



CDH Consulting, LLC
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Flowline Closure Investigation and Environmental Summary

MOWERY 19-1

ECMC Remediation Project #38063

Weld County, Colorado

Attachments:

Field Form

Figure 1 – Site Location Map

Figure 2 – Soil Sample and Field Screening Locations Map

Figure 3 – Supplemental Site Investigation Map

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

Photographic Log

Flowline Closure Checklist



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FIELD FORM



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FIGURES

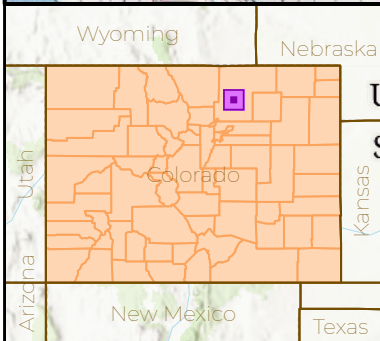
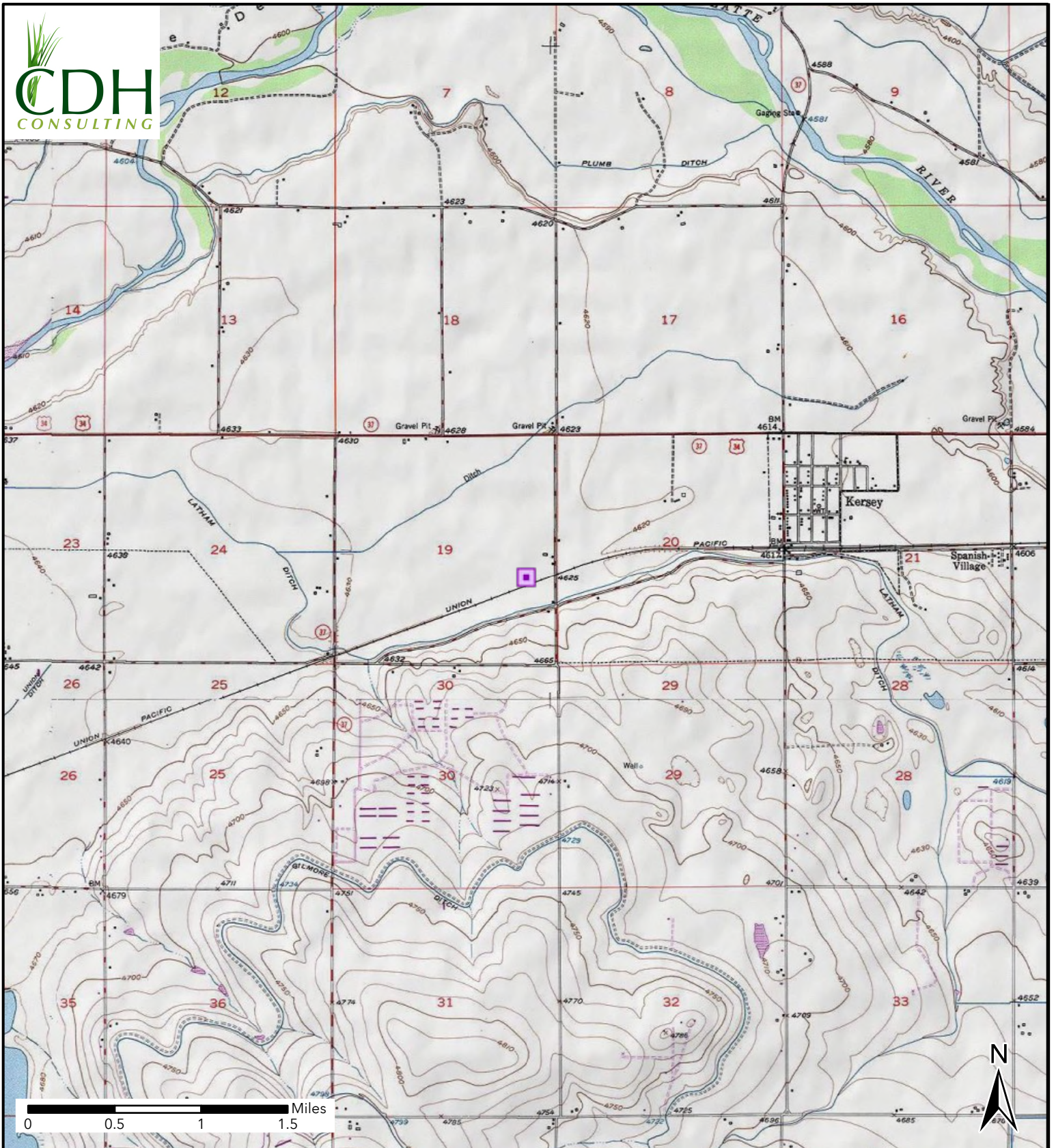
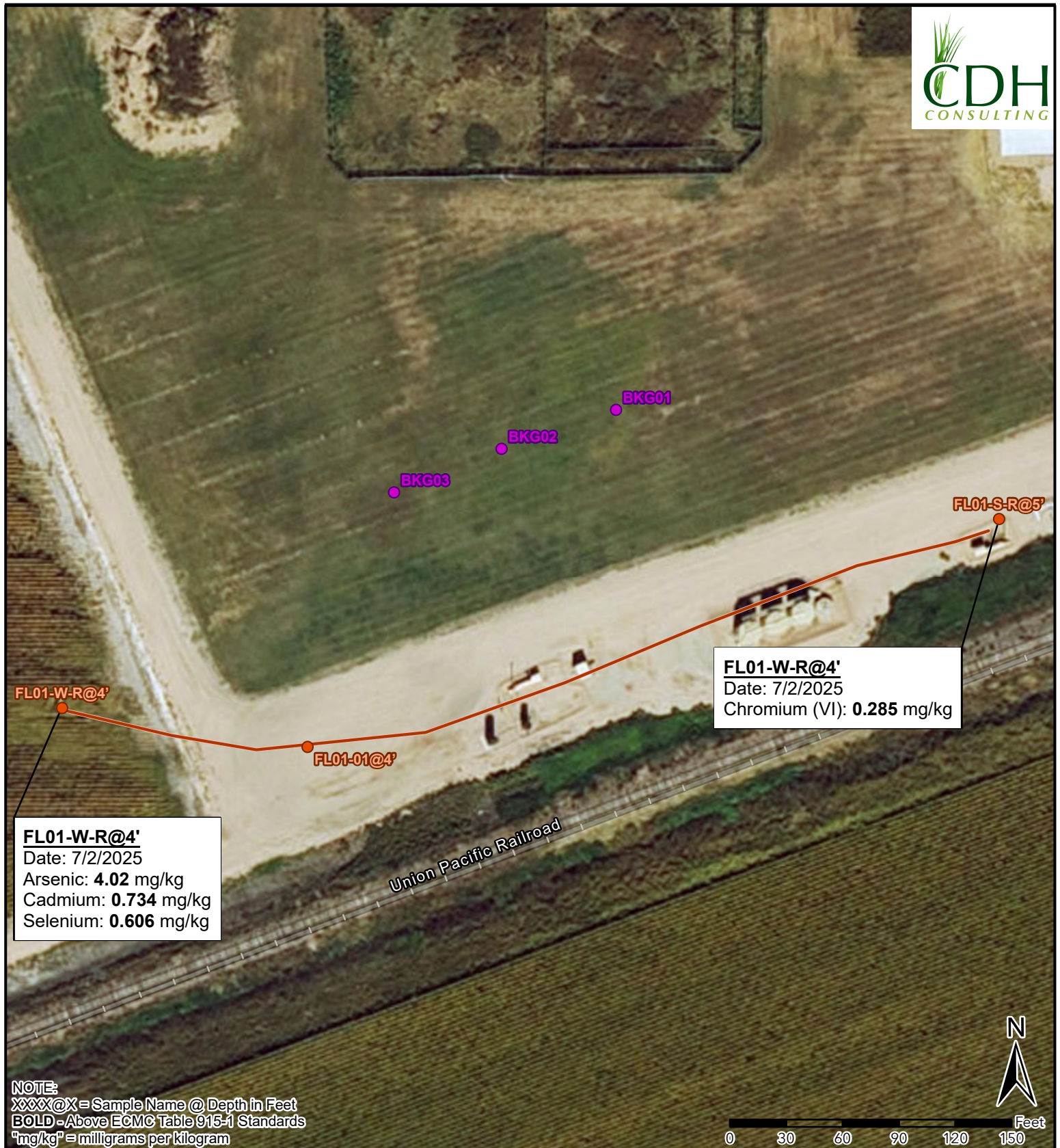


Figure 1
Site Location
MOWERY 19-1
NENE SEC 19-T8N-R65W
Weld County, Colorado
PDC Energy Inc.

 Site Location



FL01-W-R@4'

FL01-W-R@4'
 Date: 7/2/2025
 Arsenic: **4.02** mg/kg
 Cadmium: **0.734** mg/kg
 Selenium: **0.606** mg/kg

FL01-01@4'

Union Pacific Railroad

FL01-W-R@4'
 Date: 7/2/2025
 Chromium (VI): **0.285** mg/kg

FL01-S-R@5'

BKG03

BKG02

BKG01

NOTE:
 XXXX@X = Sample Name @ Depth in Feet
 BOLD - Above ECMC Table 915-1 Standards
 "mg/kg" = milligrams per kilogram

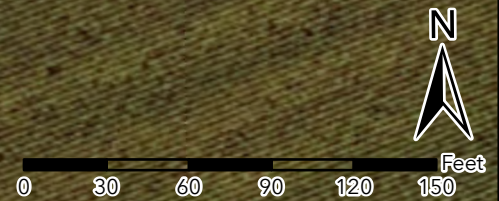


Figure 2 Soil Sample and Field Screening Location Map

MOWERY 19-1
 NENE-SEC 19-T8N-R65W
 Weld County, Colorado
 PDC Energy Inc.

- Soil Sample
- Background Sample
- Flowline Removed

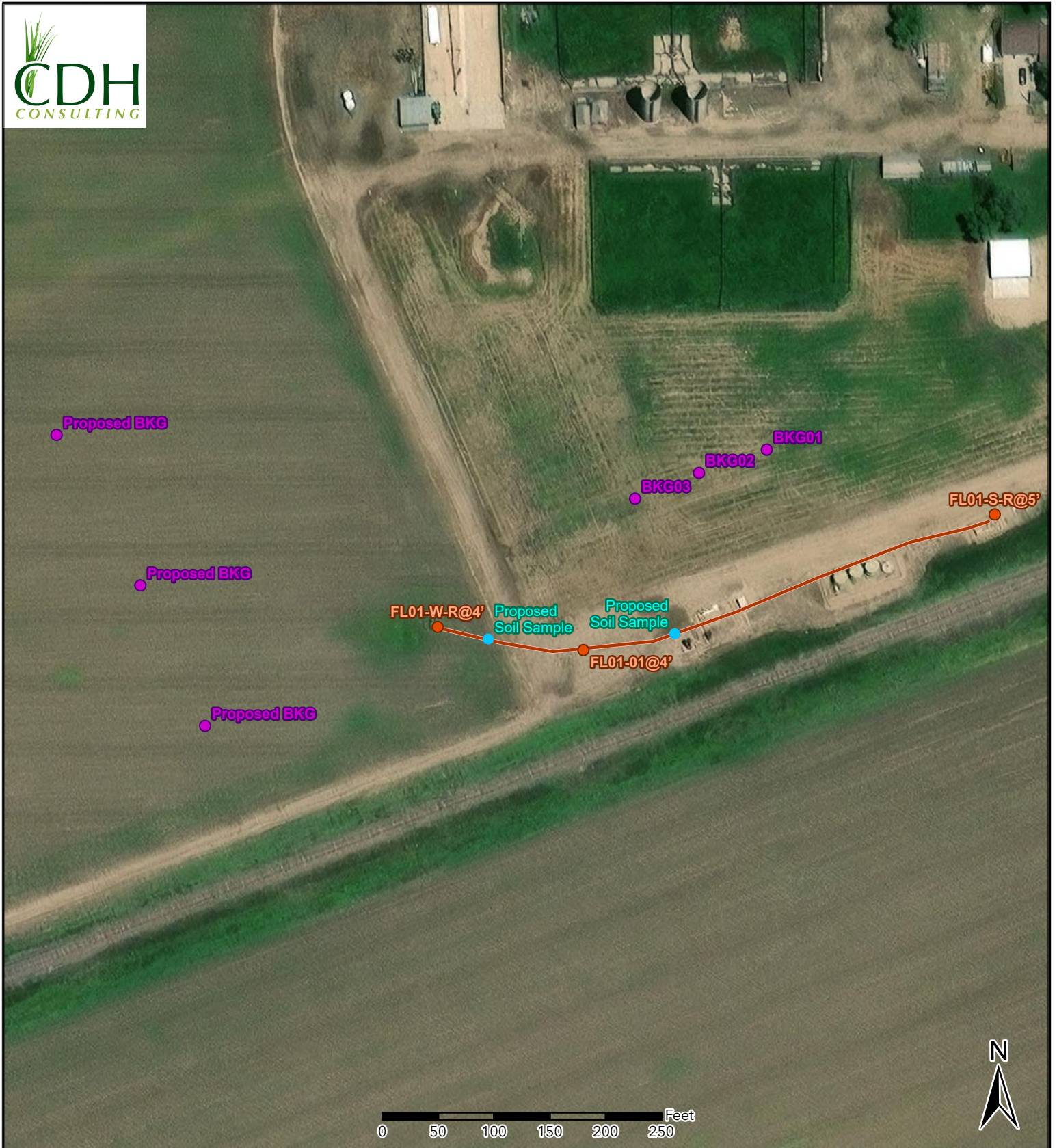


Figure 3 Supplemental Site Investigation Map

MOWERY 19-1
NENE-SEC 19-T8N-R65W
Weld County, Colorado
PDC Energy Inc.

- Soil Sample
- Background Sample
- Proposed Soil Sample
- Flowline Removed



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TABLES

TABLE 1
FIELD DATA SUMMARY TABLE
PDC 69175
MOWERY 19-1, WELD COUNTY, COLORADO
REM # 38063

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
FL01-W-R@4'	7/2/2025	4	40.382879	-104.585822	1.006380	1.1
FL01-S-R@5'	7/2/2025	5	40.383141	-104.584027	0.974674	0.9
FL01-01@4'	7/2/2025	4	40.382818	-104.585353	0.882137	0.3
BKG01@4.5	7/3/2025	4.5	40.383306	-104.584757	0.822476	0.1
BKG02@4.5	7/3/2025	4.5	40.383251	-104.584976	0.822736	0.1
BKG03@4.5	7/3/2025	4.5	40.383189	-104.585183	0.832924	0.2

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

ft = Feet

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
PDC 69175
MOWERY 19-1, WELD COUNTY, COLORADO
REM # 38063

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**		
FL01-W-R@4'	7/2/2025	4	<0.00100	<0.0100	<0.0100	<0.100	<0.00500	<0.00500	<0.00300	<8.100	<0.100	<4.00	<4.00
FL01-S-R@5'	7/2/2025	5	<0.00100	<0.0100	<0.0100	<0.100	<0.00500	<0.00500	<0.00300	<8.100	<0.100	<4.00	<4.00
FL01-01@4'	7/2/2025	4	<0.00100	<0.0100	<0.0100	<0.100	<0.00500	<0.00500	<0.00300	<8.100	<0.100	<4.00	<4.00

1. Bold values 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
- (<) = 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

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
PDC 69175
MOWERY 19-1, WELD COUNTY, COLORADO
REM # 38063

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
FL01-W-R@4'	7/2/2025	4	<0.0330	<0.0330	<0.00600	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.00300	<0.0120
FL01-S-R@5'	7/2/2025	5	<0.0330	<0.0330	<0.00600	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.00300	<0.0120
FL01-01@4'	7/2/2025	4	<0.0330	<0.0330	<0.00600	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.0330	<0.00300	<0.0120

1. Bold values 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. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).

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

mg/kg = Milligrams per kilogram

ft = Feet

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
PDC 69175
MOWERY 19-1, WELD COUNTY, COLORADO
REM # 38063

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
FL01-W-R@4'	7/2/2025	4	7.99	0.522	1.80	<0.100
FL01-S-R@5'	7/2/2025	5	8.03	0.340	0.374	<0.100
FL01-01@4'	7/2/2025	4	8.07	0.582	1.68	<0.100
BKG01@4.5	7/3/2025	4.5	8.40	0.523	4.47	<0.100
BKG02@4.5	7/3/2025	4.5	8.33	0.421	2.22	<0.100
BKG03@4.5	7/3/2025	4.5	8.06	1.60	8.41	<0.100
Maximum Background Concentration			8.40	1.60	8.41	NA

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.

2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.

3. Brown highlighted soil analytical values indicate a regulatory exceedance.

4. Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).

ft = Feet

EC = Electrical Conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligrams per liter

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

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
PDC 69175
MOWERY 19-1, WELD COUNTY, COLORADO
REM # 38063

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
FL01-W-R@4'	7/2/2025	4	4.02	163	0.734	<0.198*	17.4	15.8	12.9	0.606	<0.500	72.3
FL01-S-R@5'	7/2/2025	5	2.68	86.3	0.154	0.285	<10.0	<10.0	<10.0	0.340	<0.500	<50.0
FL01-01@4'	7/2/2025	4	2.01	62.8	0.103	<0.193*	<10.0	<10.0	<10.0	0.357	<0.500	<50.0
BKG01@4.5	7/3/2025	4.5	1.78	64.2	<0.100	0.202	<10.0	<10.0	<10.0	0.413	<0.500	<50.0
BKG02@4.5	7/3/2025	4.5	2.70	60.0	<0.100	0.205	<10.0	<10.0	<10.0	0.389	<0.500	<50.0
BKG03@4.5	7/3/2025	4.5	2.97	218	0.177	<0.200*	15.4	12.7	15.1	0.388	<0.500	67.9
1.25x Maximum Background Concentration			3.71	273	0.221	0.256	19.3	15.9	18.88	0.516	NA	84.9

- 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) and native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.
- Samples are reported as dry weight unless otherwise indicated in the laboratory PDF report(s).

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

mg/kg = Milligrams per kilogram

ft = Feet

* Indicates laboratory minimum detection limit in excess of SSL



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PHOTOGRAPHIC LOG

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025



Photo 1: View of FL01-W-R sample location, facing south.

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025



Photo 2: View of FL01-S-R sample location, facing northeast.

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025



Photo 3: View of FL01-01 sample location, facing south.

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025



Photo 4: View of BKG01 sample location, facing southeast.

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025

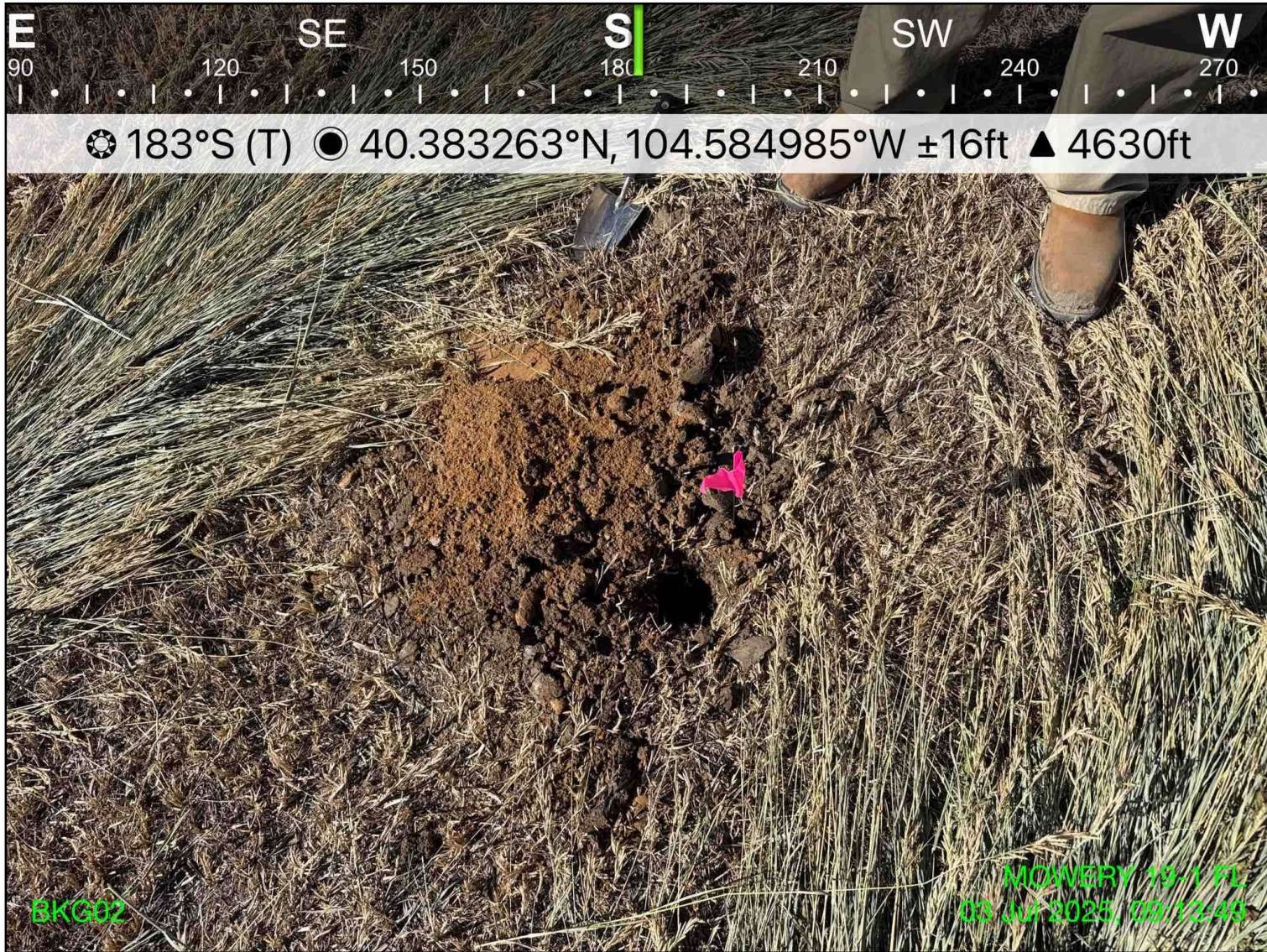


Photo 5: View of BKG02 sample location, facing south.

Photographic Log
MOWERY 19-1 – REM #38063
PDC Energy, Inc.
7/2/2025 & 7/3/2025



Photo 6: View of BKG03 sample location, facing east-southeast.



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FLOWLINE CLOSURE CHECKLIST

Flowline Closure Checklist

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

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: MOWERY 19-1 #245538		Date: 07/02/2025			Remediation Project #: 38063			
Associated Wells:		Age of Site: 05/31/1987			Number of Photos Attached: 6			
Starting point: Point A: 40.38287488, -104.58581423 (Wellhead riser)								
End point: Point B: 40.38312384, -104.58404703 (Separator riser)								
USCS Soil Type: Fine-grained clay (CH)					Estimated Depth to Groundwater: Groundwater not encountered.			
Hydrocarbon Impacted Soils / Spills : Not observed								
Salt Crusted Soils or Impacted Vegetation: Not observed								
Flowlines								
Flowline type	Multiphase							
Depth	4'							
Age	5/31/1987							
Length	513'							
Construction Material	Steel							
Were flowlines pulled?	Yes							
Visual Integrity of lines	Good							
Visual impacts if trenched	Not observed							
PID Readings if trenched	0.3-1.1 ppm							
Sample taken? Location/Sample ID#	Yes, see attached							
Photo Number(s)	See attached							
Other observations regarding on location flowlines: Flowline completely removed.								
Summary								
Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: 3					Total number of samples collected: 3			
Highest PID Reading: 1.1 ppm					Total number of samples submitted to lab for analysis: 3			
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? 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:								