



TANK BATTERY DECOMMISSIONING FORM

SITE NAME: Moss 14-16H Tank Battery							DATE: 9/24/2024	REM. PROJECT #: 36910	WEATHER: Clear, 70's	
SITE DIRECTIONS: From CR 41 & CR 80, head east for 165ft, then north onto site.							CLIENT: PDC			
LEGALS AND LAT/LONG: 40.567536, -104.676282							TASMAN PERSONNEL: SB, PD			
SOIL TYPES: Poorly Graded Sand - SP							SURFACE GRADIENT: West			
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)	2	✓	
9/24/2024 09:16	AST01@0-6"	0.1	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel	1	✓	
9/24/2024 09:17	AST02@0-6"	0.2	No Staining	No Odor	Yes	Lab	Separator	1	✓	
9/24/2024 09:24	PWV01-B@4'	0.3	No Staining	No Odor	Yes	Lab	Emission Control Device (ECD)	2	✓	
9/24/2024 09:26	PWV01-N@2.5'	0.5	No Staining	No Odor	Yes	Lab	Dump Line	1	✓	
9/24/2024 09:28	PWV01-E@2.5'	0.4	No Staining	No Odor	Yes	On-hold	Wellhead	0		
9/24/2024 09:30	PWV01-S@2.5'	0.2	No Staining	No Odor	Yes	On-hold	Flowline	0		
9/24/2024 09:32	PWV01-W@2.5'	0.3	No Staining	No Odor	Yes	On-hold	Other:			
9/24/2024 10:10	FLARE01@0-6"	0.2	No Staining	No Odor	Yes	Grab	Soil Loads Removed			
9/24/2024 10:12	GS01@0-6"	0.2	No Staining	No Odor	Yes	Grab	IMPACTED SOIL IDENTIFIED? No			
9/24/2024 11:00	SEP01-DL@6'	0.8	No Staining	No Odor	Yes	Lab	ESTIMATED VOLUME OF IMPACTS: _			
9/24/2024 11:28	DL01-01@5'	0.1	No Staining	No Odor	Yes	Lab	Date	Number	CY	
9/24/2024 11:35	DL01-01@1'	0.8	Organic Cont	Organic Odor	Yes	Grab				
9/24/2024 14:00	BKG01@0-6"	0.3	No Staining	No Odor	Yes	Lab				
9/24/2024 14:02	BKG01@2.5'	0.3	No Staining	No Odor	Yes	Lab				
9/24/2024 14:04	BKG01@4'	0.5	No Staining	No Odor	Yes	Lab				
9/24/2024 14:06	BKG01@5'	0.1	No Staining	No Odor	Yes	Lab	Total Removed	0	0	
9/24/2024 14:08	BKG01@6'	0.4	No Staining	No Odor	Yes	Lab	Disposal Facility:			
9/24/2024 13:32	DL01-02@5'	0.5	No Staining	No Odor	Yes	Grab	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:			



Site Area/AOC: Moss 14-16H Tank Battery Client: PDC



Daily Forecast/Weather: Clear, 70's Personnel: SB, PD

Task/Location Description: Tank Battery Decommissioning & Soil Sampling Event



Need photo log? ☒





Photographic Log

					
Equipment ID: AST01@0-6"		Equipment Type: Above Ground Storage Tank			
Material: Steel	Volume:	Contents: Crude Oil			
Notes/Conditions:			Notes/Conditions:		



Photographic Log

							
Equipment ID: PWV01-B@4'		Equipment Type: Partially Buried Vault		Equipment ID: PWV01-N@2.5'		Equipment Type: Partially Buried Vault	
Material: Fiberglass		Volume:		Material: Fiberglass		Volume:	
		Contents: Produced Water				Contents: Produced Water	
Notes/Conditions:				Notes/Conditions:			

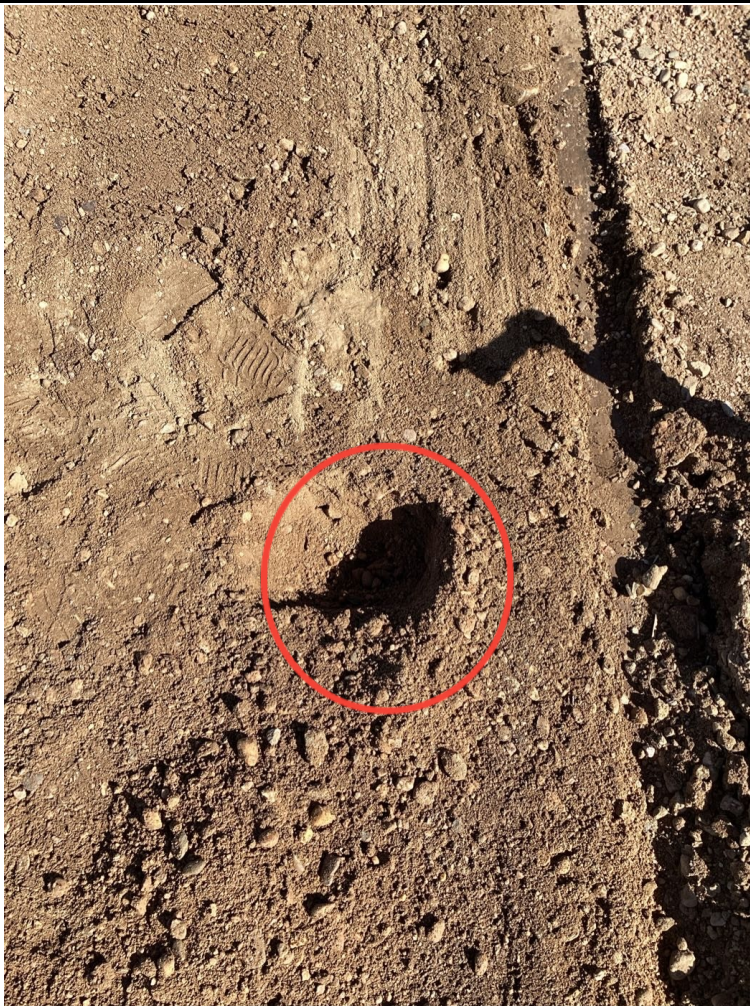
Photographic Log

											
Equipment ID: PWV01-E@2.5'		Equipment Type: Partially Buried Vault		Equipment ID: PWV01-S@2.5'		Equipment Type: Partially Buried Vault					
Material: Fiberglass		Volume:		Contents: Produced Water		Material: Fiberglass		Volume:		Contents: Produced Water	
Notes/Conditions:						Notes/Conditions:					

Photographic Log

					
Equipment ID: PWV01-W@2.5'		Equipment Type: Partially Buried Vault			
Material: Fiberglass	Volume:	Contents: Produced Water		Equipment ID: FLARE01@0-6"	
			Equipment Type: Emission Control Device		
Material: Steel		Volume:		Contents: Oil/Gas/Water	
Notes/Conditions:			Notes/Conditions:		

Photographic Log



Equipment ID:GS01 @0-6"

Equipment Type:Compressor

Material:Steel

Volume:

Contents:Oil/Gas/Water

Notes/Conditions:



Equipment ID:SEP01-DL@6'

Equipment Type:Separator

Material:Steel

Volume:

Contents:Oil/Gas/Water

Notes/Conditions:

Photographic Log

							
Equipment ID: DL01-01@5'		Equipment Type: Dump Line		Equipment ID: DL01-01@1'		Equipment Type: Dump Line	
Material: Steel		Volume:		Material: Steel		Volume:	
		Contents: Oil/Gas/Water				Contents: Oil/Gas/Water	
Notes/Conditions:				Notes/Conditions:			

Photographic Log


Equipment ID:BKG01@0-6", 2.5', 4', 5' 6'

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

Equipment ID:AST01

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



							
Equipment ID: AST02		Equipment Type:		Equipment ID: DL01-02@5'		Equipment Type: Dump Line	
Material:	Volume:	Contents:	Material: Steel	Volume:	Contents: Oil/Gas/Water		
Notes/Conditions:			Notes/Conditions:				

TABLE 1
FIELD DATA SUMMARY TABLE
PDC ENERGY, INC - 69175
FORMER MOSS 14-16H TANK BATTERY, WELD COUNTY, COLORADO
REM # 36910

Sample ID	Sample Date	Depth (ft. bgs)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@0-6"	09/24/24	0-0.5	40.567589	-104.676356	0.8	0.1
AST02@0-6"	09/24/24	0-0.5	40.567589	-104.676301	0.8	0.2
PWV01-B@4'	09/24/24	4	40.567597	-104.676410	0.8	0.3
PWV01-N@2.5'	09/24/24	2.5	40.567613	-104.676410	0.8	0.5
PWV01-E@2.5'	09/24/24	2.5	40.567602	-104.676392	0.7	0.4
PWV01-S@2.5'	09/24/24	2.5	40.567579	-104.676413	0.8	0.2
PWV01-W@2.5	09/24/24	2.5	40.567597	-104.676429	0.7	0.3
FLARE01@0-6"	09/24/24	0-0.5	40.567658	-104.676696	0.9	0.2
GS01@0-6"	09/24/24	0-0.5	40.567569	-104.676782	1.0	0.2
SEP01-DL@6'	09/24/24	6	40.567531	-104.676743	0.9	0.8
DL01-01@5'	09/24/24	5	40.567506	-104.676515	0.8	0.1
DL01-01@1'	09/24/24	1	40.567491	-104.676522	0.9	0.8
DL01-02@5'	09/24/24	5	40.567500	-104.676333	1.0	0.5
BKG01@0-6"	09/24/24	0-0.5	40.567850	-104.676537	0.8	0.3
BKG01@2.5'	09/24/24	2.5	40.567850	-104.676537	0.8	0.3
BKG01@4'	09/24/24	4	40.567850	-104.676537	0.8	0.5
BKG01@5'	09/24/24	5	40.567850	-104.676537	0.8	0.1
BKG01@6'	09/24/24	6	40.567850	-104.676537	0.8	0.4

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).
3. Background soil sample location within tank battery footprint.

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
PDC ENERGY, INC - 69175
FORMER MOSS 14-16H TANK BATTERY, WELD COUNTY, COLORADO
REM # 36910

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**		
AST01@0-6"	09/24/24	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@0-6"	09/24/24	0-0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-B@4'	09/24/24	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWV01-N@2.5'	09/24/24	2.5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01-DL@6'	09/24/24	6	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
DL01-01@5'	09/24/24	5	<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
PDC ENERGY, INC - 69175
FORMER MOSS 14-16H TANK BATTERY, WELD COUNTY, COLORADO
REM # 36910

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
AST01@0-6"	09/24/24	0-0.5	<0.00500	0.00847	0.0256	0.0227	0.0294	0.0120	0.0253	<0.00500	0.0451	<0.00500	0.0150	0.0450	<0.00500	<0.00500
AST02@0-6"	09/24/24	0-0.5	<0.00500	<0.00500	0.0128	0.0136	0.0185	0.00836	0.0136	<0.00500	0.0226	<0.00500	0.0104	0.0213	<0.00500	<0.00500
PWV01-B@4'	09/24/24	4	<0.00500	0.00638	0.0236	0.0288	0.0230	0.0192	0.0287	<0.00500	0.0379	<0.00500	0.0294	0.0428	<0.00500	<0.00500
PWV01-N@2.5'	09/24/24	2.5	<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-DL@6'	09/24/24	6	<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
DL01-01@5'	09/24/24	5	<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
4. The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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
PDC ENERGY, INC - 69175
FORMER MOSS 14-16H TANK BATTERY, WELD COUNTY, COLORADO
REM # 36910

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
AST01@0-6"	09/24/24	0-0.5	8.68	0.179	0.0131	<2.00
AST02@0-6"	09/24/24	0-0.5	8.73	0.176	0.0261	<2.00
PWV01-B@4'	09/24/24	4	8.24	0.317	0.144	<2.00
PWV01-N@2.5'	09/24/24	2.5	7.54	0.548	0.469	<2.00
SEP01-DL@6'	09/24/24	6	8.44	0.259	0.106	<2.00
DL01-01@5'	09/24/24	5	7.91	0.622	0.644	<2.00
BKG01@0-6"	09/24/24	0-0.5	7.11	1.21	0.740	<2.00
BKG01@2.5'	09/24/24	2.5	7.36	0.349	0.376	<2.00
BKG01@4'	09/24/24	4	8.25	0.292	0.154	<2.00
BKG01@5'	09/24/24	5	8.44	0.270	0.144	<2.00
BKG01@6'	09/24/24	6	8.40	0.295	0.220	<2.00
Maximum Background Concentration			8.44	-	-	-
Mean Background Concentration			7.91	-	-	-

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
PDC ENERGY, INC - 69175
FORMER MOSS 14-16H TANK BATTERY, WELD COUNTY, COLORADO
REM # 36910

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
AST01@0-6"	09/24/24	0-0.5	2.69	91.7	0.246	<0.30	7.81	11.3	4.77	<0.260	0.0348	26.2
AST02@0-6"	09/24/24	0-0.5	2.88	89.2	0.213	<0.30	6.24	13.4	5.06	<0.260	0.0309	26.3
PWV01-B@4'	09/24/24	4	4.04	92.6	0.304	<0.30	6.71	18.5	5.22	<0.260	0.0437	45.7
PWV01-N@2.5'	09/24/24	2.5	2.80	60.4	0.323	<0.30	3.38	4.21	5.69	<0.260	0.0269	14.6
SEP01-DL@6'	09/24/24	6	2.60	38.2	<0.179	<0.30	4.01	4.25	2.72	<0.232	0.0196	32.1
DL01-01@5'	09/24/24	5	1.16	22.8	<0.180	<0.30	1.29	1.49	1.14	<0.234	<0.0180	5.39
BKG01@0-6"	09/24/24	0-0.5	3.29	74.1	0.285	<0.30	8.38	8.81	4.84	0.290	0.0335	35.8
BKG01@2.5'	09/24/24	2.5	4.41	122	0.232	<0.30	5.46	9.38	6.31	<0.260	0.0444	20.5
BKG01@4'	09/24/24	4	1.07	10.5	<0.200	<0.30	1.25	1.49	1.60	<0.260	<0.0200	5.72
BKG01@5'	09/24/24	5	1.46	18.7	<0.200	<0.30	1.36	1.97	1.32	<0.260	<0.0200	6.10
BKG01@6'	09/24/24	6	1.61	17.7	<0.200	<0.30	1.73	1.87	1.45	<0.260	<0.0200	6.17
Maximum Background Concentration			4.41	122	-	-	-	9.38	-	-	-	-
Maximum Background Concentration X 1.25			5.51	153	-	-	-	11.7	-	-	-	-
Mean Background Concentration			2.37	48.6	-	-	-	4.70	-	-	-	-
Mean Background Concentration X 1.25			2.96	60.8	-	-	-	5.88	-	-	-	-

Notes:

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

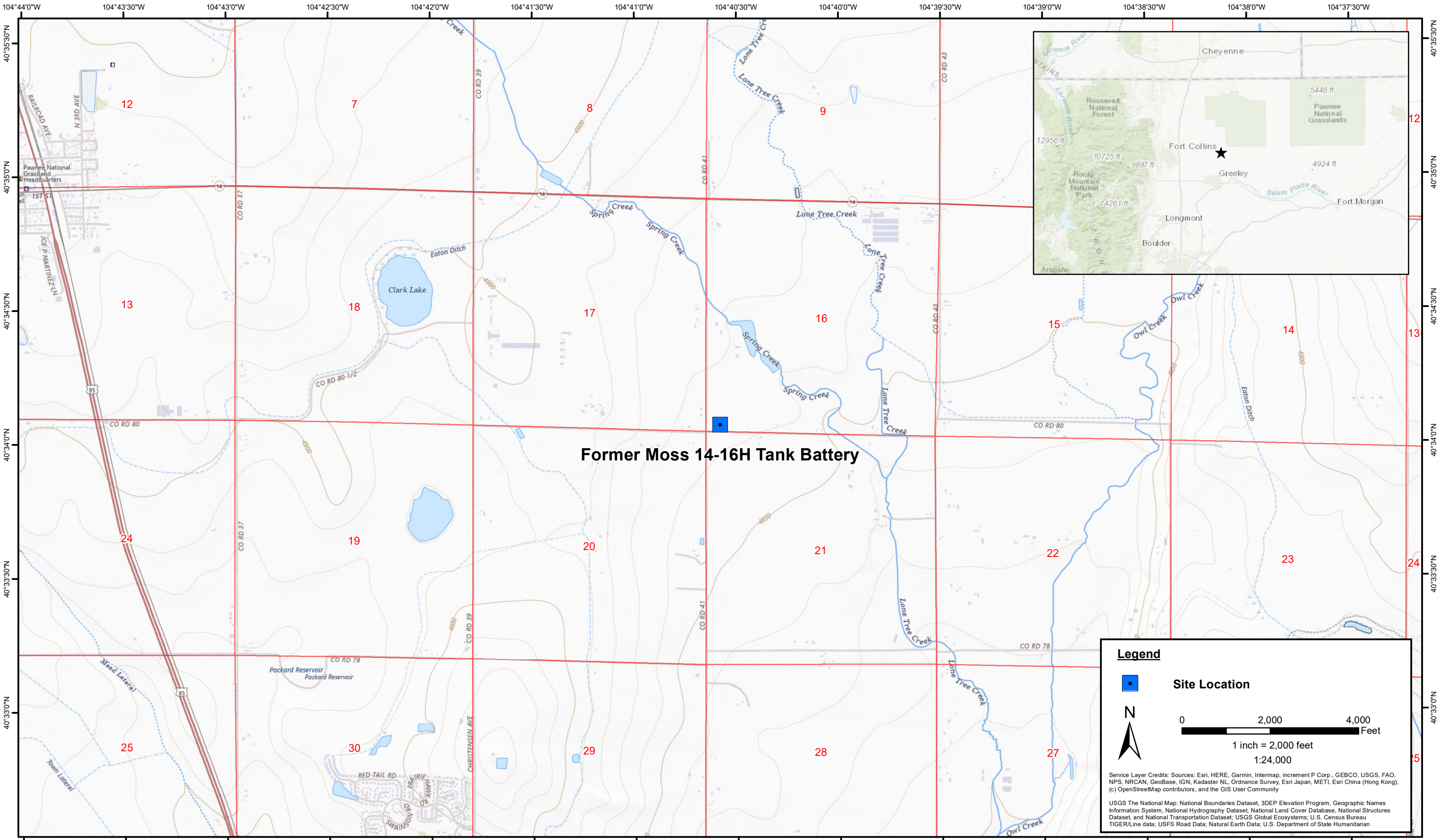
ECMC = Energy & Carbon Management Commission

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

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface



DATE:	October 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	L. Reed



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

PDC Energy Inc. - 69175 - DJ Basin
Former Moss 14-16H Tank Battery
SWSW, Section 16, Township 7 North, Range 65 West
Weld County, Colorado

Site Location Map

Figure
1

