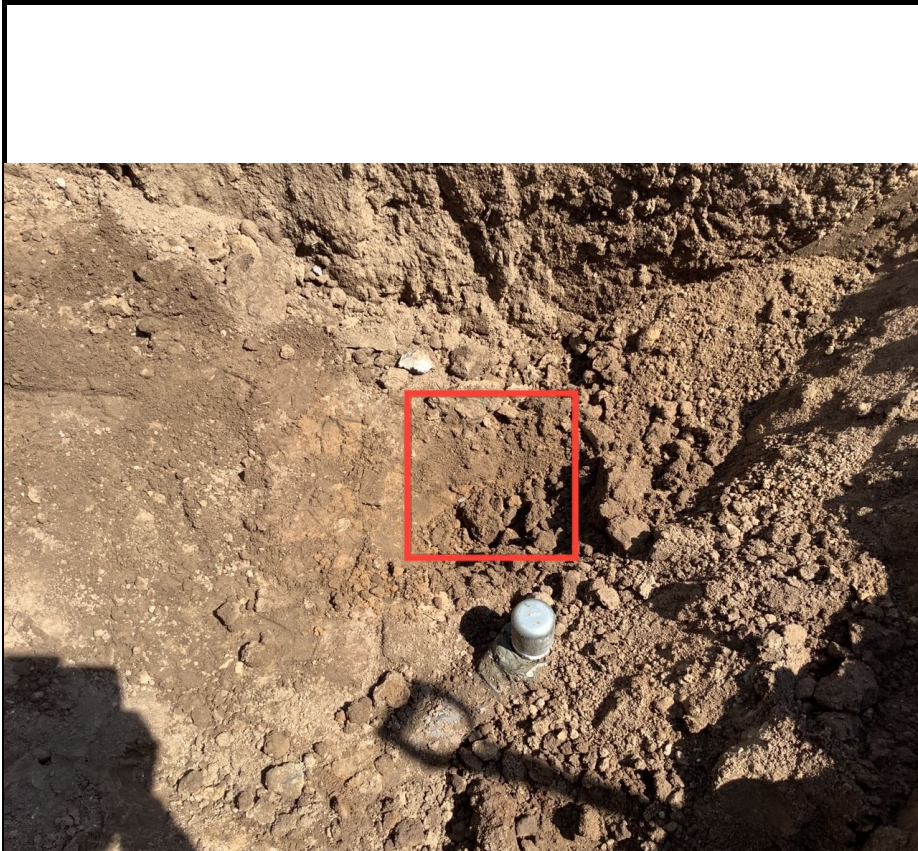




SITE NAME: BROWN 44-24 FLOWLINE							DATE: 7/15/2024	REM. PROJECT #: 25490	WEATHER: Sunny, 70s	
SITE DIRECTIONS:							CLIENT: NOBLE			
LEGALS AND LAT/LONG: 40.292161, -104.718458							TASMAN PERSONNEL: MW, JM			
SOIL TYPES: SW - well graded							SURFACE GRADIENT:			
SOIL SAMPLING							FACILITY INFRASTRUCTURE			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?	
							Above Ground Storage Tank (AST)			
7/15/2024 10:34	FL01R-W@2'	0.0	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel			
7/15/2024 11:16	BKG01@2'	0.0	No Staining	No Odor	Yes	Lab	Separator			
							Emission Control Device (ECD)			
							Dump Line			
							Wellhead			
							Flowline	1		
							Other:			
							Soil Loads Removed			
							IMPACTED SOIL IDENTIFIED?			
							ESTIMATED VOLUME OF IMPACTS:			
							Date	Number	CY	
							Total Removed	0	0	
							Disposal Facility:			
							Groundwater Recovery			
							DATE GW ENCOUNTERED:		DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?			
							LNAPL OR SHEEN OBSERVED ON GW?			
GROUNDWATER SAMPLING							Date	BBLS		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?				
							Total Removed	0		
							Disposal Facility:			



Equipment ID: FL01R-W@2'		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING N.			

Equipment ID: BKG01		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			



SITE NAME: BROWN 44-24 FAC							DATE: 7/15/2024	REM. PROJECT #: 26014	WEATHER: SUNNY, 70s		
SITE DIRECTIONS: WCR 42 / 37, 3/10 mi W, N into site							CLIENT: NOBLE				
LEGALS AND LAT/LONG: 40.292161, -104.718458							TASMAN PERSONNEL: MW, JM				
SOIL TYPES: SW							SURFACE GRADIENT:				
SOIL SAMPLING							FACILITY INFRASTRUCTURE				
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?		
							Above Ground Storage Tank (AST)	1			
7/15/2024 09:17	AST01@0-6"	0.5	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel	1			
7/15/2024 11:26	PWV01-N@2'	2.4	No Staining	Slight HC Odor	Yes	On-hold	Separator	1			
7/15/2024 11:27	PWV01-E@2'	0.5	No Staining	Slight HC Odor	Yes	On-hold	Emission Control Device (ECD)				
7/15/2024 11:28	PWV01-S@2'	29.3	No Staining	Slight HC Odor	Yes	Lab	Dump Line	1			
7/15/2024 11:29	PWV01-W@2'	11.2	No Staining	Slight HC Odor	Yes	On-hold	Wellhead				
7/15/2024 11:30	PWV01-B@4'	131.8	HC Staining	HC Odor	Yes	Lab	Flowline				
7/15/2024 10:51	SEP01-DL@2'	0.5	No Staining	No Odor	Yes	Lab	Other:				
7/15/2024 10:53	SEP01-FL@2'	2.3	No Staining	No Odor	Yes	Lab	Soil Loads Removed				
7/15/2024 10:58	MH01@0-6"	0.0	No Staining	No Odor	Yes	Grab	IMPACTED SOIL IDENTIFIED?				
7/15/2024 11:22	BKG01@0-6"	0.0	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS:				
7/15/2024 11:23	BKG01@2'	0.0	No Staining	No Odor	Yes	Lab	Date	Number	CY		
7/15/2024 11:24	BKG01@4'	0.0	No Staining	No Odor	Yes	Lab					
							Total Removed	0	0		
							Disposal Facility:				
							Groundwater Recovery				
							DATE GW ENCOUNTERED:			DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?				
							LNAPL OR SHEEN OBSERVED ON GW?				
GROUNDWATER SAMPLING							Date	BBLs			
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?					
							Total Removed	0			
							Disposal Facility:				



Equipment ID: AST01@0-6"		Equipment Type:		Equipment ID: PWV01-N@2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING N				Notes/Conditions: FACING N			



Equipment ID: PWV01-E@2'		Equipment Type:		Equipment ID: PWV01-S@2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING E.				Notes/Conditions: FACING S.			



Equipment ID: PWV01-W@2'		Equipment Type:		Equipment ID: PWV01-B@4'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING W.				Notes/Conditions: FACING N.			



Equipment ID: SEP01-DL@2'		Equipment Type:		Equipment ID: SEP01-FL@2'		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions: FACING				Notes/Conditions: FACING			



Equipment ID: MH01@0-6"		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: FACING			

Equipment ID: BKG01		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions:			



Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: DUMPLINES			

Equipment ID:		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: SEPARATOR EXCAVATION			

TABLE 1
FIELD DATA SUMMARY TABLE
OPERATOR 100322
BROWN 44-24 FLOWLINE, WELD COUNTY, COLORADO
REM # 25490

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
FL01R-W@2'	07/15/2024	2'	40.29215918	-104.7184598	1.1	0.0
SEP01-FL@2'	07/15/2024	2'	40.29116213	-104.7193336	0.9	2.3
BKG01@2'	07/15/2024	2'	40.29210672	-104.7185047	0.8	0.0

Notes:

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
OPERATOR 100322
BROWN 44-24 FLOWLINE, WELD COUNTY, COLORADO
REM # 25490

Sample ID	Sample Date	Depth (ft. bgs)	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**		
FLO1R-W@2'	07/15/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50	<50
SEP01-FL@2'	07/15/2024	2	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & 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

ECMC = Energy & Carbon Management Commission

(<) = 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

bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
OPERATOR 100322
BROWN 44-24 FLOWLINE, WELD COUNTY, COLORADO
REM # 25490

Sample ID	Sample Date	Depth (ft. bgs)	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	1,800	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
FL01R-W@2'	07/15/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@2'	07/15/2024	2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
2. Pink & 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

ECMC = Colorado Energy & Carbon Management Commission

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

ft. = Feet

bgs = Below ground surface

mg/kg = Milligrams per kilogram

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
OPERATOR 100322
BROWN 44-24 FLOWLINE, WELD COUNTY, COLORADO
REM # 25490

Sample ID	Sample Date	Depth (ft. bgs)	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
FL01R-W@2'	07/15/2024	2	8.26	0.290	0.812	<2.00
SEP01-FL@2'	07/15/2024	2	7.96	0.135	0.402	<2.00
BKG01@2'	07/15/2024	2	7.69	0.396	1.69	<2.00
Maximum Root Background Concentration (0 - 3 ft)			7.69	0.396	1.69	<2.00
Mean Root Background Concentration (0 - 3 ft)			7.69	0.396	1.69	<2.00
Maximum Background Concentration			7.69	0.396	1.69	<2.00
Mean Background Concentration			7.69	0.396	1.69	<2.00

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
OPERATOR 100322
BROWN 44-24 FLOWLINE, WELD COUNTY, COLORADO
REM # 25490

Sample ID	Sample Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) ^[4] (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	15,000	71	0.3	3,100	400	1,500	390	390	23,000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01R-W@2'	07/15/2024	2	3.01	75.4	0.419	<0.30	9.31	29.4	4.02	<0.260	0.141	57.3
SEP01-FL@2'	07/15/2024	2	2.81	63.7	0.507	<0.30	8.27	13.9	4.21	<0.260	0.200	29.4
BKG01@2'	07/15/2024	2	2.39	64.8	0.232	<0.30	6.48	9.14	3.14	<0.260	0.0799	20.8
Maximum Background Concentration			2.39	64.8	0.232	<0.30	6.48	9.14	3.14	<0.260	0.0799	20.8
Maximum Background Concentration X 1.25			2.99	81.0	0.290	<0.30	8.10	11.43	3.93	<0.260	0.0999	26.0
Mean Background Concentration			2.39	64.8	0.232	<0.30	6.48	9.14	3.14	<0.260	0.0799	20.8
Mean Background Concentration X 1.25			2.99	81.0	0.290	<0.30	8.10	11.43	3.93	<0.260	0.0999	26.0

Notes:

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Red** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
- Compound falls within ECMC Table 915-1 Footnote 9.
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

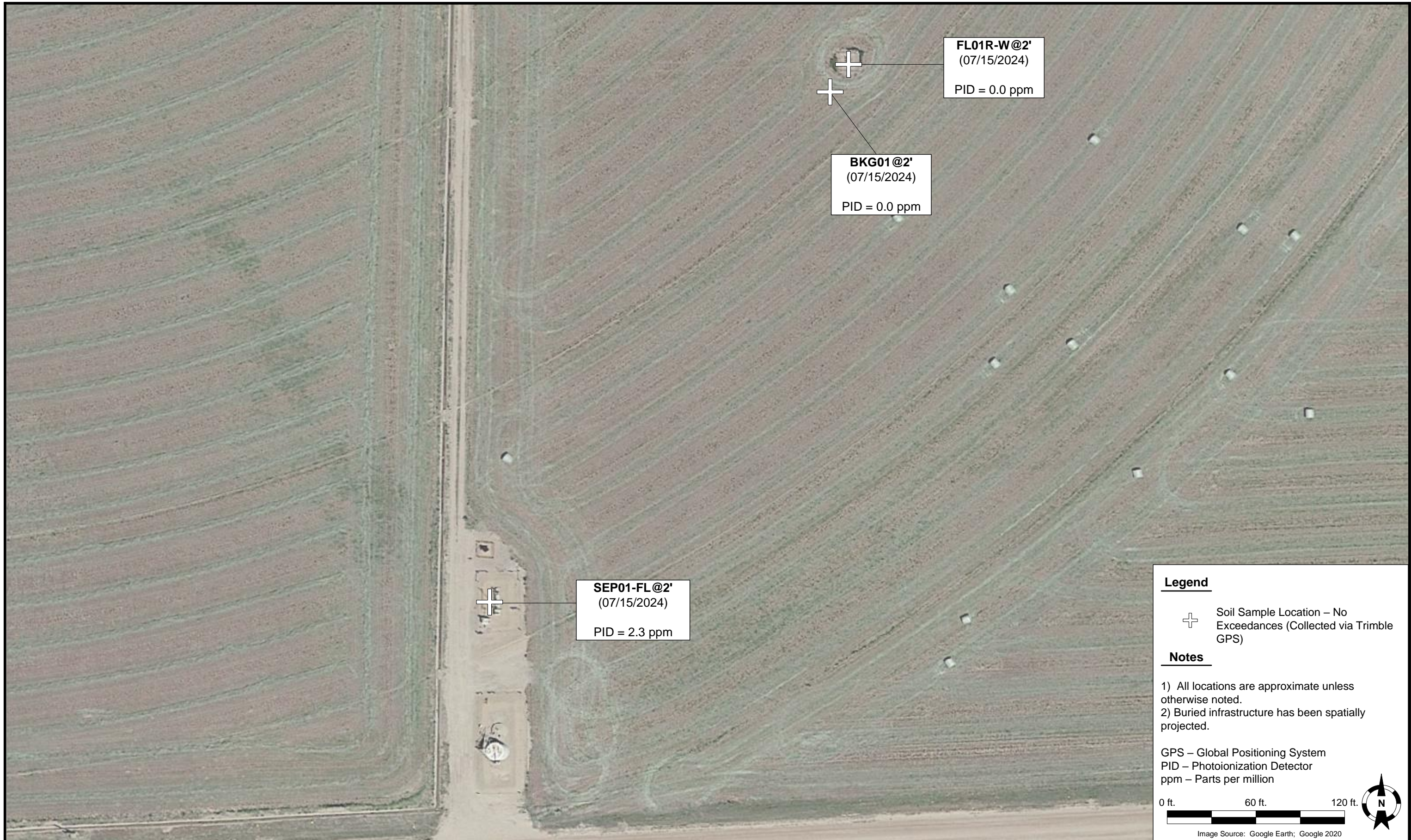
(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL



FL01R-W@2'
(07/15/2024)
PID = 0.0 ppm

BKG01@2'
(07/15/2024)
PID = 0.0 ppm

SEP01-FL@2'
(07/15/2024)
PID = 2.3 ppm

Legend

⊕ Soil Sample Location – No Exceedances (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.

GPS – Global Positioning System
PID – Photoionization Detector
ppm – Parts per million

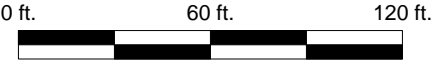


Image Source: Google Earth; Google 2020

DATE: 8/30/2024

DESIGNED BY: J. Whritenour

DRAWN BY: P. Kline



Tasman, Inc.
6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Brown 44-24 Flowline
NESE, Section 32, Township 4 North, Range 66 West
Weld County, Colorado

Flowline Closure & Soil
Analytical Results Map
(08/30/2024)

FIGURE
1