPANY/EQUIPMENT: EAGLE/HAND AUGER	WELL DIAMETER (INCHES): N/A
BORING DEPTH (FEET): 9	WELL DEPTH (FEET): N/A
PID INSTRUMENT: MiniRAE 3000 - PID #10	
TIME STARTED/COMPLETED: 1240/1320	
SAMPLE COLLECTION DEPTH (FT.)/TIME: 7-8'/1305 & 8-9'/1320	

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') silty SAND - brown, dry, fine grained, loose/soft, poorly graded with ~30-35% silt, no plasticity, N/O, N/S	SM	HA	1	100	2.8	N/A			
						0.1				
5	(5-9') clayey SAND - brown, dry, loose/soft, fine grained, poorly-graded with ~20-25% clay, slight plasticity, N/O, N/S	SC	HA	2	100	0.5	N/A			
						0.2				
						0.2				
10	BoB @ 9'									
15										
20										
25										
30										

HA - Hand Auger
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 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 10/30/24	SAND PACK INTERVAL (FEET): N/A
PROJECT: BROWN-USX AA #3-23	BENTONITE/GROUT INTERVAL (FEET): N/A
LOGGED BY: I. MCFARLAND	WELL SCREEN INTERVAL (FEET): N/A
DRILLING COMPANY/EQUIPMENT: EAGLE/HAND AUGER	WELL DIAMETER (INCHES): N/A
BORING DEPTH (FEET): 9	WELL DEPTH (FEET): N/A
PID INSTRUMENT: MiniRAE 3000 - PID #10	
TIME STARTED/COMPLETED: 1340/1420	
SAMPLE COLLECTION DEPTH (FT.)/TIME: 7-8'/1405 & 8-9'/1415	

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') silty SAND - brown, dry, fine grained, loose/soft, poorly graded with ~30-35% silt, no plasticity, N/O, N/S	SM	HA	1	100	0.5	N/A			
						1.1				
5	(5-9') clayey SAND - brown, dry, loose/soft, fine grained, poorly-graded with ~20-25% clay, slight plasticity, N/O, N/S	SC	HA	2	100	0.4	N/A			
						0.2				
						0.3				
10	BoB @ 9'									
15										
20										
25										
30										

HA - Hand Auger
 DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 10/30/24	SAND PACK INTERVAL (FEET): N/A
PROJECT: BROWN-USX AA #3-23	BENTONITE/GROUT INTERVAL (FEET): N/A
LOGGED BY: I. MCFARLAND	WELL SCREEN INTERVAL (FEET): N/A
DRILLING COMPANY/EQUIPMENT: EAGLE/HAND AUGER	WELL DIAMETER (INCHES): N/A
BORING DEPTH (FEET): 9	WELL DEPTH (FEET): N/A
PID INSTRUMENT: MiniRAE 3000 - PID #10	
TIME STARTED/COMPLETED: 1440/1520	
SAMPLE COLLECTION DEPTH (FT.)/TIME: 7-8'/1505 & 8-9'/1515	

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-5') silty SAND - brown, dry, fine grained, loose/soft, poorly graded with ~30-35% silt, no plasticity, N/O, N/S	SM	HA	1	100	0.8	N/A			
						0.9				
5	(5-9') clayey SAND - brown, dry, loose/soft, fine grained, poorly-graded with ~20-25% clay, slight plasticity, N/O, N/S	SC	HA	2	100	5.5	N/A			
						1.9				
						2.2				
10	BoB @ 9'									
15										
20										
25										
30										

HA - Hand Auger
 DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 10/30/24	SAND PACK INTERVAL (FEET): N/A
PROJECT: BROWN-USX AA #3-23	BENTONITE/GROUT INTERVAL (FEET): N/A
LOGGED BY: I. MCFARLAND	WELL SCREEN INTERVAL (FEET): N/A
DRILLING COMPANY/EQUIPMENT: EAGLE/HAND AUGER	WELL DIAMETER (INCHES): N/A
BORING DEPTH (FEET): 9	WELL DEPTH (FEET): N/A
PID INSTRUMENT: MiniRAE 3000 - PID #10	
TIME STARTED/COMPLETED: 1540/1620	
SAMPLE COLLECTION DEPTH (FT.)/TIME: 7-8'/1605 & 8-9'/1620	