



PDC Energy, Inc.
Second Quarter 2022 Groundwater Monitoring Summary

May 17, 2022

Former Loloff 35-5 Tank Battery
NENE Section 35 T5N R64W
Remediation # 19818

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Loloff 35-5 tank battery.

Site History and Background

On October 15, 2021, a historic hydrocarbon release was discovered beneath the former separator during decommissioning activities. Following the discovery, mitigation activities were initiated and between October 15, and December 3, 2021, approximately 980 cubic yards of impacted material were removed from the former excavation. During excavation activities, groundwater was encountered in the excavation at approximately 3 feet below ground surface (bgs). Groundwater vacuum recovery was conducted concurrent with excavation activities and approximately 220 barrels (bbls) of groundwater were removed from location.

Monitoring Well Installation and Supplemental Site Investigation Activities

On April 14, and April 15, 2022, seventeen (17) monitoring wells (BH01 – BH17) were installed to confirm the absence of dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent. Lithologic descriptions and volatile organic compound (VOC) concentrations measured using a photoionization detector (PID) were recorded for each monitoring well. One soil sample was collected from each soil boring at approximately 2.5 feet bgs to assess soil suitability parameters for reclamation. Seventeen soil samples were submitted to Summit Scientific Laboratory (Summit) for analysis of pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron. Additional soil samples were collected from each soil boring at the observed water table interface and at intervals that exhibited elevated VOC concentrations at depths ranging from 3.5 feet to 5 feet bgs. Eighteen soil samples were submitted to Summit for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, total petroleum hydrocarbons (TPH)[C6-C36], 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, anthracene, chrysene, fluorene, 1-methylnaphthalene (M), and SAR. Additionally, 2 background soil borings (BKG02 – BKG03) were advanced in native soil to a depth of approximately five feet bgs. Six background

samples were collected from depths ranging from 2.5 to 5 feet bgs and were submitted to Summit for laboratory analysis of pH, EC, SAR, and boron.

Soil analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 regulatory standards in all sample locations. Additionally, SAR, and boron were in compliance with the applicable regulatory standards in all sample locations. pH and EC concentrations were in exceedance of the applicable regulatory standards and greater than the background concentration in soil borings BH08, BH10, BH11, BH13, and BH15 – BH17. Background soil boring locations are illustrated on Figure 1. Soil analytical results are summarized in Tables 1 and 2. GPS coordinates and field observed VOC concentrations are summarized in Table 3. The laboratory analytical reports are included in Attachment A. Boring and well completion logs are included as Attachment B.

Groundwater Monitoring Activities

On April 20, 2022, groundwater monitoring was conducted at all 17 monitoring wells (BH01 – BH17). Seventeen groundwater samples were submitted to Summit for analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0 and total dissolved solids (TDS) by Method SM 2540C.


Second quarter 2022 analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 groundwater standards in all 17 monitoring well locations. Additionally, inorganic parameters were in compliance with the applicable COGCC Table 915-1 regulatory standards or within 1.25x the background concentration of the up- and cross-gradient monitoring wells (BH15 and BH17) in all 17 monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figures 2 and 3. Groundwater elevation data is illustrated on Figure 4. Groundwater analytical results are summarized in Tables 4 and 5. The laboratory analytical report is included in Attachment B.

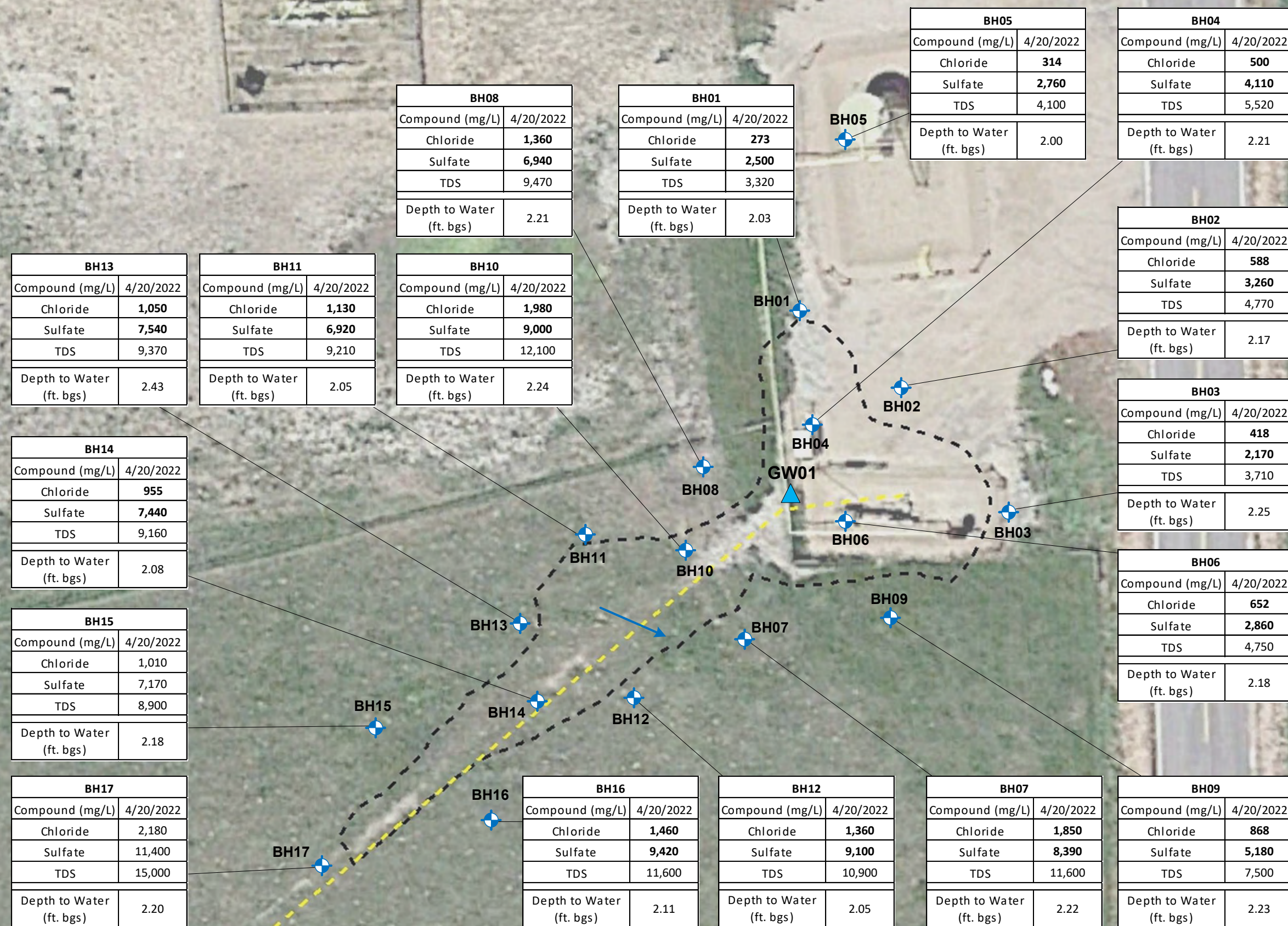
Current Remediation Activities and Path Forward

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the second quarter 2022 and will remain the selected remediation strategy through the third quarter 2022.






Third quarter 2022 groundwater sampling will be conducted in July 2022.



DATE: April 15, 2022	 Tasman, Inc. 6855 W. 119 th Ave. Broomfield, CO 80020	PDC Energy, Inc. – DJ Basin Former Loloff 35-5 Tank Battery NENE, Section 35, Township 5 North, Range 64 West Weld County, Colorado	SOIL BORING LOCATION MAP	FIGURE 1
DESIGNED BY: C. Hamlin				
DRAWN BY: K. Shepherd				



Legend

-  Excavation Extent
(Collected via Trimble GPS)
-  Groundwater Sample Location
-  Underground Flowline Location
(Collected via Trimble GPS)
-  Monitoring Well Location
(Collected via Trimble GPS)
-  Groundwater Flow Direction (2Q22)

Notes

All locations are approximate unless otherwise noted.

mg/L – Micrograms per liter

TDS – Total dissolved solids

Black bold text denotes an exceedance of COGCC Table 915-1 standards, but within 1.25x the BKG concentration

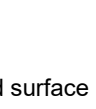
COGCC – Colorado Oil and Gas Conservation Commission

BKG – Background

ft. bgs – Feet below ground surface

GPS – Global Positioning System

0 ft.
25 ft.
50 ft.




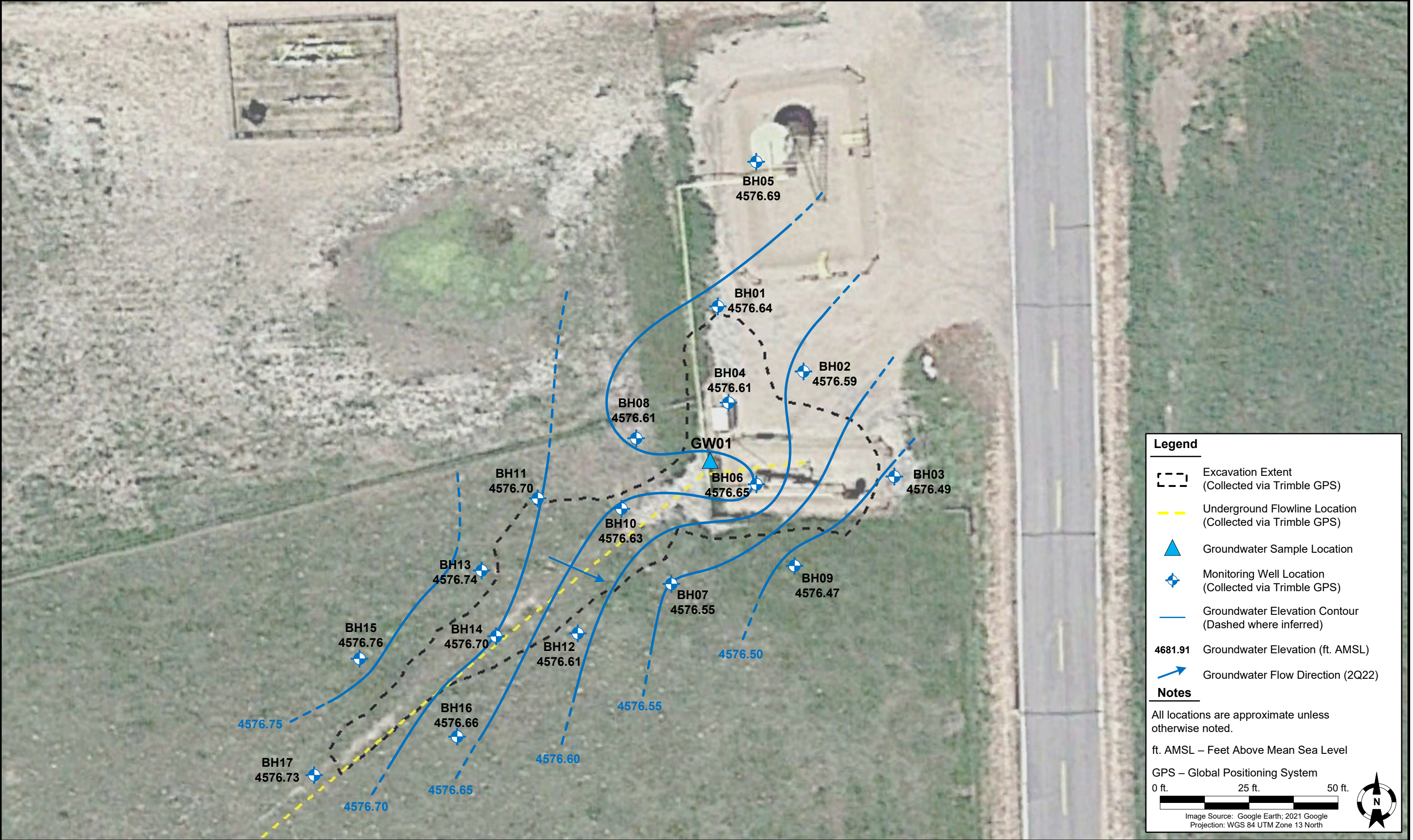


Image Source: Google Earth; 2021 Google
Projection: WGS 84 UTM Zone 13 North





DATE:	June 20, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	J. Marcus



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

PDC Energy, Inc. – DJ Basin
Former Loloff 35-5 Tank Battery
NENE, Section 35, Township 5 North, Range 64 West
Weld County, Colorado

**PROPOSED SOIL BORING
LOCATION MAP**

**FIGURE
5**

TABLE 1
FORMER LOLOFF 35-5 TANK BATTERY SOIL
ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH ⁽⁴⁾ (mg/kg)	Anthracene (mg/kg)	Chrysene (mg/kg)	Fluorene (mg/kg)	1-M (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	1,800	110	240	18
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	5.8	9	0.54	0.006
SS01 @ 3'	10/14/2021	3 ft. bgs	0.11	<0.0050	0.020	<0.010	23	<0.0050	0.25	1,062	0.757	0.170	0.452	2.12
SS02 @ 5'	10/15/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS03 @ 4'	10/15/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS04 @ 2.5'	10/15/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS05 @ 4'	10/15/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS06 @ 2.5'	10/15/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS07 @ 4'	10/18/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS08 @ 2.5'	10/18/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS09 @ 5'	10/18/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS10 @ 4'	10/19/2021	4 ft. bgs	0.0074	<0.0050	<0.0050	<0.010	0.16	<0.0050	0.029	59	<0.00500	<0.00500	<0.00500	<0.00500
SS11 @ 2.5'	10/19/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS12 @ 5'	10/20/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS13 @ 4'	10/20/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	0.00525	<0.00500	<0.00500
SS14 @ 2.5'	10/20/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS15 @ 4'	10/20/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS16 @ 2.5'	10/20/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS17 @ 5'	10/21/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS18 @ 4'	10/21/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	6.3	<0.00500	<0.00500	<0.00500	<0.00500
SS19 @ 2.5'	10/21/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS20 @ 4'	10/21/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS21 @ 2.5'	10/21/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS22 @ 5'	10/21/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS23 @ 4'	10/21/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS24 @ 2.5'	10/21/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS25 @ 5'	10/22/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS26 @ 4'	10/22/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS27 @ 2.5'	10/22/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS28 @ 4'	10/22/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS29 @ 2.5'	10/22/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS30 @ 4'	10/22/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS31 @ 2.5'	10/22/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS32 @ 5'	11/29/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS33 @ 4'	11/30/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS34 @ 2.5'	11/30/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS35 @ 4'	11/30/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS36 @ 2.5'	11/30/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.55	<0.00500	<0.00500	<0.00500	<0.00500
SS37 @ 5'	12/1/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS38 @ 4'	12/1/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	18	<0.00500	<0.00500	<0.00500	<0.00500
SS39 @ 2.5'	12/1/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS40 @ 4'	12/1/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	26	<0.00500	<0.00500	<0.00500	<0.00500
SS41 @ 2.5'	12/1/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS42 @ 4'	12/1/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	5.7	<0.00500	0.00602	<0.00500	<0.00500
SS43 @ 2.5'	12/1/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS44 @ 5'	12/1/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS45 @ 4'	12/2/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS46 @ 2.5'	12/2/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS47 @ 5'	12/2/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS48 @ 4'	12/2/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS49 @ 2.5'	12/2/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS50 @ 4'	12/2/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS51 @ 2.5	12/2/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS52 @ 5'	12/2/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS53 @ 4'	12/2/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS54 @ 2.5'	12/2/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS55 @ 4'	12/2/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00952	<0.00500
SS56 @ 2.5'	12/2/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS57 @ 2.5'	12/3/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS58 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS59 @ 5'	12/3/2021	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS60 @ 2.5'	12/3/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS61 @ 4'	12/3/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
SS62 @ 5'	12/3/2021	5 ft. bgs	<0.00											

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TERH, DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extractable protein

mm/kg = Milligramme pro kg

mg/kg = Milligrams per kilogram
TADR = Trimethylamine

TMB = Tr

$\text{Source} = \text{Source}$

ft. = Feet
bgs = Below ground surface

BOLD = Analytical result is in excess of applicable standard

TABLE 2
FORMER LOLOFF 35-5 TANK BATTERY SOIL
ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
SS01 @ 3'	10/14/2021	3 ft. bgs	8.16	1.34	3.87	0.257
SS51 @ 2.5	12/2/2021	2.5 ft. bgs	8.02	0.336	13.5	1.34
BH01 @ 2.5'	4/14/2022	2.5 ft. bgs	8.01	1.23	0.0408	0.375
BH01 @ 5'	4/14/2022	5 ft. bgs	NA	NA	0.246	NA
BH02 @ 2.5'	4/14/2022	2.5 ft. bgs	8.12	0.946	0.102	0.544
BH02 @ 5'	4/14/2022	5 ft. bgs	NA	NA	0.340	NA
BH03 @ 2.5'	4/14/2022	2.5 ft. bgs	8.24	1.06	0.107	0.731
BH03 @ 4'	4/14/2022	4 ft. bgs	NA	NA	0.0767	NA
BH04 @ 2.5'	4/14/2022	2.5 ft. bgs	7.70	1.24	0.0562	0.396
BH04 @ 5'	4/14/2022	5 ft. bgs	NA	NA	0.313	NA
BH05 @ 2.5'	4/14/2022	2.5 ft. bgs	7.98	1.27	0.150	0.553
BH05 @ 5'	4/14/2022	5 ft. bgs	NA	NA	0.123	NA
BH06 @ 2.5'	4/14/2022	2.5 ft. bgs	7.91	1.47	0.115	0.451
BH06 @ 5'	4/14/2022	5 ft. bgs	NA	NA	0.0757	NA
BH07 @ 2.5'	4/14/2022	2.5 ft. bgs	7.82	5.94	0.366	0.744
BH07 @ 4'	4/14/2022	4 ft. bgs	NA	NA	0.254	NA
BH08 @ 2.5'	4/14/2022	2.5 ft. bgs	8.54	2.33	0.118	0.478
BH08 @ 4'	4/14/2022	4 ft. bgs	NA	NA	0.219	NA
BH09 @ 2.5'	4/14/2022	2.5 ft. bgs	7.66	3.70	0.152	0.605
BH09 @ 4'	4/14/2022	4 ft. bgs	NA	NA	0.156	NA
BH10 @ 2.5'	4/15/2022	2.5 ft. bgs	7.91	8.47	0.474	0.475
BH10 @ 4'	4/15/2022	4 ft. bgs	NA	NA	0.414	NA
BH11 @ 2.5'	4/15/2022	2.5 ft. bgs	7.91	9.92	0.369	0.659
BH11 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.320	NA
BH12 @ 2.5'	4/15/2022	2.5 ft. bgs	8.01	4.58	0.622	0.670
BH12 @ 4'	4/15/2022	4 ft. bgs	NA	NA	0.413	NA
BH13 @ 2.5'	4/15/2022	2.5 ft. bgs	8.03	9.28	0.759	0.924
BH13 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.206	NA
BH14 @ 2.5'	4/15/2022	2.5 ft. bgs	7.84	4.45	0.300	0.405
BH14 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.984	NA
BH14 @ 5'	4/15/2022	5 ft. bgs	NA	NA	0.202	NA
BH15 @ 2.5'	4/15/2022	2.5 ft. bgs	8.04	7.73	0.551	1.05
BH15 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.361	NA

TABLE 2
FORMER LOLOFF 35-5 TANK BATTERY SOIL
ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
BH16 @ 2.5'	4/15/2022	2.5 ft. bgs	7.98	7.67	0.294	0.896
BH16 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.466	NA
BH17 @ 2.5'	4/15/2022	2.5 ft. bgs	7.88	9.77	0.967	0.854
BH17 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.401	NA
BKG02 @ 2.5'	4/14/2022	2.5 ft. bgs	8.02	4.24	0.204	0.777
BKG02 @ 4'	4/14/2022	4 ft. bgs	8.03	3.61	0.236	0.486
BKG02 @ 5'	4/14/2022	5 ft. bgs	8.48	2.50	0.211	0.485
BKG03 @ 2.5'	4/14/2022	4 ft. bgs	8.01	6.20	0.583	0.766
BKG03 @ 4'	4/14/2022	2.5 ft. bgs	8.15	4.26	0.198	0.645
BKG03 @ 5'	4/14/2022	5 ft. bgs	8.15	3.23	0.247	0.423

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

NA = Constituent not analyzed

 = Source

BOLD = Analytical result is in exceedance of applicable standard.

BOLD = Analytical result is in exceedance of applicable standard, but below background concentration

TABLE 3
FORMER LOLOFF 35-5 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS01 @ 3'	10/14/2021	2 ft. bgs	40.362695	-104.507675	1.2	580
SS02 @ 5'	10/15/2021	5 ft. bgs	NC	NC	NC	3.1
SS03 @ 4'	10/15/2021	4 ft. bgs	40.362713	-104.507799	1.3	4.8
SS04 @ 2.5'	10/15/2021	2.5 ft. bgs	40.362713	-104.507799	1.3	3.3
SS05 @ 4'	10/15/2021	4 ft. bgs	40.362670	-104.507768	1.3	1.8
SS06 @ 2.5'	10/15/2021	2.5 ft. bgs	40.362670	-104.507768	1.3	1.4
SS07 @ 4'	10/18/2021	4 ft. bgs	40.362653	-104.507721	1.1	6.5
SS08 @ 2.5'	10/18/2021	2.5 ft. bgs	40.362653	-104.507721	1.1	0.7
SS09 @ 5'	10/18/2021	5 ft. bgs	NC	NC	NC	6.2
SS10 @ 4'	10/19/2021	4 ft. bgs	40.362724	-104.507682	1.2	79.4
SS11 @ 2.5'	10/19/2021	2.5 ft. bgs	40.362724	-104.507682	1.2	0.9
SS12 @ 5'	10/20/2021	5 ft. bgs	NC	NC	NC	0.0
SS13 @ 4'	10/20/2021	4 ft. bgs	40.362663	-104.507639	1.2	6.0
SS14 @ 2.5'	10/20/2021	2.5 ft. bgs	40.362663	-104.507639	1.2	0.2
SS15 @ 4'	10/20/2021	4 ft. bgs	40.362708	-104.507608	1.3	10.3
SS16 @ 2.5'	10/20/2021	2.5 ft. bgs	40.362708	-104.507608	1.3	0.4
SS17 @ 5'	10/21/2021	5 ft. bgs	NC	NC	NC	0.4
SS18 @ 4'	10/21/2021	4 ft. bgs	-104.507771	40.362741	1.1	13.5
SS19 @ 2.5'	10/21/2021	2.5 ft. bgs	-104.507771	40.362741	1.1	0.3
SS20 @ 4'	10/21/2021	4 ft. bgs	-104.507686	40.362757	1.1	0.2
SS21 @ 2.5'	10/21/2021	2.5 ft. bgs	-104.507686	40.362757	1.1	0.1
SS22 @ 5'	10/21/2021	5 ft. bgs	NC	NC	NC	0.3
SS23 @ 4'	10/21/2021	4 ft. bgs	-104.507620	40.362741	1.3	0.3
SS24 @ 2.5'	10/21/2021	2.5 ft. bgs	-104.507620	40.362741	1.3	0.2
SS25 @ 5'	10/22/2021	5 ft. bgs	NC	NC	NC	0.3
SS26 @ 4'	10/22/2021	4 ft. bgs	-104.507702	40.362786	1.5	0.8
SS27 @ 2.5'	10/22/2021	2.5 ft. bgs	-104.507702	40.362786	1.5	0.5
SS28 @ 4'	10/22/2021	4 ft. bgs	-104.507777	40.362782	1.5	0.8
SS29 @ 2.5'	10/22/2021	2.5 ft. bgs	-104.507777	40.362782	1.5	0.5
SS30 @ 4'	10/22/2021	4 ft. bgs	-104.507731	40.362814	1.1	5.8
SS31 @ 2.5'	10/22/2021	2.5 ft. bgs	-104.507731	40.362814	1.1	0.3
BKG01 @ 2.5'	10/26/2021	2.5 ft. bgs	-104.507812	40.362555	1.4	0.2
BKG01 @ 4'	10/26/2021	4 ft. bgs	-104.507812	40.362555	1.4	0.0
BKG01 @ 6'	10/26/2021	6 ft. bgs	-104.507812	40.362555	1.4	0.2
SS32 @ 5'	11/29/2021	5 ft. bgs	NC	NC	NC	2.7
SS33 @ 4'	11/30/2021	4 ft. bgs	40.362639	-104.507820	1	5.9
SS34 @ 2.5'	11/30/2021	2.5 ft. bgs	40.362639	-104.507820	1	2.8
SS35 @ 4'	11/30/2021	4 ft. bgs	NC	NC	NC	21.0
SS36 @ 2.5'	11/30/2021	2.5 ft. bgs	NC	NC	NC	5.1
SS37 @ 5'	12/1/2021	5 ft. bgs	NC	NC	NC	1.3
SS38 @ 4'	12/1/2021	4 ft. bgs	40.362669	-104.507925	1.2	7.3
SS39 @ 2.5'	12/1/2021	2.5 ft. bgs	40.362669	-104.507925	1.2	3.0

TABLE 3
FORMER LOLOFF 35-5 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS40 @ 4'	12/1/2021	4 ft. bgs	40.362644	-104.507963	1.1	9.6
SS41 @ 2.5'	12/1/2021	2.5 ft. bgs	40.362644	-104.507963	1.1	1.1
SS42 @ 4'	12/1/2021	4 ft. bgs	40.362595	-104.507878	1.1	17.8
SS43 @ 2.5'	12/1/2021	2.5 ft. bgs	40.362595	-104.507878	1.1	3.2
SS44 @ 5'	12/1/2021	5 ft. bgs	NC	NC	NC	5.3
SS45 @ 4'	12/2/2021	4 ft. bgs	40.362577	-104.508031	1.1	7.5
SS46 @ 2.5'	12/2/2021	2.5 ft. bgs	40.362577	-104.508031	1.1	4.1
SS47 @ 5'	12/2/2021	5 ft. bgs	NC	NC	NC	4.3
SS48 @ 4'	12/2/2021	4 ft. bgs	40.362555	-104.507950	1	8.3
SS49 @ 2.5'	12/2/2021	2.5 ft. bgs	40.362555	-104.507950	1	2.9
SS50 @ 4'	12/2/2021	4 ft. bgs	40.362519	-104.508089	1.2	3.0
SS51 @ 2.5	12/2/2021	2.5 ft. bgs	40.362519	-104.508089	1.2	1.1
SS52 @ 5'	12/2/2021	5 ft. bgs	NC	NC	NC	3.3
SS53 @ 4'	12/2/2021	4 ft. bgs	40.362511	-104.508052	1.2	22.3
SS54 @ 2.5'	12/2/2021	2.5 ft. bgs	40.362511	-104.508052	1.2	3.9
SS55 @ 4'	12/2/2021	4 ft. bgs	40.362479	-104.508137	1.2	91.1
SS56 @ 2.5'	12/2/2021	2.5 ft. bgs	40.362479	-104.508137	1.2	3.5
SS57 @ 2.5'	12/3/2021	2.5 ft. bgs	40.362780	-104.507782	1.0	0.0
SS58 @ 4'	12/3/2021	4 ft. bgs	40.362780	-104.507782	1.0	1.4
SS59 @ 5'	12/3/2021	5 ft. bgs	40.362780	-104.507782	1.0	1.6
SS60 @ 2.5'	12/3/2021	2.5 ft. bgs	40.362822	-104.507783	1.0	1.0
SS61 @ 4'	12/3/2021	4 ft. bgs	40.362822	-104.507783	1.0	1.5
SS62 @ 5'	12/3/2021	5 ft. bgs	40.362822	-104.507783	1.0	0.9
BH01 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362825	-104.507746	NC	0.2
BH01 @ 5'	4/14/2022	5 ft. bgs	40.362825	-104.507746	NC	0.5
BH02 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362775	-104.507660	NC	0.0
BH02 @ 5'	4/14/2022	5 ft. bgs	40.362775	-104.507660	NC	0.1
BH03 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362693	-104.507569	NC	0.1
BH03 @ 4'	4/14/2022	4 ft. bgs	40.362693	-104.507569	NC	0.0
BH04 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362751	-104.507736	NC	0.1
BH04 @ 5'	4/14/2022	5 ft. bgs	40.362751	-104.507736	NC	0.1
BH05 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362937	-104.507707	NC	0.1
BH05 @ 5'	4/14/2022	5 ft. bgs	40.362937	-104.507707	NC	0.4
BH06 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362688	-104.507707	NC	0.0
BH06 @ 5'	4/14/2022	5 ft. bgs	40.362688	-104.507707	NC	0.4
BH07 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362611	-104.507795	NC	0.0
BH07 @ 4'	4/14/2022	4 ft. bgs	40.362611	-104.507795	NC	0.0
BH08 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362724	-104.507830	NC	0.0
BH08 @ 4'	4/14/2022	4 ft. bgs	40.362724	-104.507830	NC	0.5
BH09 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362625	-104.507671	NC	0.1
BH09 @ 4'	4/14/2022	4 ft. bgs	40.362625	-104.507671	NC	8.1
BH10 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362670	-104.507844	NC	0.3

TABLE 3
FORMER LOLOFF 35-5 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
BH10 @ 4'	4/15/2022	4 ft. bgs	40.362670	-104.507844	NC	243
BH11 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362678	-104.507844	NC	0.7
BH11 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362678	-104.507844	NC	0.8
BH12 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362574	-104.507890	NC	0.1
BH12 @ 4'	4/15/2022	4 ft. bgs	40.362574	-104.507890	NC	0.8
BH13 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362623	-104.507986	NC	0.1
BH13 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362623	-104.507986	NC	0.2
BH14 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362572	-104.507973	NC	0.6
BH14 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362572	-104.507973	NC	0.7
BH14 @ 5'	4/15/2022	5 ft. bgs	40.362572	-104.507973	NC	28.2
BH15 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362555	-104.508110	NC	0.1
BH15 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362555	-104.508110	NC	0.1
BH16 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362495	-104.508012	NC	0.1
BH16 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362495	-104.508012	NC	0.0
BH17 @ 2.5'	4/15/2022	2.5 ft. bgs	40.362465	-104.508156	NC	0.1
BH17 @ 3.5'	4/15/2022	3.5 ft. bgs	40.362465	-104.508156	NC	0.2
BKG02 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362580	-104.508171	NC	0.1
BKG02 @ 4'	4/14/2022	4 ft. bgs	40.362580	-104.508171	NC	0.1
BKG02 @ 5'	4/14/2022	5 ft. bgs	40.362580	-104.508171	NC	0.1
BKG03 @ 2.5'	4/14/2022	2.5 ft. bgs	40.362771	-104.507967	NC	0.0
BKG03 @ 4'	4/14/2022	4 ft. bgs	40.362771	-104.507967	NC	0.1
BKG03 @ 5'	4/14/2022	5 ft. bgs	40.362771	-104.507967	NC	0.0

Notes:

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13

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

bgs = Below ground surface

 = Source material characterization sample

NC = Data not collected

TABLE 4
FORMER LOLOFF 35-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW01	10/15/2021	220	<1.0	10	<2.0	39	400	<1.0	~3	NA
BH01	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.03	4576.64
BH02	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.17	4576.59
BH03	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.25	4576.49
BH04	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.21	4576.61
BH05	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.00	4576.69
BH06	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.18	4576.65
BH07	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.22	4576.55
BH08	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.21	4576.61
BH09	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.23	4576.47
BH10	4/20/2022	<1.0	<1.0	1.2	2.2	<1.0	6.8	<1.0	2.24	4576.63
BH11	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.05	4576.70
BH12	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.13	4576.61
BH13	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.43	4576.74
BH14	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.08	4576.70
BH15	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.18	4576.76
BH16	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.11	4576.66
BH17	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.20	4576.73

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
- Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

ft. = Feet

AMSL = Above Mean Sea Level

NA = Not applicable

BOLD = Analytical result is in exceedance of applicable standard.

TABLE 5
FORMER LOLOFF 35-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH01	4/20/2022	3,320	273	2,500	2.03	4576.64
BH02	4/20/2022	4,770	588	3,260	2.17	4576.59
BH03	4/20/2022	3,710	418	2,170	2.25	4576.49
BH04	4/20/2022	5,520	500	4,110	2.21	4576.61
BH05	4/20/2022	4,100	314	2,760	2.00	4576.69
BH06	4/20/2022	4,750	652	2,860	2.18	4576.65
BH07	4/20/2022	11,600	1,850	8,390	2.22	4576.55
BH08	4/20/2022	9,470	1,360	6,940	2.21	4576.61
BH09	4/20/2022	7,500	868	5,180	2.23	4576.47
BH10	4/20/2022	12,100	1,980	9,000	2.24	4576.63
BH11	4/20/2022	9,210	1,130	6,920	2.05	4576.70
BH12	4/20/2022	10,900	1,360	9,100	2.13	4576.61
BH13	4/20/2022	9,370	1,050	7,540	2.43	4576.74
BH14	4/20/2022	9,160	955	7,440	2.08	4576.70
BH15	4/20/2022	8,900	1,010	7,170	2.18	4576.76
BH16	4/20/2022	11,600	1,460	9,420	2.11	4576.66
BH17	4/20/2022	15,000	2,180	11,400	2.20	4576.73

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
- Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

ft. = Feet

AMSL = Above Mean Sea Level

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

Up- / cross-gradient well location used for background concentration.

BOLD = Analytical result is in exceedance of applicable standard but within 1.25x background concentration.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 17, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Loloff 35-5 Tank Battery

Work Order #2204247

Enclosed are the results of analyses for samples received by Summit Scientific on 04/15/22 16:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, flowing script.

Paul Shrewsbury For Muri Premer
Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH14@5'	2204247-01	Soil	04/15/22 09:21	04/15/22 16:10
BH15@2.5'	2204247-02	Soil	04/15/22 10:27	04/15/22 16:10
BH15@3.5'	2204247-03	Soil	04/15/22 10:38	04/15/22 16:10
BH16@2.5'	2204247-04	Soil	04/15/22 11:36	04/15/22 16:10
BH16@3.5'	2204247-05	Soil	04/15/22 11:44	04/15/22 16:10
BH17@2.5'	2204247-06	Soil	04/15/22 11:32	04/15/22 16:10
BH17@3.5'	2204247-07	Soil	04/15/22 11:40	04/15/22 16:10
BH10@2.5'	2204247-08	Soil	04/15/22 08:33	04/15/22 16:10
BH10@4'	2204247-09	Soil	04/15/22 08:40	04/15/22 16:10
BH11@2.5'	2204247-10	Soil	04/15/22 08:51	04/15/22 16:10
BH11@3.5'	2204247-11	Soil	04/15/22 08:56	04/15/22 16:10
BH12@2.5'	2204247-12	Soil	04/15/22 08:35	04/15/22 16:10
BH12@4'	2204247-13	Soil	04/15/22 08:43	04/15/22 16:10
BH13@2.5'	2204247-14	Soil	04/15/22 10:05	04/15/22 16:10
BH13@3.5'	2204247-15	Soil	04/15/22 10:10	04/15/22 16:10
BH14@2.5'	2204247-16	Soil	04/15/22 09:03	04/15/22 16:10
BH14@3.5'	2204247-17	Soil	04/15/22 09:06	04/15/22 16:10

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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S₂

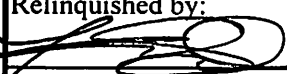
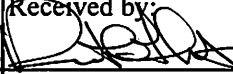
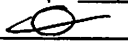
2204247.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 2

Client: PDC Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave. E-Mail: mark.longhurst@PDC.com
City/State/Zip: Broomfield CO 80020
Phone: (303) 487-1228 Project Name: W6FF 35-5 Tank Battery
Sampler Name: Kris Shepherd Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BPAA (B2608)	TPH (C6-C36)	1,2,4,1,3,5,THB	PAHs*	PH, EC	SAR	Boron		
1	BH14@5'	4/15/22	0921	3			X			X				X	X	X	X		X		PAHs = Anthracene, Chrysene, Fluorene, & 1-M
2	BH15@2.5'		1027	1													X	X	X		
3	BH15@3.5'		1038	3										X	X	X		X			
4	BH16@2.5'		1136	1													X	X	X		
5	BH16@3.5'		1144	3										X	X	X		X			
6	BH17@2.5'		1132	1													X	X	X		
7	BH17@3.5'		1140	3										X	X	X					
8																					
9																					
10																					

Relinquished by: 	Date/Time: <u>4/15/22 1500</u>	Received by: 	Date/Time: <u>4/15/22 1610</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: PH, EC, & SAR by saturated paste.
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: <u>4.1</u>	Corrected Temperature <u>4.1</u>	HNO ₃ lot #			
IR gun correction: 	IR gun #: <u>1</u>				

Summit Scientific

2204247.2

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 2 of 2

Client: PDC/Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDCE.com

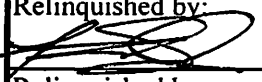
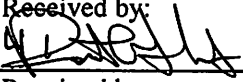
City/State/Zip: Broomfield CO 80020

Phone: (303) 487-1228

Project Name: 1060F 35-5 Tank Battery

Sampler Name: 4/15/22 Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BEHN (6260E)	TPH (66-C30)	1,2,4,6,1,3,5 TMB	PAHs	PAH, EC	SAR	Baron		
1	BH10@2.5'	4/15/22	0833	1			X			X							X	X	X	*PAHs = Anthracene, Chrysene, Fluorene, & I-M.	
2	BH10@4'		0840	3									X	X	X	X		X			
3	BH11@2.5'		0851	1												X	X	X			
4	BH11@3.5'		0856	3									X	X	X	X		X			
5	BH12@2.5'		0835	1												X	X	X			
6	BH12@4'		0843	3									X	X	X	X		X			
7	BH13@2.5'		1005	1												X	X	X			
8	BH13@3.5'		1010	3									X	X	X	X		X			
9	BH14@2.5'		0903	1												X	X	X			
10	BH14@3.5'		0906	3									X	X	X	X		X			
Relinquished by: 		Date/Time: 4/15/22 1510		Received by: 		Date/Time: 4/15/22 1610		Turn Around Time (Check)		Same Day		72 hours		24 hours		Standard		48 hours		Notes: PAH, EC, & SAR by saturated paste.	
Relinquished by:		Date/Time:		Received by:		Date/Time:		Sample Integrity:		Samples Intact: Yes		No									
Temperature Upon Receipt: 4.1		Corrected Temperature 4.1		HNO3 lot #																	
IR gun correction: 0		IR gun #: 1																			

S₂2/2
Sample Receipt Checklist2204247
S2 Work Order#Client: Bochtasman Client Project ID: Woloff 35-5 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #:

	-			
--	---	--	--	--

Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 4.1 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

4.15.22

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@5'
2204247-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0334	83.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0431	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.6	85.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@5'
2204247-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/23/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0155	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0204	61.2 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	159	0.0611	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	8.57	0.0611	"	"	"	"	"	"	
Sodium	9.63	0.0611	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.202	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 09:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@5'
2204247-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH15@2.5'
2204247-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.05	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.84	0.0595	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	10.4	0.0595	"	"	"	"	"	"	
Sodium	10.2	0.0595	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.551	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.73	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH15@2.5'
2204247-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 10:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.04			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH15@3.5'
2204247-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.7	85.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH15@3.5'
2204247-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/23/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.0 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.1	0.0636	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	7.85	0.0636	"	"	"	"	"	"	
Sodium	10.5	0.0636	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.361	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.6		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH15@3.5'
2204247-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH16@2.5'
2204247-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.896	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.1	0.0582	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	4.34	0.0582	"	"	"	"	"	"	
Sodium	5.97	0.0582	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.294	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.67	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH16@2.5'
2204247-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 11:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.98			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH16@3.5'
2204247-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0446	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.0	87.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH16@3.5'
2204247-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/23/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0169	50.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.7	0.0577	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	9.91	0.0577	"	"	"	"	"	"	
Sodium	11.6	0.0577	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.466	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH16@3.5'
2204247-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH17@2.5'
2204247-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.854	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.1	0.0639	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	8.71	0.0639	"	"	"	"	"	"	
Sodium	25.2	0.0639	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.967	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.2		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.77	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH17@2.5'
2204247-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.88			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH17@3.5'
2204247-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0316	78.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.4	82.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH17@3.5'
2204247-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/23/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.1 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.4	0.0638	mg/L dry	1	BFE0167	05/09/22	05/15/22	EPA 6020B	
Magnesium	5.24	0.0638	"	"	"	"	"	"	
Sodium	8.37	0.0638	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.401	0.00100	units	1	BFE0308	05/16/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.4		%	1	BFE0103	05/05/22	05/06/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH17@3.5'
2204247-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH10@2.5'
2204247-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.475	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.5	0.0594	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	6.36	0.0594	"	"	"	"	"	"	
Sodium	8.26	0.0594	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.474	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	8.47	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH10@2.5'
2204247-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 08:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.91			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH10@4'
2204247-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0347	86.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0499	125 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.0	80.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH10@4'
2204247-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/24/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0169	50.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.4 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.1	0.0587	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	5.37	0.0587	"	"	"	"	"	"	
Sodium	7.66	0.0587	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.414	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH10@4'
2204247-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH11@2.5'
2204247-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.659	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	16.0	0.0569	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	4.67	0.0569	"	"	"	"	"	"	
Sodium	6.52	0.0569	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.369	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.9		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.92	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH11@2.5'
2204247-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 08:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.91			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH11@3.5'
2204247-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0306	76.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.5	84.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH11@3.5'
2204247-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/24/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	56.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0203	60.8 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.3	0.0585	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	4.98	0.0585	"	"	"	"	"	"	
Sodium	6.83	0.0585	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.320	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.5		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH11@3.5'
2204247-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH12@2.5'
2204247-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.670	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.24	0.0574	mg/L dry	1	BFD0540	04/25/22	05/15/22	EPA 6020B	
Magnesium	5.73	0.0574	"	"	"	"	"	"	
Sodium	8.66	0.0574	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.622	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.58	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH12@2.5'
2204247-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 08:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.01			pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH12@4'
2204247-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0359	89.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0381	95.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.3	82.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH12@4'
2204247-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/24/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0194	58.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.6 %	40-150		"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.413	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.6		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH13@2.5'
2204247-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.924	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Calculated Analysis

Date Sampled: **04/15/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.759	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.28	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH13@3.5'
2204247-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0348	86.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0371	92.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.6	84.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH13@3.5'
2204247-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/24/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0197	59.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0210	63.0 %	40-150		"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.206	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.8		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@2.5'
2204247-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/15/22 09:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.405	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Calculated Analysis

Date Sampled: **04/15/22 09:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.300	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 09:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/15/22 09:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.45	0.0100	mmhos/cm	1	BFD0560	04/26/22	04/26/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/15/22 09:03**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BFD0559	04/26/22	04/26/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@3.5'
2204247-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0352	04/18/22	04/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0367	91.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0367	91.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0351	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.4	83.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

BH14@3.5'
2204247-17 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0447	04/21/22	04/24/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0147	44.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0136	40.7 %	40-150		"	"	"	"	

Calculated Analysis

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.984	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0352 - EPA 5030 Soil MS

Blank (BFD0352-BLK1)

Prepared: 04/18/22 Analyzed: 04/24/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0344		"	0.0400		86.0	50-150			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.1	50-150			

LCS (BFD0352-BS1)

Prepared: 04/18/22 Analyzed: 04/24/22

Benzene	0.0562	0.0020	mg/kg	0.0750		74.9	70-130			
Toluene	0.0587	0.0050	"	0.0750		78.3	70-130			
Ethylbenzene	0.0535	0.0050	"	0.0750		71.4	70-130			
m,p-Xylene	0.114	0.010	"	0.150		76.2	70-130			
o-Xylene	0.0640	0.0050	"	0.0750		85.3	70-130			
1,2,4-Trimethylbenzene	0.0613	0.0050	"	0.0750		81.8	70-130			
1,3,5-Trimethylbenzene	0.0565	0.0050	"	0.0750		75.3	70-130			
Naphthalene	0.0801	0.0038	"	0.0750		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.7	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	50-150			

Matrix Spike (BFD0352-MS1)

Source: 2204242-01

Prepared: 04/18/22 Analyzed: 04/24/22

Benzene	0.0578	0.0020	mg/kg	0.0750	ND	77.0	70-130			
Toluene	0.0624	0.0050	"	0.0750	ND	83.2	70-130			
Ethylbenzene	0.0611	0.0050	"	0.0750	ND	81.5	70-130			
m,p-Xylene	0.130	0.010	"	0.150	ND	86.9	70-130			
o-Xylene	0.0721	0.0050	"	0.0750	ND	96.1	70-130			
1,2,4-Trimethylbenzene	0.0688	0.0050	"	0.0750	ND	91.7	70-130			
1,3,5-Trimethylbenzene	0.0653	0.0050	"	0.0750	ND	87.0	70-130			
Naphthalene	0.0837	0.0038	"	0.0750	ND	112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.7	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.6	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0352 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0352-MSD1)		Source: 2204242-01			Prepared: 04/18/22 Analyzed: 04/24/22					
Benzene	0.0561	0.0020	mg/kg	0.0750	ND	74.8	70-130	2.90	30	
Toluene	0.0592	0.0050	"	0.0750	ND	78.9	70-130	5.23	30	
Ethylbenzene	0.0555	0.0050	"	0.0750	ND	74.0	70-130	9.62	30	
m,p-Xylene	0.119	0.010	"	0.150	ND	79.3	70-130	9.15	30	
o-Xylene	0.0668	0.0050	"	0.0750	ND	89.1	70-130	7.56	30	
1,2,4-Trimethylbenzene	0.0632	0.0050	"	0.0750	ND	84.3	70-130	8.36	30	
1,3,5-Trimethylbenzene	0.0588	0.0050	"	0.0750	ND	78.4	70-130	10.4	30	
Naphthalene	0.0909	0.0038	"	0.0750	ND	121	70-130	8.28	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.0	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	50-150			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFD0351 - EPA 3550A

Blank (BFD0351-BLK1)

Prepared & Analyzed: 04/18/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0351-BS1)

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	482	50	mg/kg	500	96.5	70-130
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Matrix Spike (BFD0351-MS1)

Source: 2204242-01

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	463	50	mg/kg	500	11.4	90.4	70-130
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Matrix Spike Dup (BFD0351-MSD1)

Source: 2204242-01

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	442	50	mg/kg	500	11.4	86.1	70-130	4.71	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0447 - EPA 5030 Soil MS

Blank (BFD0447-BLK1)

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.7	40-150			
Surrogate: Fluoranthene-d10	0.0262		"	0.0333		78.7	40-150			

LCS (BFD0447-BS1)

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0284	0.00500	mg/kg	0.0333		85.1	31-137			
Anthracene	0.0293	0.00500	"	0.0333		87.8	30-120			
Benzo (a) anthracene	0.0287	0.00500	"	0.0333		86.1	30-120			
Benzo (a) pyrene	0.0256	0.00500	"	0.0333		76.8	30-120			
Benzo (b) fluoranthene	0.0284	0.00500	"	0.0333		85.2	30-120			
Benzo (k) fluoranthene	0.0284	0.00500	"	0.0333		85.1	30-120			
Chrysene	0.0283	0.00500	"	0.0333		84.8	30-120			
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333		42.9	30-120			
Fluoranthene	0.0288	0.00500	"	0.0333		86.3	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0102	0.00500	"	0.0333		30.7	30-120			
Pyrene	0.0288	0.00500	"	0.0333		86.3	35-142			
1-Methylnaphthalene	0.0313	0.00500	"	0.0333		93.9	35-142			
2-Methylnaphthalene	0.0260	0.00500	"	0.0333		77.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0268		"	0.0333		80.5	40-150			
Surrogate: Fluoranthene-d10	0.0291		"	0.0333		87.3	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0447 - EPA 5030 Soil MS

Matrix Spike (BFD0447-MS1)

Source: 2204247-01

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0228	0.00500	mg/kg	0.0333	ND	68.4	31-137		
Anthracene	0.0235	0.00500	"	0.0333	ND	70.6	30-120		
Benzo (a) anthracene	0.0252	0.00500	"	0.0333	ND	75.6	30-120		
Benzo (a) pyrene	0.0195	0.00500	"	0.0333	ND	58.6	30-120		
Benzo (b) fluoranthene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.0	30-120		
Chrysene	0.0305	0.00500	"	0.0333	ND	91.6	30-120		
Dibenz (a,h) anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120		
Fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Fluorene	0.0334	0.00500	"	0.0333	0.0155	53.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.6	30-120		
Pyrene	0.0255	0.00500	"	0.0333	ND	76.4	35-142		
1-Methylnaphthalene	0.0142	0.00500	"	0.0333	ND	42.6	15-130		
2-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	53.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0185		"	0.0333		55.5	40-150		
Surrogate: Fluoranthene-d10	0.0250		"	0.0333		74.9	40-150		

Matrix Spike Dup (BFD0447-MSD1)

Source: 2204247-01

Prepared: 04/21/22 Analyzed: 04/23/22

Acenaphthene	0.0265	0.00500	mg/kg	0.0333	ND	79.5	31-137	15.0	30
Anthracene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	13.1	30
Benzo (a) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120	12.8	30
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	18.2	30
Benzo (b) fluoranthene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	11.7	30
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120	13.1	30
Chrysene	0.0273	0.00500	"	0.0333	ND	81.8	30-120	11.3	30
Dibenz (a,h) anthracene	0.0183	0.00500	"	0.0333	ND	54.8	30-120	14.0	30
Fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	12.2	30
Fluorene	0.0262	0.00500	"	0.0333	0.0155	31.9	30-120	24.3	30
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.2	30-120	11.9	30
Pyrene	0.0281	0.00500	"	0.0333	ND	84.2	35-142	9.80	30
1-Methylnaphthalene	0.0107	0.00500	"	0.0333	ND	32.1	15-130	28.3	50
2-Methylnaphthalene	0.0137	0.00500	"	0.0333	ND	41.1	15-130	26.9	50
Surrogate: 2-Methylnaphthalene-d10	0.0154		"	0.0333		46.1	40-150		
Surrogate: Fluoranthene-d10	0.0224		"	0.0333		67.2	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0425 - EPA 3050B

Blank (BFD0425-BLK1)

Prepared: 04/20/22 Analyzed: 04/24/22

Boron ND 0.0100 mg/L

LCS (BFD0425-BS1)

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.03 0.0100 mg/L 5.00 101 80-120

Duplicate (BFD0425-DUP1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 1.05 0.0100 mg/L 1.05 0.585 20

Matrix Spike (BFD0425-MS1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.64 0.0100 mg/L 5.00 1.05 91.8 75-125

Matrix Spike Dup (BFD0425-MSD1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.83 0.0100 mg/L 5.00 1.05 95.6 75-125 3.34 25

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0540 - General Preparation

Blank (BFD0540-BLK1)

Prepared: 04/25/22 Analyzed: 05/02/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFD0540-BS1)

Prepared: 04/25/22 Analyzed: 05/02/22

Calcium	3.60	0.0500	mg/L wet	5.00	72.1	70-130
Magnesium	5.44	0.0500	"	5.00	109	70-130
Sodium	5.14	0.0500	"	5.00	103	70-130

Batch BFE0167 - General Preparation

Blank (BFE0167-BLK1)

Prepared: 05/09/22 Analyzed: 05/16/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFE0167-BS1)

Prepared: 05/09/22 Analyzed: 05/16/22

Calcium	5.85	0.0500	mg/L wet	5.00	117	70-130
Magnesium	6.05	0.0500	"	5.00	121	70-130
Sodium	5.69	0.0500	"	5.00	114	70-130

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0494 - General Preparation

Duplicate (BFD0494-DUP1) **Source: 2204247-01** Prepared: 04/22/22 Analyzed: 04/26/22

% Solids	81.7		%		81.8			0.0806	20	
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Batch BFE0103 - General Preparation

Duplicate (BFE0103-DUP1) **Source: 2204247-07** Prepared: 05/05/22 Analyzed: 05/06/22

% Solids	76.3		%		78.4			2.70	20	
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0560 - General Preparation

Blank (BFD0560-BLK1)

Prepared & Analyzed: 04/26/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0560-BS1)

Prepared & Analyzed: 04/26/22

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

Duplicate (BFD0560-DUP1)

Source: 2204247-02

Prepared & Analyzed: 04/26/22

Specific Conductance (EC) 7.49 0.0100 mmhos/cm 7.73 3.17 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0559 - General Preparation

LCS (BFD0559-BS1)

Prepared & Analyzed: 04/26/22

pH	9.13	pH Units	9.18	99.5	95-105
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Duplicate (BFD0559-DUP1)

Source: 2204247-02

Prepared & Analyzed: 04/26/22

pH	8.01	pH Units	8.04	0.374	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/17/22 15:03

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 05, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Loloff 35-5 Tank Battery

Work Order #2204252

Enclosed are the results of analyses for samples received by Summit Scientific on 04/15/22 16:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Muri Premer

Project Manager



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@2.5'	2204252-01	Soil	04/14/22 08:56	04/15/22 16:10
BH02@2.5'	2204252-02	Soil	04/14/22 08:52	04/15/22 16:10
BH03@2.5'	2204252-03	Soil	04/14/22 09:12	04/15/22 16:10
BH04@2.5'	2204252-04	Soil	04/14/22 09:15	04/15/22 16:10
BH03@4'	2204252-05	Soil	04/14/22 09:17	04/15/22 16:10
BH02@5'	2204252-06	Soil	04/14/22 10:53	04/15/22 16:10
BH01@5'	2204252-07	Soil	04/14/22 11:30	04/15/22 16:10
BH04@5'	2204252-08	Soil	04/14/22 12:00	04/15/22 16:10
BH05@2.5'	2204252-09	Soil	04/14/22 12:25	04/15/22 16:10
BH05@5'	2204252-10	Soil	04/14/22 12:35	04/15/22 16:10
BH07@2.5'	2204252-11	Soil	04/14/22 14:10	04/15/22 16:10
BH07@4'	2204252-12	Soil	04/14/22 14:12	04/15/22 16:10
BH06@2.5'	2204252-13	Soil	04/14/22 14:20	04/15/22 16:10
BH06@5'	2204252-14	Soil	04/14/22 14:43	04/15/22 16:10
BH08@2.5'	2204252-15	Soil	04/14/22 14:25	04/15/22 16:10
BH08@4'	2204252-16	Soil	04/14/22 14:30	04/15/22 16:10
BH09@2.5'	2204252-17	Soil	04/14/22 14:40	04/15/22 16:10
BH09@4'	2204252-18	Soil	04/14/22 14:50	04/15/22 16:10
BKG02@2.5'	2204252-19	Soil	04/14/22 13:25	04/15/22 16:10
BKG02@4'	2204252-20	Soil	04/14/22 13:30	04/15/22 16:10
BKG02@5'	2204252-21	Soil	04/14/22 13:35	04/15/22 16:10
BKG03@2.5'	2204252-22	Soil	04/14/22 13:45	04/15/22 16:10
BKG03@4'	2204252-23	Soil	04/14/22 13:48	04/15/22 16:10
BKG03@5'	2204252-24	Soil	04/14/22 13:50	04/15/22 16:10

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2204252.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 3

Client: PDC/Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave.

E-Mail: Mark.Longhurst@PDC.com

City/State/Zip: Broomfield CO 80020



Phone: (303) 487-1228

Project Name: Loloff 35-5 Tank Battery

Sampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BODN	TH(6-C26)	1,2,4,1,3,5-TMB	PH, EC	SAR	Boron	PAHS			
1	BH01@2.5'	4/14/22	0856	1			X			X							X	X	X			* PAHS = Anthracene, Chrysene, fluorene, 2,1-M.
2	BH02@2.5'		0852	1													X	X	X			
3	BH03@2.5'		0912	1													X	X	X			
4	BH04@2.5'		0915	1													X	X	X			
5	BH03@4'		0917	3										X	X	X		X		X		
6	BH02@5'		1053	3										X	X	X		X		X		
7	BH01@5'		1130	3										X	X	X		X		X		
8	BH04@5'		1200	3										X	X	X		X		X		
9	BH05@2.5'	✓	1225	1													X	X	X			
10	BH05@5'		1235	3										X	X	X		X		X		

Relinquished by: 	Date/Time: 4/14/22 1755	Received by: 	Date/Time: 4/15/22 1610	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: PH, EC, & SAR by Saturated paste.
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: 4.1	Corrected Temperature 4.1	HNO ₃ lot #			
IR gun correction: 0	IR gun #: 1				

Summit Scientific

2204252.2

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 2 of 3

Client: PDC/Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: mark.longhurst@PDC.com



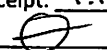
City/State/Zip: Broomfield CO 80020

Phone: (303)487-1228

Project Name: Loloff 35-5 Tank Battery

Sampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX (GWS)	TPH (GWS)	1,2,4,1,3,5 TMB	PAHs	PH, EC	SAR	Boron		
1	BH07@2.5'	4/12/22	1410	1			X			X							X	X	X		PAHs = Anthracene, Chrysene, Fluorene, 2,1-M
2	BH07@4'		1412	3									X	X	X	X	X	X			
3	BH06@2.5'		1420	1												X	X	X			
4	BH06@5'		1443	3									X	X	X	X	X	X			
5	BH08@2.5'		1425	1												X	X	X			
6	BH08@4'		1430	3									X	X	X	X	X	X			
7	BH09@2.5'		1440	1												X	X	X			
8	BH09@4'		1450	3									X	X	X	X	X	X			
9	BKG02@2.5'	✓	1325	1												X	X	X			
10	BKG02@4'	✓	1330	1												X	X	X			
Relinquished by: 		Date/Time: 4/14/22 1755		Received by: 		Date/Time: 4/15/22 1610		Turn Around Time (Check)		Same Day		72 hours		Standard		X		Notes: PH, EC, & SAR by saturated paste.			
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours		48 hours		Sample Integrity:		Samples Intact: Yes No							
Temperature Upon Receipt: 4.1		Corrected Temperature: 4.1		HNO3 lot #																	
IR gun correction: 		IR gun #: 1																			

S_2

2204252.3

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave.

E-Mail: mark.loughurst@PDCE.com

City/State/Zip: Broomfield CO 80020

Phone: 1303 487-1228

Project Name: Woloff 35-5 Tank Battery

Sampler Name: Kris Shepherd

Project Number:

[illegible]

S₂

3/3
Sample Receipt Checklist

S2 Work Order# 2204252

Client: DOC/Tasman Client Project ID: LoLoff 35-S Tank Battery

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

	-			
--	---	--	--	--

Matrix (Check all that apply) Air ☐ Spill/Solid ☒ Water ☐ Other ☐

Temp (°C) 4.1 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			on ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

[Signature]
Custodian Printed Name

4.15.22
Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH01@2.5'
2204252-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.375	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	53.6	0.0619	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	7.27	0.0619	"	"	"	"	"	"	
Sodium	1.20	0.0619	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0408	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.23	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH01@2.5'
2204252-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 08:56**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.01			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH02@2.5'
2204252-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.544	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	5.99	0.0589	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.06	0.0589	"	"	"	"	"	"	
Sodium	1.32	0.0589	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.102	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.946	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH02@2.5'
2204252-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.12			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH03@2.5'
2204252-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.731	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.4	0.0649	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	13.1	0.0649	"	"	"	"	"	"	
Sodium	3.26	0.0649	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.107	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.1		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.06	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH03@2.5'
2204252-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 09:12**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.24			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH04@2.5'
2204252-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.396	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.48	0.0611	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	3.21	0.0611	"	"	"	"	"	"	
Sodium	0.605	0.0611	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0562	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.24	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH04@2.5'
2204252-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 09:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.70			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH03@4'
2204252-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH03@4'
2204252-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.5 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	7.38	0.0564	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	3.65	0.0564	"	"	"	"	"	"	
Sodium	1.02	0.0564	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0767	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH03@4'
2204252-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.6	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH02@5'
2204252-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		91.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH02@5'
2204252-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.6 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1.78	0.0592	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	2.61	0.0592	"	"	"	"	"	"	
Sodium	3.04	0.0592	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.340	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH02@5'
2204252-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.4	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH01@5'
2204252-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		90.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH01@5'
2204252-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.3 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2.08	0.0635	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	3.52	0.0635	"	"	"	"	"	"	
Sodium	2.51	0.0635	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.246	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH01@5'
2204252-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	78.8	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH04@5'
2204252-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		84.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH04@5'
2204252-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		55.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		40.7 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2.08	0.0604	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	3.25	0.0604	"	"	"	"	"	"	
Sodium	3.11	0.0604	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.313	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH04@5'
2204252-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	82.8	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH05@2.5'
2204252-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.553	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	7.93	0.0582	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	6.62	0.0582	"	"	"	"	"	"	
Sodium	2.38	0.0582	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.150	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.27	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH05@2.5'
2204252-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.98			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH05@5'
2204252-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH05@5'
2204252-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.5 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6.98	0.0617	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.72	0.0617	"	"	"	"	"	"	
Sodium	1.72	0.0617	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.123	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH05@5'
2204252-10 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.0	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH07@2.5'
2204252-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.744	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.0	0.0602	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	7.17	0.0602	"	"	"	"	"	"	
Sodium	6.48	0.0602	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.366	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.1		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.94	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH07@2.5'
2204252-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.82			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH07@4'
2204252-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		80.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH07@4'
2204252-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.7 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.1	0.0626	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.65	0.0626	"	"	"	"	"	"	
Sodium	4.69	0.0626	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.254	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH07@4'
2204252-12 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.8	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH06@2.5'
2204252-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.451	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4.86	0.0605	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.04	0.0605	"	"	"	"	"	"	
Sodium	1.42	0.0605	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.115	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.6		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.47	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH06@2.5'
2204252-13 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.91			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH06@5'
2204252-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH06@5'
2204252-14 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		46.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.4 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3.76	0.0599	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	3.31	0.0599	"	"	"	"	"	"	
Sodium	0.835	0.0599	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0757	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH06@5'
2204252-14 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.4	%	1	BFD0467	04/21/22	04/21/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH08@2.5'
2204252-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.478	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.8	0.0574	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.67	0.0574	"	"	"	"	"	"	
Sodium	2.16	0.0574	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.118	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BFD0467	04/21/22	04/21/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.33	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH08@2.5'
2204252-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 14:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.54			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH08@4'
2204252-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/19/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH08@4'
2204252-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.6 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.56	0.0570	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.24	0.0570	"	"	"	"	"	"	
Sodium	3.13	0.0570	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.219	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH08@4'
2204252-16 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.6	%	1	BFD0494	04/22/22	04/26/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH09@2.5'
2204252-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.605	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	7.95	0.0588	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	6.05	0.0588	"	"	"	"	"	"	
Sodium	2.34	0.0588	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.152	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.1		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.70	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH09@2.5'
2204252-17 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.66			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH09@4'
2204252-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFD0345	04/18/22	04/20/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		90.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFD0346	04/18/22	04/19/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH09@4'
2204252-18 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	BFD0364	04/19/22	04/20/22	EPA 8270D SIM	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.0 %	40-150		"	"	"	"	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.36	0.0572	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	5.35	0.0572	"	"	"	"	"	"	
Sodium	2.35	0.0572	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.156	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BH09@4'
2204252-18 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	87.4	%	1	BFD0494	04/22/22	04/26/22	Calculation
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@2.5'
2204252-19 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.777	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.97	0.0583	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.75	0.0583	"	"	"	"	"	"	
Sodium	3.03	0.0583	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.204	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.24	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@2.5'
2204252-19 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.02			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@4'
2204252-20 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.486	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	10.1	0.0628	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	4.48	0.0628	"	"	"	"	"	"	
Sodium	3.58	0.0628	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.236	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.7		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.61	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@4'
2204252-20 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.03			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@5'
2204252-21 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.485	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	7.46	0.0580	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	5.21	0.0580	"	"	"	"	"	"	
Sodium	3.07	0.0580	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.211	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.50	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG02@5'
2204252-21 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.48			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@2.5'
2204252-22 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.766	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6.99	0.0614	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	8.32	0.0614	"	"	"	"	"	"	
Sodium	9.63	0.0614	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.583	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.5		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.20	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@2.5'
2204252-22 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.01			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@4'
2204252-23 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.645	0.0100	mg/L	1	BFD0425	04/20/22	04/24/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.2	0.0634	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	8.42	0.0634	"	"	"	"	"	"	
Sodium	5.30	0.0634	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.198	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.9		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.26	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@4'
2204252-23 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.15			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@5'
2204252-24 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.423	0.0100	mg/L	1	BFD0461	04/21/22	04/29/22	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.4	0.0645	mg/L dry	1	BFD0498	04/22/22	05/01/22	EPA 6020B	
Magnesium	7.22	0.0645	"	"	"	"	"	"	
Sodium	4.85	0.0645	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.247	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.5		%	1	BFD0494	04/22/22	04/26/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.23	0.0100	mmhos/cm	1	BFD0500	04/22/22	04/25/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

BKG03@5'
2204252-24 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/14/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.15			pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0345 - EPA 5030 Soil MS

Blank (BFD0345-BLK1)

Prepared: 04/18/22 Analyzed: 04/19/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		104	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

LCS (BFD0345-BS1)

Prepared: 04/18/22 Analyzed: 04/19/22

Benzene	0.0613	0.0020	mg/kg	0.0750		81.7	70-130			
Toluene	0.0697	0.0050	"	0.0750		92.9	70-130			
Ethylbenzene	0.0668	0.0050	"	0.0750		89.0	70-130			
m,p-Xylene	0.142	0.010	"	0.150		94.5	70-130			
o-Xylene	0.0680	0.0050	"	0.0750		90.7	70-130			
1,2,4-Trimethylbenzene	0.0718	0.0050	"	0.0750		95.7	70-130			
1,3,5-Trimethylbenzene	0.0683	0.0050	"	0.0750		91.0	70-130			
Naphthalene	0.0733	0.0038	"	0.0750		97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0402		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	50-150			

Matrix Spike (BFD0345-MS1)

Source: 2204214-01

Prepared: 04/18/22 Analyzed: 04/19/22

Benzene	0.0621	0.0020	mg/kg	0.0750	ND	82.8	70-130			
Toluene	0.0700	0.0050	"	0.0750	ND	93.3	70-130			
Ethylbenzene	0.0653	0.0050	"	0.0750	ND	87.1	70-130			
m,p-Xylene	0.139	0.010	"	0.150	ND	92.3	70-130			
o-Xylene	0.0672	0.0050	"	0.0750	ND	89.6	70-130			
1,2,4-Trimethylbenzene	0.0702	0.0050	"	0.0750	ND	93.6	70-130			
1,3,5-Trimethylbenzene	0.0679	0.0050	"	0.0750	ND	90.5	70-130			
Naphthalene	0.0765	0.0038	"	0.0750	ND	102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0413		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0345 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0345-MSD1)	Source: 2204214-01			Prepared: 04/18/22 Analyzed: 04/19/22						
Benzene	0.0629	0.0020	mg/kg	0.0750	ND	83.8	70-130	1.20	30	
Toluene	0.0691	0.0050	"	0.0750	ND	92.1	70-130	1.34	30	
Ethylbenzene	0.0643	0.0050	"	0.0750	ND	85.7	70-130	1.57	30	
m,p-Xylene	0.136	0.010	"	0.150	ND	90.9	70-130	1.59	30	
o-Xylene	0.0668	0.0050	"	0.0750	ND	89.1	70-130	0.582	30	
1,2,4-Trimethylbenzene	0.0710	0.0050	"	0.0750	ND	94.6	70-130	1.15	30	
1,3,5-Trimethylbenzene	0.0671	0.0050	"	0.0750	ND	89.5	70-130	1.16	30	
Naphthalene	0.0769	0.0038	"	0.0750	ND	103	70-130	0.509	30	
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0421		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	50-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0346 - EPA 3550A

Blank (BFD0346-BLK1)

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BFD0346-BS1)

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	524	50	mg/kg	500	105	70-130
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Matrix Spike (BFD0346-MS1)

Source: 2204214-01

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	482	50	mg/kg	500	26.0	91.3	70-130
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Matrix Spike Dup (BFD0346-MSD1)

Source: 2204214-01

Prepared: 04/18/22 Analyzed: 04/19/22

C10-C28 (DRO)	493	50	mg/kg	500	26.0	93.3	70-130	2.10	20
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0364 - EPA 5030 Soil MS

Blank (BFD0364-BLK1)

Prepared & Analyzed: 04/19/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0189		"	0.0333		56.8	40-150			
Surrogate: Fluoranthene-d10	0.0230		"	0.0333		69.0	40-150			

LCS (BFD0364-BS1)

Prepared & Analyzed: 04/19/22

Acenaphthene	0.0242	0.00500	mg/kg	0.0333		72.5	31-137			
Anthracene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (a) anthracene	0.0246	0.00500	"	0.0333		73.8	30-120			
Benzo (a) pyrene	0.0255	0.00500	"	0.0333		76.4	30-120			
Benzo (b) fluoranthene	0.0252	0.00500	"	0.0333		75.5	30-120			
Benzo (k) fluoranthene	0.0257	0.00500	"	0.0333		77.2	30-120			
Chrysene	0.0248	0.00500	"	0.0333		74.5	30-120			
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333		84.2	30-120			
Fluoranthene	0.0246	0.00500	"	0.0333		73.7	30-120			
Fluorene	0.0247	0.00500	"	0.0333		74.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0273	0.00500	"	0.0333		81.8	30-120			
Pyrene	0.0255	0.00500	"	0.0333		76.6	35-142			
1-Methylnaphthalene	0.0226	0.00500	"	0.0333		67.7	35-142			
2-Methylnaphthalene	0.0226	0.00500	"	0.0333		67.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0215		"	0.0333		64.6	40-150			
Surrogate: Fluoranthene-d10	0.0259		"	0.0333		77.7	40-150			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0364 - EPA 5030 Soil MS

Matrix Spike (BFD0364-MS1)

Source: 2204207-01

Prepared & Analyzed: 04/19/22

Acenaphthene	0.0175	0.00500	mg/kg	0.0333	ND	52.5	31-137		
Anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120		
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.7	30-120		
Benzo (a) pyrene	0.0186	0.00500	"	0.0333	ND	55.8	30-120		
Benzo (b) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120		
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.5	30-120		
Chrysene	0.0185	0.00500	"	0.0333	ND	55.5	30-120		
Dibenz (a,h) anthracene	0.0185	0.00500	"	0.0333	ND	55.4	30-120		
Fluoranthene	0.0189	0.00500	"	0.0333	ND	56.7	30-120		
Fluorene	0.0149	0.00500	"	0.0333	ND	44.8	30-120		
Indeno (1,2,3-cd) pyrene	0.0199	0.00500	"	0.0333	ND	59.7	30-120		
Pyrene	0.0159	0.00500	"	0.0333	ND	47.8	35-142		
1-Methylnaphthalene	0.00979	0.00500	"	0.0333	ND	29.4	15-130		
2-Methylnaphthalene	0.00977	0.00500	"	0.0333	ND	29.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0198		"	0.0333		59.3	40-150		
Surrogate: Fluoranthene-d10	0.0136		"	0.0333		40.9	40-150		

Matrix Spike Dup (BFD0364-MSD1)

Source: 2204207-01

Prepared & Analyzed: 04/19/22

Acenaphthene	0.0192	0.00500	mg/kg	0.0333	ND	57.5	31-137	9.09	30
Anthracene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	11.7	30
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120	20.1	30
Benzo (a) pyrene	0.0174	0.00500	"	0.0333	ND	52.3	30-120	6.51	30
Benzo (b) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.5	30-120	13.7	30
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	11.3	30
Chrysene	0.0163	0.00500	"	0.0333	ND	48.9	30-120	12.6	30
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	12.6	30
Fluoranthene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	11.7	30
Fluorene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	12.4	30
Indeno (1,2,3-cd) pyrene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	18.3	30
Pyrene	0.0180	0.00500	"	0.0333	ND	54.1	35-142	12.3	30
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.1	15-130	48.3	50
2-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	48.1	15-130	48.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0155		"	0.0333		46.6	40-150		
Surrogate: Fluoranthene-d10	0.0187		"	0.0333		56.1	40-150		

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0425 - EPA 3050B

Blank (BFD0425-BLK1)

Prepared: 04/20/22 Analyzed: 04/24/22

Boron ND 0.0100 mg/L

LCS (BFD0425-BS1)

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.03 0.0100 mg/L 5.00 101 80-120

Duplicate (BFD0425-DUP1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 1.05 0.0100 mg/L 1.05 0.585 20

Matrix Spike (BFD0425-MS1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.64 0.0100 mg/L 5.00 1.05 91.8 75-125

Matrix Spike Dup (BFD0425-MSD1)

Source: 2204247-02

Prepared: 04/20/22 Analyzed: 04/24/22

Boron 5.83 0.0100 mg/L 5.00 1.05 95.6 75-125 3.34 25

Batch BFD0461 - EPA 3050B

Blank (BFD0461-BLK1)

Prepared: 04/21/22 Analyzed: 04/28/22

Boron ND 0.0100 mg/L

LCS (BFD0461-BS1)

Prepared: 04/21/22 Analyzed: 04/29/22

Boron 4.98 0.0100 mg/L 5.00 99.7 80-120

Duplicate (BFD0461-DUP1)

Source: 2204228-01

Prepared: 04/21/22 Analyzed: 04/29/22

Boron 0.453 0.0100 mg/L 0.457 0.792 20

Matrix Spike (BFD0461-MS1)

Source: 2204228-01

Prepared: 04/21/22 Analyzed: 04/29/22

Boron 5.34 0.0100 mg/L 5.00 0.457 97.7 75-125

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD	
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0461 - EPA 3050B

Matrix Spike Dup (BFD0461-MSD1)

Source: 2204228-01

Prepared: 04/21/22 Analyzed: 04/29/22

Boron	5.14	0.0100	mg/L	5.00	0.457	93.6	75-125	3.93	25
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Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0498 - General Preparation

Blank (BFD0498-BLK1)

Prepared: 04/22/22 Analyzed: 05/01/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFD0498-BS1)

Prepared: 04/22/22 Analyzed: 05/01/22

Calcium	4.17	0.0500	mg/L wet	5.00	83.4	70-130
Magnesium	4.44	0.0500	"	5.00	88.8	70-130
Sodium	3.62	0.0500	"	5.00	72.4	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD		
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes	

Batch BFD0467 - General Preparation

Duplicate (BFD0467-DUP1)		Source: 2204206-11			Prepared & Analyzed: 04/21/22						
% Solids	87.0		%		87.2			0.285		20	

Batch BFD0494 - General Preparation

Duplicate (BFD0494-DUP1)		Source: 2204247-01			Prepared: 04/22/22 Analyzed: 04/26/22						
% Solids	81.7		%		81.8			0.0806		20	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting			Spike	Source	%REC		RPD	
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0500 - General Preparation

Blank (BFD0500-BLK1)

Prepared: 04/22/22 Analyzed: 04/25/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0500-BS1)

Prepared: 04/22/22 Analyzed: 04/25/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFD0500-DUP1)

Source: 2204252-01

Prepared: 04/22/22 Analyzed: 04/25/22

Specific Conductance (EC) 1.24 0.0100 mmhos/cm 1.23 0.891 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0499 - General Preparation

LCS (BFD0499-BS1)

Prepared: 04/22/22 Analyzed: 04/25/22

pH	9.15	pH Units	9.18	99.7	95-105
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Duplicate (BFD0499-DUP1)

Source: 2204252-01

Prepared: 04/22/22 Analyzed: 04/25/22

pH	8.04	pH Units	8.01	0.374	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/05/22 13:10

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 02, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Loloff 35-5,6 Tank Battery

Work Order #2204322

Enclosed are the results of analyses for samples received by Summit Scientific on 04/20/22 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2204322-01	Water	04/20/22 14:20	04/20/22 17:00
BH02	2204322-02	Water	04/20/22 14:12	04/20/22 17:00
BH03	2204322-03	Water	04/20/22 14:06	04/20/22 17:00
BH04	2204322-04	Water	04/20/22 14:05	04/20/22 17:00
BH05	2204322-05	Water	04/20/22 14:00	04/20/22 17:00
BH06	2204322-06	Water	04/20/22 13:59	04/20/22 17:00
BH07	2204322-07	Water	04/20/22 13:52	04/20/22 17:00
BH08	2204322-08	Water	04/20/22 13:50	04/20/22 17:00
BH09	2204322-09	Water	04/20/22 13:45	04/20/22 17:00
BH10	2204322-10	Water	04/20/22 13:42	04/20/22 17:00
BH11	2204322-11	Water	04/20/22 13:36	04/20/22 17:00
BH12	2204322-12	Water	04/20/22 13:35	04/20/22 17:00
BH13	2204322-13	Water	04/20/22 13:30	04/20/22 17:00
BH14	2204322-14	Water	04/20/22 13:27	04/20/22 17:00
BH15	2204322-15	Water	04/20/22 13:21	04/20/22 17:00
BH16	2204322-16	Water	04/20/22 13:20	04/20/22 17:00
BH17	2204322-17	Water	04/20/22 13:15	04/20/22 17:00

Summit Scientific

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S₂

2204322.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 2

Client: PDC/ Tasman Geosciences

Project Manager: Mark Longhurst

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield, CO 80020

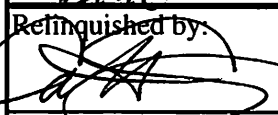
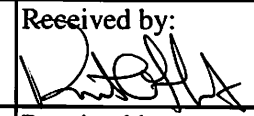
Phone: 303-487-1228

Project Name: LOL OFF 35-5 & 6 TB

Sampler Name: Colette Ramey

Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4-TMB	1,3,5-TMB	TDS	Cl	SO ₄			
1	BH01	4/20/22	1420	4			4														
2	BH02		1412																		
3	BH03		1406																		
4	BH04		1405																		
5	BH05		1400																		
6	BH06		1359																		
7	BH07		1352																		
8	BH08		1350																		
9	BH09		1345																		
10	BH10		1342		3																

Relinquished by: 	Date/Time: 4/20/2022 1645	Received by: Tasman's Lock Box	Date/Time: 4/20/2022 1645	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/20/22 1700	Received by: 	Date/Time: 4/20/22 1700	Sample Integrity: Temperature Upon Receipt: 0.7	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Summit Scientific

S₂

2204322.2

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 2 of 2

Client: PDC/ Tasman Geosciences

Project Manager: Mark Longhurst

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield, CO 80020

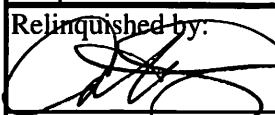
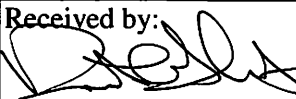
Phone: 303-487-1228

Project Name: LOLOFF 35-5 + 6 TB

Sampler Name: Colette Ramey

Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4-TMB	1,3,5-TMB	TDS	Cl	SO ₄		
1	BH11	4/20/22	1336	4	3		1			✓				✓	✓	✓	✓	✓	✓	
2	BH12		1335	1	3		1													
3	BH13		1330	1			4													
4	BH14		1327	1	3		1													
5	BH15		1321	1	3		1													
6	BH16		1320	1			4													
7	BH17		1315	1			4													
8																				
9																				
10																				

Relinquished by: 	Date/Time: 4/20/2022 1645	Received by: Tasman's Lock Box	Date/Time: 4/20/2022 1645	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/20/22 1700	Received by: 	Date/Time: 4/20/22 1700	Same Day _____ 72 hours _____	
				24 hours _____ Standard <input checked="" type="checkbox"/>	
				48 hours _____	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 0.7	
				Samples Intact: (Yes) No	

S₂

Sample Receipt Checklist

S2 Work Order# 2204322Client: PDC/TasmanClient Project ID: Loloff 33-5+6TB

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

	-			
--	---	--	--	--

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	-			ON ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		-		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	-			HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				



Custodian Printed Name

42022

Date/Time



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH01
2204322-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **04/20/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		61.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.1 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	273	12.0		mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	2500	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	3320	10.0		mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH02
2204322-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		60.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	588	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	3260	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	4770	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH03
2204322-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		60.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	418	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	2170	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3710	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH04
2204322-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		59.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	500	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	4110	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	5520	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH05
2204322-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		57.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	314	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	2760	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	4100	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH06
2204322-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		61.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	652	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	2860	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	4750	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH07
2204322-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		62.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.4 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1850	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	8390	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	11600	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH08
2204322-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **04/20/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		62.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		88.9 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	1360	12.0		mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	6940	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	9470	10.0		mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH09
2204322-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		66.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.1 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	868	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	5180	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	7500	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH10
2204322-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	1.2	1.0	"	"	"	"	"	"	
Xylenes (total)	2.2	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	6.8	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		63.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.9 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1980	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	9000	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	12100	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH11
2204322-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		64.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.1 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1130	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	6920	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	9210	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH12
2204322-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **04/20/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		62.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.6 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	1360	12.0		mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	9100	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	10900	10.0		mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH13
2204322-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		61.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1050	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	7540	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	9370	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH14
2204322-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		62.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.0 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	955	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	7440	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	9160	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH15
2204322-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		62.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1010	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	7170	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	8900	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH16
2204322-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		64.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.5 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1460	12.0	mg/L	200	BFD0635	04/28/22	04/29/22	EPA 300.0	
Sulfate	9420	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	11600	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

BH17
2204322-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFD0504	04/22/22	04/25/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/22 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		70.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.9 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/20/22 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	2180	12.0	mg/L	200	BFD0635	04/28/22	04/29/22	EPA 300.0	
Sulfate	11400	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	15000	10.0	mg/L	1	BFD0537	04/25/22	04/25/22	SM2540C	

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0504 - EPA 5030 Water MS

Blank (BFD0504-BLK1)

Prepared: 04/22/22 Analyzed: 04/25/22

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.3		79.4	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		94.1	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.9	21-167			

LCS (BFD0504-BS1)

Prepared: 04/22/22 Analyzed: 04/25/22

Benzene	18.8	1.0	ug/l	25.0		75.2	51-132			
Toluene	19.1	1.0	"	25.0		76.4	51-138			
Ethylbenzene	21.8	1.0	"	25.0		87.4	58-146			
m,p-Xylene	46.4	2.0	"	50.0		92.8	57-144			
o-Xylene	23.8	1.0	"	25.0		95.1	53-146			
Naphthalene	30.2	1.0	"	25.0		121	70-130			
1,2,4-Trimethylbenzene	21.1	1.0	"	25.0		84.2	70-130			
1,3,5-Trimethylbenzene	21.1	1.0	"	25.0		84.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	10.7		"	13.3		80.4	23-173			
Surrogate: Toluene-d8	12.5		"	13.3		93.6	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.2	21-167			

Matrix Spike (BFD0504-MS1)

Source: 2204322-01

Prepared: 04/22/22 Analyzed: 04/25/22

Benzene	18.4	1.0	ug/l	25.0	ND	73.5	34-141			
Toluene	21.1	1.0	"	25.0	ND	84.4	27-151			
Ethylbenzene	22.3	1.0	"	25.0	ND	89.3	29-160			
m,p-Xylene	48.3	2.0	"	50.0	ND	96.6	20-166			
o-Xylene	24.5	1.0	"	25.0	ND	97.8	33-159			
Naphthalene	28.0	1.0	"	25.0	ND	112	70-130			
1,2,4-Trimethylbenzene	24.1	1.0	"	25.0	ND	96.4	70-130			
1,3,5-Trimethylbenzene	23.4	1.0	"	25.0	ND	93.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	8.33		"	13.3		62.5	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.3	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0504 - EPA 5030 Water MS

Matrix Spike Dup (BFD0504-MSD1)	Source: 2204322-01			Prepared: 04/22/22 Analyzed: 04/25/22						
Benzene	18.6	1.0	ug/l	25.0	ND	74.5	34-141	1.30	30	
Toluene	19.0	1.0	"	25.0	ND	76.1	27-151	10.4	30	
Ethylbenzene	21.5	1.0	"	25.0	ND	85.9	29-160	3.84	30	
m,p-Xylene	45.9	2.0	"	50.0	ND	91.8	20-166	5.09	30	
o-Xylene	23.8	1.0	"	25.0	ND	95.0	33-159	2.95	30	
Naphthalene	30.8	1.0	"	25.0	ND	123	70-130	9.28	30	
1,2,4-Trimethylbenzene	21.5	1.0	"	25.0	ND	86.1	70-130	11.3	30	
1,3,5-Trimethylbenzene	21.1	1.0	"	25.0	ND	84.6	70-130	10.3	30	
Surrogate: 1,2-Dichloroethane-d4	10.6		"	13.3		79.8	23-173			
Surrogate: Toluene-d8	12.4		"	13.3		93.2	20-170			
Surrogate: 4-Bromofluorobenzene	12.3		"	13.3		92.5	21-167			

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0635 - General Preparation

Blank (BFD0635-BLK1)

Prepared & Analyzed: 04/28/22

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BFD0635-BS1)

Prepared & Analyzed: 04/28/22

Chloride	3.11	0.0600	mg/L	3.00	104	90-110
Sulfate	14.7	0.300	"	15.0	97.8	90-110

Duplicate (BFD0635-DUP1)

Source: 2204322-01

Prepared & Analyzed: 04/28/22

Chloride	271	12.0	mg/L	273	0.809	20
Sulfate	2260	60.0	"	2500	9.85	20

Matrix Spike (BFD0635-MS1)

Source: 2204322-01

Prepared & Analyzed: 04/28/22

Chloride	908	12.0	mg/L	600	273	106	80-120
Sulfate	5540	60.0	"	3000	2500	101	80-120

Summit Scientific

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PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	
		Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch BFD0537 - General Preparation

Blank (BFD0537-BLK1)

Prepared & Analyzed: 04/25/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFD0537-DUP1)

Source: 2204322-01

Prepared & Analyzed: 04/25/22

Total Dissolved Solids 3450 10.0 mg/L 3320 3.69 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



PDC Energy
1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
05/02/22 11:12

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

Attachment B

Borehole Logging Form

BOREHOLE ID: BH01 SITE NAME: Wdoff 35-5 TB CLIENT NAME: PDC ENERGY

Date Completed: 4/14/22 Location: N 20C

Drilling Company: Site Services Surface Completion: Flush DTW: ~ 5' TD: ~ 11'

Type of Drill: Geoprobe 7822 DT Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		CL	Light brown, sandy clay, low plasticity, fine grain sand, dry, no odor
2				0.2		CL	- As above, moist
3		HA	100%	0.0	BH01@2.5' (0856)		
4				0.1			
5				0.5	BH01@5' (1130)		
6				0.3		SW	Light brown to tan, sand, fine to med. grain, poorly sorted, saturated, no odor
7				0.2			
8				0.3		CL	Light brown, clay, mod. plasticity, trace fine s, med. grain sand, moist, no odor
9		DP	100%	0.1			
10				0.1			
11				0.0			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH02	SITE NAME: Wdoff 35-S TTS	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: Push KS NE POC	
Drilling Company: Site Services Inc.	Surface Completion: Push	DTW: ~5' TD: 11'
Type of Drill: Geoprobe TB22 DT	Geologist: Kris Shepherd	Project Manager: B. Nelson
Bit Size: 3"	Logging Method: Continuous	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		CL	Light brown, sandy clay, low plasticity, fine grain sand, dry, no odor
2				0.0		CL	- As above, moist
3		HA	100%	0.0	BH02@2.5' (1052)		
4				0.2			
5				0.1			
6				0.2	BH02@5' (1053)	SW	Light brown to gray, sand, fine to med. grain, poorly sorted, sat. water, no odor, light FeO ₂ stain @ ~5.5'
7				0.1			
8				0.2		CL	Light brown, clay, med. plasticity, moist, no odor
9		DP	80%	0.3			
10							
11				0.2		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ mottled stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH03	SITE NAME: LOLOFF 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: NE POC	
Drilling Company: Site Services	Surface Completion: Flush	DTW: ~4' TD: ~11'
Type of Drill: 7322 DT Geoprobe	Geologist: Kris Shepherd	Project Manager: B. Nelson
Bit Size: 3"	Logging Method: Continuous	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		CL	Light brown, sandy clay, low plasticity, fine grain sand, dry, no odor
2				0.1		CL	- As above, moist
3		HA	100%	0.0	BH03@2.5' (0912)		↓
4				0.0	BH03@4' (0917)	SW	Tan to gray, sand, fine to med. grain, poorly sorted, wet at 4' no odor
5				0.0			↓
6				0.2			↓
7				0.2		CL	Light brown, clay, mod. plasticity, trace fq. sand, moist, no odor
8				0.1			↓
9		DP	100%	0.0			↓
10				0.1			↓
11				0.0		SM	Light brown, silty sand, fine grain, well sorted, moist, FeO ₂ mottled stain, no odor
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: B6b4 SITE NAME: Well 35-5TB CLIENT NAME: PDC ENERGY

Date Completed: 4/14/22 Location: NW Source

Drilling Company: Site Services Inc Surface Completion: Push DTW: ~5' TD: 11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		CL	Light Brown, sandy clay, low plasticity, fine grain sand, dry, no odor
2				0.1		SC	Tan, clayey sand, fine to med. grain, poorly sorted, moist, no odor
3		HA	100%	0.3	BH04025' (0915)		
4				0.2			
5				0.1	BH04035' (1200)	SC	As above, Saturated KS
6				0.1		SC	As above, Saturated
7				0.2		CL	Light brown, clay, med. plasticity, trace fine grain sand, moist, no odor
8				0.1			
9		DP	100%	0.1			
10				0.1		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, mottled Fe ₂ O ₃ stain-orange
11				0.1			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: <u>BH05</u>	SITE NAME: <u>Wolff 35-5 TB</u>	CLIENT NAME: <u>PDC ENERGY</u>
Date Completed: <u>4/14/22</u>	Location: <u>AST DOC</u>	
Drilling Company: <u>Site Services</u>	Surface Completion: <u>Flush</u>	DTW: <u>~5'</u> TD: <u>~11'</u>
Type of Drill: <u>7822 DT Geoprobe</u>	Geologist: <u>Kris Shepherd</u>	Project Manager: <u>B. Nelson</u>
Bit Size: <u>3"</u>	Logging Method: <u>Continuous</u>	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.3		CL	Light brown, clay, mod. plasticity, dry, no odor
2				0.1			↓
3		HA	100%	0.1	BH05@2.5' (1225)	SC	Brown, clayey sand, fine to coarse grain, poorly sorted, trace gravel, moist, no odor
4				0.3			↓
5				0.4	BH05@5' (1235)	SC	- As above, saturated
6				0.5			↓
7				0.3		CL	Brown to tan, clay, mod. plasticity, moist, no odor
8		DP	100%	0.0			↓
9				0.0			↓
10				0.0			↓
11				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ /orange mottled stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH06 SITE NAME: Volcan 35-500 CLIENT NAME: PDC ENERGY

Date Completed: 4/14/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~5' TD: ~11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SC	Brown to light brown, fine to medium grain, clayey sand, no odor
2				0.0			
3		HA	100%	0.0	BH06@25' (1420)		
4				0.1			
5				0.4	BH06@5' (1443)	SC	-As above, saturated, organic material/roots
6				0.1		CL	Brown to tan, clay, mod. plasticity, moist, no odor
7				0.0			
8				0.1			
9		DA	100%	0.0			
10				0.0			
11				0.1		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH07	SITE NAME: 1060P 35-5	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22 7822 DT KS	Location: SC POC	
Drilling Company: Sir Services Inc.	Surface Completion: Push	DTW: ~ 4' TD: ~ 11'
Type of Drill: Geoprobe 7822 DT	Geologist: Kris Shepherd	Project Manager: B. Nelson
Bit Size: 3"	Logging Method: Continuous	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank							
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1		HA	100%	0.0		CL	Brown, clay, mod. plasticity, trace f.g. sand, dry, no odor
2				0.0		CL	- As above, moist
3				0.0	BH07 @ 2.5' (1410)	SW	Gray, sand, fine to medium grain, poorly sorted, moist, no odor
4				0.0	BH07 @ 4' (1412)	SW	- As above, saturated
5				0.0			
6		DP	75%	0.0			
7				0.0			
8				0.0		CL	Light brown, clay, mod. plasticity, trace fine grain sand, moist, no odor
9				0.0			
10				0.0			
11				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ /orange mottled stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH08 SITE NAME: LOLOFF 35-STB CLIENT NAME: PDC ENERGY

Date Completed: 4/14/2022 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~4' TD: ~11'

Type of Drill: Geoprobe 7822 DT Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SC	Brown, clayey sand, fine to medium grain, poorly sorted, moist, no odor
2				0.0			
3		HA	100%	0.3	BH08@2.5' (1425)		
4				0.5	BH08@4' (1430)	SW	Gray, sand, fine to medium grain, poorly sorted, saturated, no odor
5				0.4			
6				0.1			
7				0.1		CL	Tan, clay, med. plasticity, moist, no odor
8							
9		DP	80%	0.1			
10				0.0			
11				0.1			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: <u>BH09</u>	SITE NAME: <u>Wdoff 35-5 TB</u>	CLIENT NAME: <u>PDC ENERGY</u>
Date Completed: <u>4/14/22</u>	Location:	
Drilling Company: <u>Site Services</u>	Surface Completion: <u>Flush</u>	DTW: <u>~3.5'</u> TD: <u>11'</u>
Type of Drill: <u>7822 DT Geoprobe</u>	Geologist: <u>Kris Shepherd</u>	Project Manager: <u>B. Nelson</u>
Bit Size: <u>3"</u>	Logging Method: <u>continuous</u>	

Well Const. Material: Diameter: Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SC	Brown, clayey sand, fine to med. grain, poorly sorted, moist, no odor
2				0.1			
3		HA	100%	0.4	BH09@2.5' (1440)		
4				8.1	BH09@4' (1450)	SW	Gray, sand, fine to medium grain, poorly sorted, saturated, no odor
5				1.1			
6				0.8			
7				0.6			
8				0.5		CL	Light brown clay, mod. plasticity, moist, no odor
9		DP	100%	0.2			
10				0.2			
11				0.1			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH10 SITE NAME: Welf 35-STB CLIENT NAME: PDC ENERGY

Date Completed: 4/5/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~4' TD: ~11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

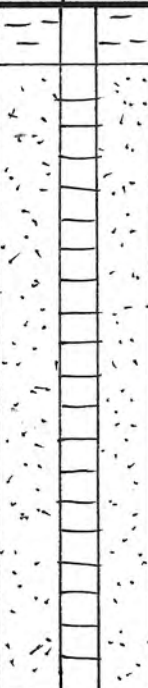


Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		SC	Brown to light brown, sandy clay, fine grain, moist, no odor
2				0.3			KS well sorted, moist, no odor
3		HA	100%	8.0	BH10025 (0833)		
4				243	BH1004 (0840)	SW	Gray, sand, fine to med. grain, poorly sorted, saturated, hydrocarbon odor
5				28.2			
6				18.0			
7				21.9		SW	- As above, tan, slight HC odor
8				4.0		CL	Tan, clay, mod. plasticity, moist, no odor
9		DP	100%	0.1			
10				0.1			
11				0.1		SM	Tan, silty sand, fine grain, well sorted, moist, no odor
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH11	SITE NAME: Woloff 35-5	CLIENT NAME: PDC ENERGY
Date Completed: 4/15/22	Location:	
Drilling Company: Site Services	Surface Completion: Flush	DTW: ~3.5' TD: ~11'
Type of Drill: 7822 DI Geoprobe	Geologist: Kris Shepherd	Project Manager: B. Nelson
Bit Size: 3"	Logging Method: Continuous	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank							
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1		HA	100%	0.1		SC	Brown, clayey sand, fine to medium grain, poorly sorted, moist, no odor
2				0.7			
3				0.8	BH11@2.5' (0851)	SC	- As above, gray, no odor
4				0.4	BH11@3.5' (0856)	SW	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
5		DP	100%	0.4			
6				0.2			
7				0.0		CL	Tan, clay, med. plasticity, moist, no odor
8				0.1			
9				0.0			
10				0.1			
11				0.1		SM	Tan, silty, sand, fine grain, well sorted, moist, no odor, FeO ₂ /orange mottled skin
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Borehole Logging Form

BOREHOLE ID: BH12 SITE NAME: Wolff 35-STB CLIENT NAME: PDC ENERGY

Date Completed: 4/15/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~4' TD: ~11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		SC	Brown, clayey sand, fine to med. grain, poorly sorted, moist, no odor
2				0.1			
3		HA	100%	0.3	BH12@2.5' (0835)		
4				0.8	BH12@4' (0843)	SW	Light brown to tan, sand, fine to medium grain, poorly sorted, saturated, no odor
5				0.4			
6				0.1			
7				0.1			
8		DP	80%	0.2		CL	Light brown, clay, mod. plasticity, trace fine grain sand, moist, no odor
9							
10				0.1			
11				0.1			
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Borehole Logging Form

BOREHOLE ID: BH13		SITE NAME: Woloff 35-STB		CLIENT NAME: PDC ENERGY	
Date Completed: 4/15/22			Location:		
Drilling Company: Site Services			Surface Completion: Flush		DTW: ~3.5' TD: ~11'
Type of Drill: 7822 DT Geoprobe		Geologist: Kris Shepherd		Project Manager: B. Nelson	
Bit Size: 3"		Logging Method: Continuous			
Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank					

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		SC	Brown, clayey sand, fine grain to med. grain, poorly sorted, moist, no odor
2				0.1			
3		HA	100%	0.1	BH13@2.5' (1005)		↓
4				0.2	BH13@3.5' (1010)	SW	Tan to gray, sand, fine to med. grain, poorly sorted, saturated, no odor
5				0.2			
6				0.1			
7				0.0			
8				0.0		CL	Tan, clay, mod. plasticity, moist, no odor
9		DP	100%	0.0			↓
10				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ /orange stain
11				0.1			
12							
13							
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Borehole Logging Form

BOREHOLE ID: BH14 SITE NAME: Woloff 35-STB CLIENT NAME: PDC ENERGY

Date Completed: 4/15/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~3.5' TD: ~11'

Type of Drill: 7822 PT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.3		SC	Brown, clayey sand, fine to medium grain, poorly sorted, moist, no odor
2				0.6			↓
3		HA	100%	0.5	BH14@2.5' (0903)	SC	As above, black stain, organic content, saturated @ ~3.5'
4				0.7	BH14@3.5' (0906)	SC	↓
5				0.4		SC	Gray to black, clayey sand, fine to medium grain, poorly sorted, saturated, hydrocarbon odor
6				28.2	BH14@5' (0921)	SW	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
7				7.4		CL	Tan, clay, mod. plasticity, moist, no odor
8				0.0			↓
9		DP	90%	0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ orange stain
10				0.0			
11				0.0			
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Borehole Logging Form

BOREHOLE ID: BH15 SITE NAME: Woff 35-STR CLIENT NAME: PDC ENERGY

Date Completed: 4/15/22 Location:

Drilling Company: Site Services Surface Completion: Push DTW: ~3.5' TD: 11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		CL	Brown, sandy clay, low plasticity, fine grain sand, moist, no odor, roots/organic content
2				0.1			
3		HA	100%	0.1	BH15@2.5' (1027)	SC	Brown to tan, clayey sand, fine to med. grain, poorly sorted, moist, no odor
4				0.1	BH15@3.5' (1038)		- As above, saturated @ 3.5'
5				0.2		SW	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
6				0.1			
7				0.0		CL	Tan, clay, med. plasticity, moist, no odor
8				0.1			
9		DP	100%	0.0			
10				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ orange mottled stain
11				0.0			
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Borehole Logging Form

BOREHOLE ID: BH16 SITE NAME: low 35-5TB CLIENT NAME: PDC ENERGY

Date Completed: 4/15/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~3.5' TD: ~11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		CL	Brown, sandy clay, low plasticity, f.g. sand, moist, no odor
2				0.1			
3		HA	100%	0.0	BH16@2.5' (1136)	SC	Brown, clayey sand, fine to med. grain, poorly sorted, moist, no odor
4				0.0	BH16@3.5' (1144)	SW	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
5				0.1			
6				0.0			
7				0.0			
8				0.0		CL	Tan, clay, moderate plasticity, moist, no odor
9		DP	75%	0.0			
10				0.0			
11				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ Orange mottled staining
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Borehole Logging Form

BOREHOLE ID: BH17 SITE NAME: Wolff 35-5 TB CLIENT NAME: PDC ENERGY

Date Completed: 4/15/22 Location:

Drilling Company: Site Services Surface Completion: Flush DTW: ~3.5' TD: ~11'

Type of Drill: 7822 DT Geoprobe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: Continuous

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.1		CL	Brown, sandy clay, mod-low plasticity, f.g. sand, moist, no odor
2				0.1		SC	Brown, clayey sand, fine to med. grain, poorly sorted, moist, no odor
3		HA	100%	0.1	BH17@2.5' (1132)		
4				0.2	BH17@3.5' (1140)	SW	Tan sand, fine to medium grain, poorly sorted, sat-wated, no odor
5				0.0			
6				0.0			
7				0.0			
8		DP	100%	0.1		CL	Tan, clay, mod. plasticity, moist, no odor
9				0.0			
10				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO ₂ /orange mottled stain
11				0.0			
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Borehole Logging Form

BOREHOLE ID: <u>BK602</u>	SITE NAME: <u>Woff 35-5TB</u>	CLIENT NAME: <u>PDC ENERGY</u>
Date Completed: <u>4/14/22</u>	Location:	
Drilling Company: <u>S/T Tasman</u>	Surface Completion: <u>None</u>	DTW: <u>~3'</u> TD: <u>~5'</u>
Type of Drill: <u>Hand Auger</u>	Geologist: <u>Kris Shepherd</u>	Project Manager: <u>B. Nelson</u>
Bit Size: <u>3"</u>	Logging Method: <u>continuous</u>	

Well Const. Material: Diameter: Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1	None	HA	100%	0.1		SC	Brown, clayey sand, fine to medium grain, moist, poorly sorted, moist, no odor
2				0.1			
3				0.0	BK602S (1325)	SC	As above, light tan
4				0.1	BK602C4 (1330)	SC	Tan, sand, fine to med. grain, poorly sorted, saturated, no odor
5				0.1	BK602S (1335)		
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Borehole Logging Form

BOREHOLE ID: BK603 SITE NAME: Coloff 35-5 TB CLIENT NAME: PDC ENERGY

Date Completed: 4/14/22 Location: _____

Drilling Company: Tasman Surface Completion: None DTW: ~4' TD: ~11'

Type of Drill: Hand Auger Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 3" Logging Method: HA

Well Const. Material: Diameter: N/A Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1	None			0.0		SC	Brown, clayey sand, fine to medium grain, poorly sorted, moist, no odor
2				0.0			
3		HA	100%	0.0	BK603@3' (1345)		↓
4				0.1	BK603@4' (1348)	SW	As above, light tan
5				0.0	BK603@5' (1350)		Tan, sand, fine to med grain, saturated, poorly sorted, no odor
6	X						
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