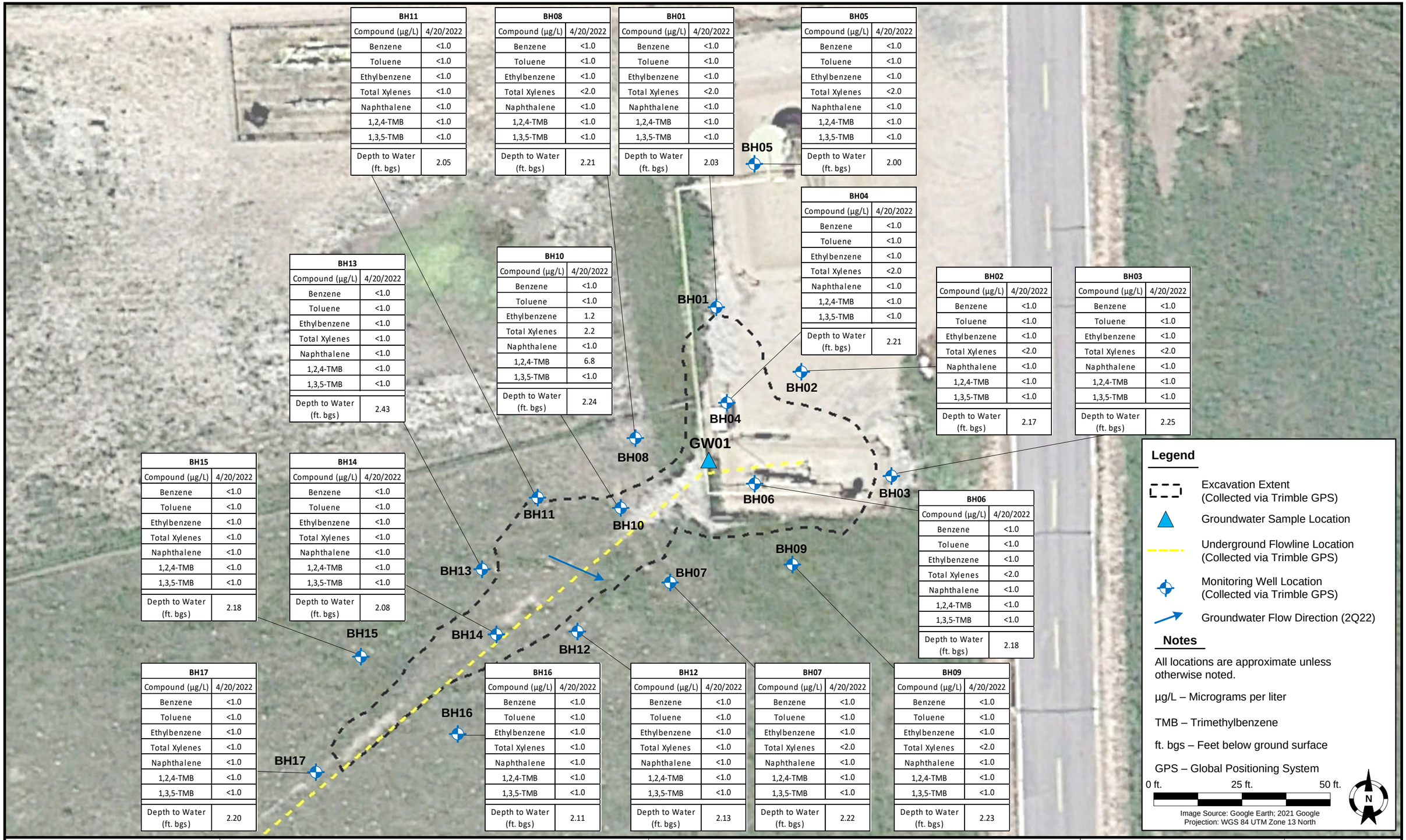
PDC Energy, Inc.

Site History and Background

Monitoring Well Installation and Supplemental Site Investigation Activities



DATE: May 5, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus

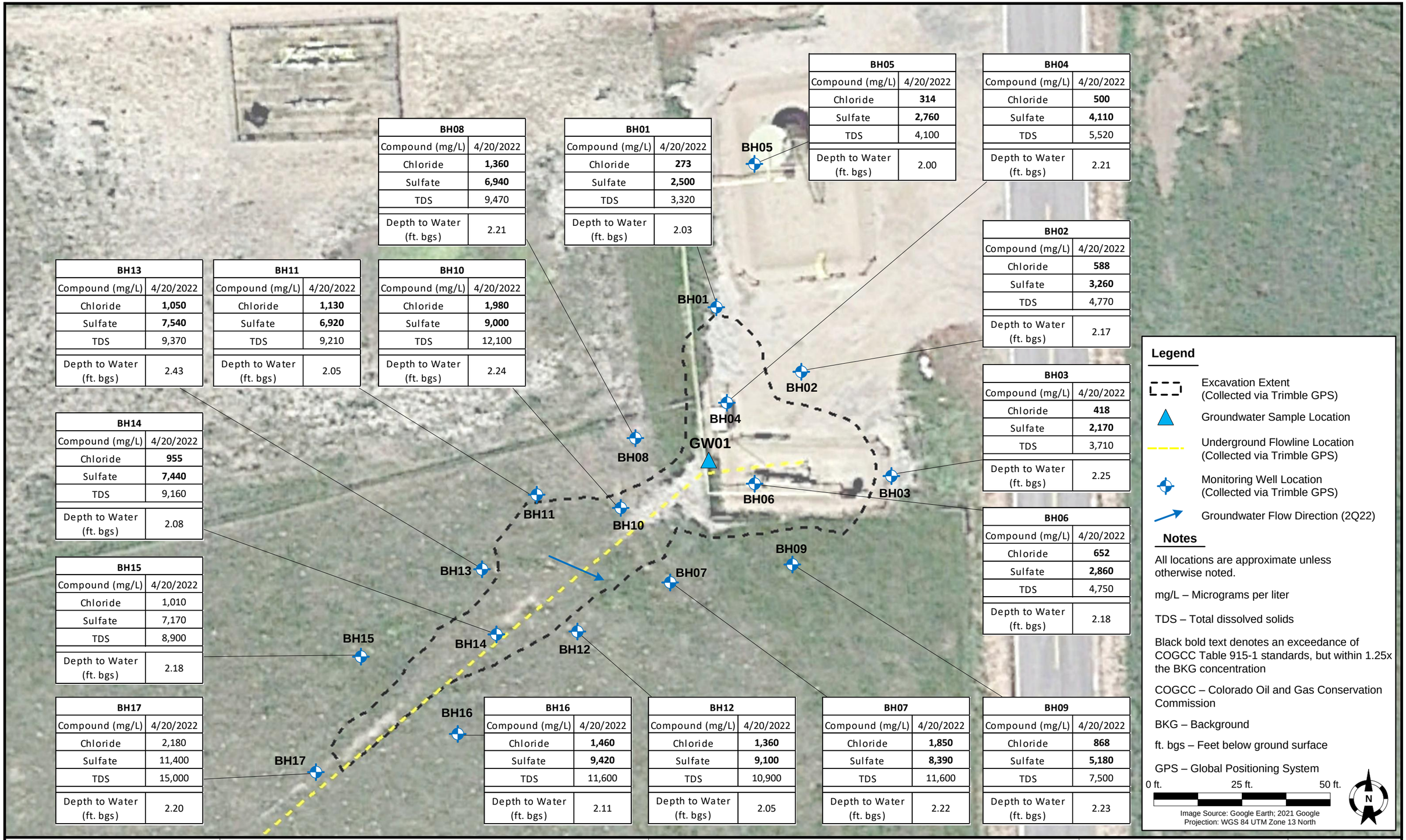
TASMAN

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

GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 2



BH05	
Compound (mg/L)	4/20/2022
Chloride	**314**
Sulfate	**2,760**
TDS	4,100
Depth to Water (ft. bgs)	2.00

BH04	
Compound (mg/L)	4/20/2022
Chloride	**500**
Sulfate	**4,110**
TDS	5,520
Depth to Water (ft. bgs)	2.21

BH08	
Compound (mg/L)	4/20/2022
Chloride	**1,360**
Sulfate	**6,940**
TDS	9,470
Depth to Water (ft. bgs)	2.21

BH01	
Compound (mg/L)	4/20/2022
Chloride	**273**
Sulfate	**2,500**
TDS	3,320
Depth to Water (ft. bgs)	2.03

BH02	
Compound (mg/L)	4/20/2022
Chloride	**588**
Sulfate	**3,260**
TDS	4,770
Depth to Water (ft. bgs)	2.17

BH13	
Compound (mg/L)	4/20/2022
Chloride	**1,050**
Sulfate	**7,540**
TDS	9,370
Depth to Water (ft. bgs)	2.43

BH11	
Compound (mg/L)	4/20/2022
Chloride	**1,130**
Sulfate	**6,920**
TDS	9,210
Depth to Water (ft. bgs)	2.05

BH10	
Compound (mg/L)	4/20/2022
Chloride	**1,980**
Sulfate	**9,000**
TDS	12,100
Depth to Water (ft. bgs)	2.24

BH03	
Compound (mg/L)	4/20/2022
Chloride	**418**
Sulfate	**2,170**
TDS	3,710
Depth to Water (ft. bgs)	2.25

BH14	
Compound (mg/L)	4/20/2022
Chloride	**955**
Sulfate	**7,440**
TDS	9,160
Depth to Water (ft. bgs)	2.08

BH06	
Compound (mg/L)	4/20/2022
Chloride	**652**
Sulfate	**2,860**
TDS	4,750
Depth to Water (ft. bgs)	2.18

BH15	
Compound (mg/L)	4/20/2022
Chloride	1,010
Sulfate	7,170
TDS	8,900
Depth to Water (ft. bgs)	2.18

BH17	
Compound (mg/L)	4/20/2022
Chloride	2,180
Sulfate	11,400
TDS	15,000
Depth to Water (ft. bgs)	2.20

BH16	
Compound (mg/L)	4/20/2022
Chloride	**1,460**
Sulfate	**9,420**
TDS	11,600
Depth to Water (ft. bgs)	2.11

BH12	
Compound (mg/L)	4/20/2022
Chloride	**1,360**
Sulfate	**9,100**
TDS	10,900
Depth to Water (ft. bgs)	2.05

BH07	
Compound (mg/L)	4/20/2022
Chloride	**1,850**
Sulfate	**8,390**
TDS	11,600
Depth to Water (ft. bgs)	2.22

BH09	
Compound (mg/L)	4/20/2022
Chloride	**868**
Sulfate	**5,180**
TDS	7,500
Depth to Water (ft. bgs)	2.23

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.

N

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

DATE: May 5, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus

TASMAN

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

GROUNDWATER ANALYTICAL RESULTS MAP (INORGANIC PARAMETERS)

FIGURE 3

BH05
4576.69

BH01
4576.64

BH04
4576.61

BH02
4576.59

BH08
4576.61

GW01

BH11
4576.70

BH06
4576.65

BH03
4576.49

BH10
4576.63

BH13
4576.74

BH09
4576.47

BH07
4576.55

BH15
4576.76

BH14
4576.70

BH12
4576.61

4576.50

4576.55

BH16
4576.66

4576.75

4576.60

BH17
4576.73

4576.65

4576.70

Legend

- Excavation Extent (Collected via Trimble GPS)
- Underground Flowline Location (Collected via Trimble GPS)
- Groundwater Sample Location
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed where inferred)
- 4681.91 Groundwater Elevation (ft. AMSL)
- Groundwater Flow Direction (2Q22)

Notes

All locations are approximate unless otherwise noted.

ft. AMSL – Feet Above Mean Sea Level

GPS – Global Positioning System

0 ft. 25 ft. 50 ft.

N

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

DATE:	April 29, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	A. Dahl

TASMAN

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

GROUNDWATER ELEVATION CONTOUR MAP (04/20/2022)

FIGURE 4

DATE: June 20, 2022 DESIGNED BY: C. Hamlin DRAWN BY: J. Marcus	TASMAN	**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	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500
BH01 @ 5'	4/14/2022	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
BH02 @ 5'	4/14/2022	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
BH03 @ 4'	4/14/2022	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
BH04 @ 5'	4/14/2022	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
BH05 @ 5'	4/14/2022	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
BH06 @ 5'	4/14/2022	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
BH07 @ 4'	4/14/2022	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
BH08 @ 4'	4/14/2022	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
BH09 @ 4'	4/14/2022	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
BH10 @ 4'	4/15/2022	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
BH11 @ 3.5'	4/15/2022	3.5 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
BH12 @ 4'	4/15/2022	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
BH13 @ 3.5'	4/15/2022	3.5 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
BH14 @ 3.5'	4/15/2022	3.5 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
BH14 @ 5'	4/15/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.0155	<0.00500
BH15 @ 3.5'	4/15/2022	3.5 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
BH16 @ 3.5'	4/15/2022	3.5 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
BH17 @ 3.5'	4/15/2022	3.5 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

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
(<) = Analytical result is less than the indicated laboratory reporting limit.
TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics
TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics
TEPH-ORO = Total extactable petroleum hydrocarbons - oil range organics
mg/kg = Milligrams per kilogram
TMB = Trimethylbenzene
= Source material characterization sample
ft. = Feet
bgs = Below ground surface
BOLD = Analytical result is in exceedance 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 Suitabilty 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 Suitabilty 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 = millgram 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:
1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
2. 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:

1. Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
2. 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,

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.

Summit Scientific

2204247.1

S2

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

Client: PDC Tasman
Address: 6855 W 119th Ave.
City/State/Zip: Broomfield CO 80020
Phone: (303) 487-1228
Sampler Name: Kris Shepherd

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com
Project Name: Wolff 35-5 Tank Battery
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX (8260B)	TPH (C6-C36)	1,2,4/1,3,5 TMB	PAHs*	pH, EC	SAR	Boron		*PAHs = Anthracene, Chrysene, Fluorene, & 1-M
1	BH14@5'	4/15/22	0921	3			X			X			X	X	X	X		X			
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		X			
6	BH17@2.5'		1132	1													X	X	X		
7	BH17@3.5'		1140	3									X	X	X	X					
8																					
9																					
10																					

Relinquished by: Date/Time: 4/15/22 1500
Received by: Date/Time: 41522 1610
Relinquished by: Date/Time:
Received by: Date/Time:

Temperature Upon Receipt: 4.1
IR gun correction: 0
Corrected Temperature 4.1
IR gun #: 1
HNO3 lot #

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Samples Intact: (Yes) No

Notes:
pH, EC, & SAR by saturated paste.

Summit Scientific

S2

2204247.2

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

Client: PDC/Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield CO 80020
Phone: (303)487-1228
Sampler Name: KS Kris Shepherd

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com
Project Name: Loloff 35-5 Tank Battery
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX (8260)	TPH (Gro-Dro)	1,2,4+1,3,5 TMB	PAH's	PH, EC	SAR	Boron		*PAHs = Anthracene, Chrysene, fluorene, & 1-M.
1	BH10@2.5'	4/15/22	0833	1			X			X							X	X	X		
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: [signature] Date/Time: 4/15/22 1510
Received by: [signature] Date/Time: 4/5/22 0610
Relinquished by: Date/Time:
Received by: Date/Time:

Temperature Upon Receipt: 4.1
IR gun correction: 0
Corrected Temperature 4.1
IR gun #: 1
HNO3 lot #

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Samples Intact: (Yes) No

Notes:
PH, EC, & SAR by saturated paste.

S2

2/2

2204247

Sample Receipt Checklist

S2 Work Order#_____

Client: DJ Tasman Client Project ID: Loloff 35-5 Tank Battery

Shipped 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_2SO_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

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

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

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

BH14@5'

2204247-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

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

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

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

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

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

Volatile Organic Compounds by EPA Method 8260B

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

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 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

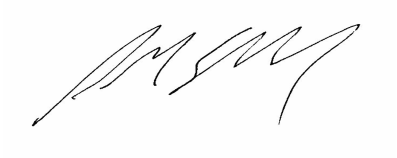
Date Sampled: **04/15/22 10:38**

Analyte	Result	Reporting 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 10:38**

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

PAH by EPA Method 8270D SIM



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

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

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

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 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 11:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

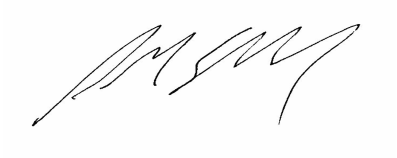
Date Sampled: **04/15/22 11:44**

Analyte	Result	Reporting 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 11:44**

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

PAH by EPA Method 8270D SIM



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

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**

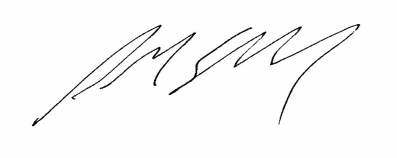
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.466**	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

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



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

Physical Parameters by APHA/ASTM/EPA Methods

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

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

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@3.5'

2204247-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 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 11:40**

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

PAH by EPA Method 8270D SIM

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@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**

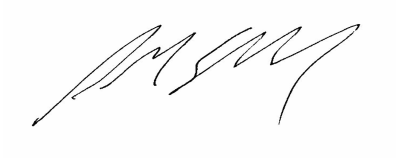
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.401**	0.00100	units	1	BFE0308	05/16/22	05/16/22	Calculation	

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



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@3.5'

2204247-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

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

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

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

BH10@4'

2204247-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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 08:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 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 08:40**

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

PAH by EPA Method 8270D SIM

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**

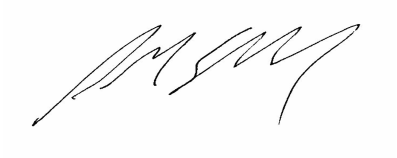
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.414**	0.00100	units	1	BFE0014	05/02/22	05/16/22	Calculation	

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



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

BH10@4'

2204247-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

S2

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

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@3.5'

2204247-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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 08:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

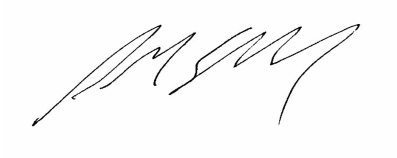
Date Sampled: **04/15/22 08:56**

Analyte	Result	Reporting 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 08:56**

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

PAH by EPA Method 8270D SIM



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@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

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@3.5'

2204247-11 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

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

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

BH12@4'

2204247-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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 08:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

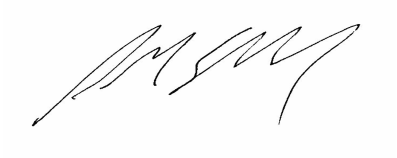
Date Sampled: **04/15/22 08:43**

Analyte	Result	Reporting 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 08:43**

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

PAH by EPA Method 8270D SIM



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

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	

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

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

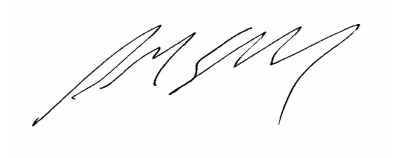
Date Sampled: **04/15/22 10:05**

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	



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

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 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 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

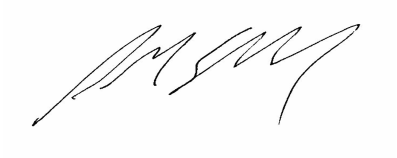
Date Sampled: **04/15/22 10:10**

Analyte	Result	Reporting 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 10:10**

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

PAH by EPA Method 8270D SIM



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

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	

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

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

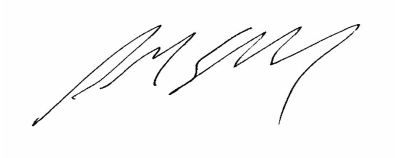
Date Sampled: **04/15/22 09:03**

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	



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

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 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 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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

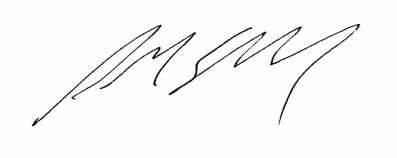
Date Sampled: **04/15/22 09:06**

Analyte	Result	Reporting 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 09:06**

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

PAH by EPA Method 8270D SIM



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

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	

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

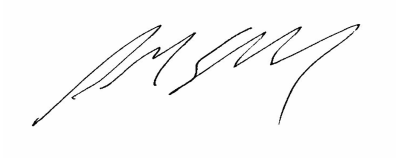
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BFD0352 - EPA 5030 Soil MS										
Blank (BFD0352-BLK1)				Prepared: 04/18/22 Analyzed: 04/24/22						
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
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*			

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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



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

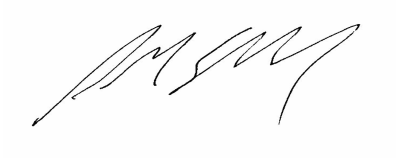
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

PDC Energy	Project: Loloff 35-5 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	05/17/22 15:03

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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



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	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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*			

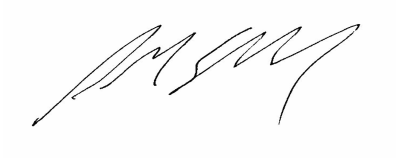
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

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

Summit Scientific

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



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.

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

Summit Scientific

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

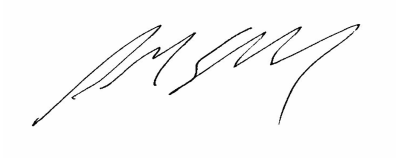
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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 - Quality Control

Summit Scientific

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



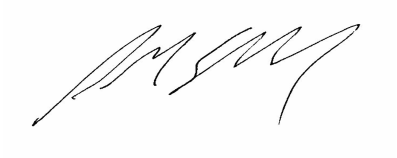
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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 Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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	



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 Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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			
Duplicate (BFD0559-DUP1)		**Source: 2204247-02**		Prepared & Analyzed: 04/26/22						
pH	8.01		pH Units		8.04			0.374	20	

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.

S2

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,

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

S_2

2204252.1

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

Client: PDC/Tasman
Address: 6855 W 119th Ave.
City/State/Zip: Broomfield CO 80020
Phone: (303)487-1228
Sampler Name: Kris Shepherd

Project Manager: Mark Longhurst
E-Mail: Mark.Longhurst@PDCE.com
Project Name: LoLoff 35-5 Tank Battery
Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative: HCl	HNO3	None	Other	Matrix: Water	Soil	Air-Canister #	Other	Analysis Requested: BTEX	TPH (C6-C36)	1,2,4/1,3,5 TMB	pH, EC	SAR	Boron	PAHs*		Special Instructions
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: 4/14/22 1755 Date/Time:
Received by: Date/Time: 41522 1610

Relinquished by: Date/Time:
Received by: Date/Time:

Temperature Upon Receipt: 4.1
IR gun correction: 0

Corrected Temperature 4.1
IR gun #: 1

HNO3 lot #

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Samples Intact: (Yes) No

Notes:
pH, EC, & SAR by Saturated paste.

Summit Scientific

2204252.2

S2

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

Client: PDC/Tasman
Address: 6855 W 119th Ave
City/State/Zip: Broomfield CO 80020
Phone: (303)487-1228
Sampler Name: Kris Shepherd

Project Manager: Mark Longhurst
E-Mail: Mark.Longhurst@PDCE.com
Project Name: Loloff 35-5 Tank Battery
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX/8260	TPH(C6-C36)	1,2,4&1,3,5 TMB	PAHs*	PH, EC	SAR	Boron		*PAHs = Anthracene, Chrysene, Fluorene, & 1-M
1	BH07@2.5'	4/12/22	1410	1			X			X							X	X	X		
2	BH07@4'		1412	3									X	X	X	X		X			
3	BH06@2.5'		1420	1													X	X	X		
4	BH06@5'		1443	3									X	X	X	X		X			
5	BH08@2.5'		1425	1													X	X	X		
6	BH08@4'		1430	3									X	X	X	X		X			
7	BH09@2.5'		1440	1													X	X	X		
8	BH09@4'		1450	3									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

Relinquished by: Date/Time:
Received by: Date/Time:

Temperature Upon Receipt: 4.1
IR gun correction: 0

Corrected Temperature 4.1
IR gun #: 1

HNO3 lot #

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard X
48 hours ___

Sample Integrity:
Samples Intact: (Yes) No

Notes:
PH, EC, & SAR by saturated paste.

www.s2scientific.com

Summit Scientific

2204252.3

S_2

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

Client: PDC/Tasman
Address: 6855 W 119th Ave.
City/State/Zip: Broomfield CO 80020
Phone: (303) 487-1228
Sampler Name: Kris Shepherd

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com
Project Name: Loloff 35-5 Tank Battery
Project Number:

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	SAR, EC, pH	Boron							pH, EC, & SAR by saturated paste
1	BKG02@5'	4/14/22	1335	1			X			X			X	X							
2	BKG03@2.5'	"	1345	1			"			"			X	X							
3	BKG03@4'	"	1348	1			"			"			X	X							
4	BKG03@5'	"	1350	1			"			"			X	X							
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: Date/Time: 4/14/22 1755
Received by: Date/Time: 41522 1010
Relinquished by: Date/Time:
Received by: Date/Time:

Temperature Upon Receipt: 4.1
IR gun correction: 0
Corrected Temperature 4.1
IR gun #: 1
HNO3 lot #

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard ✓
48 hours ___

Sample Integrity:
Samples Intact: (Yes) No

Notes:

S2

3/3

Sample Receipt Checklist

S2 Work Order# 2204252

Client: POC/Tasman Client Project ID: LoLoff 35-5 Tank Battery

Shipped 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_2SO_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:** 05/05/22 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

S2

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

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@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

S2

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

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@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

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@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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.24**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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

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

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

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

PAH by EPA Method 8270D SIM

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

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

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

Volatile Organic Compounds by EPA Method 8260B

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

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

PAH by EPA Method 8270D SIM

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

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

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	**84.4**	%	1	BFD0467	04/21/22	04/21/22	Calculation

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

BH01@5'

2204252-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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

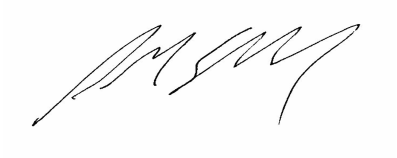
Date Sampled: **04/14/22 11:30**

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

PAH by EPA Method 8270D SIM



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

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**

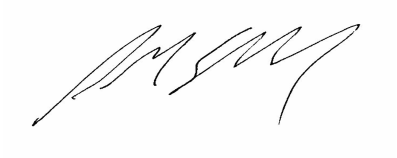
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	**0.246**	0.00100	units	1	BFE0001	05/01/22	05/01/22	Calculation	

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

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

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

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@5'

2204252-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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

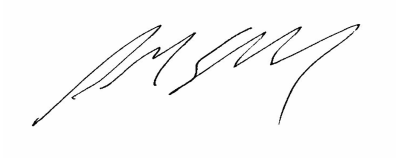
Date Sampled: **04/14/22 12:00**

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

PAH by EPA Method 8270D SIM



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@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

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@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

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@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

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

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

Volatile Organic Compounds by EPA Method 8260B

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

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

PAH by EPA Method 8270D SIM

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

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

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

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

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@4'

2204252-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

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

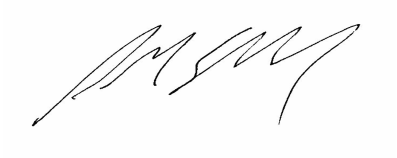
Date Sampled: **04/14/22 14:12**

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

PAH by EPA Method 8270D SIM



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@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

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@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

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

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.91**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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@5'

2204252-14 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*89.2 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

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@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

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@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

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@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

S2

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.54**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*85.9 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM

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

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

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

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

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

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**7.66**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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

BH09@4'

2204252-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/14/22 14:50**

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

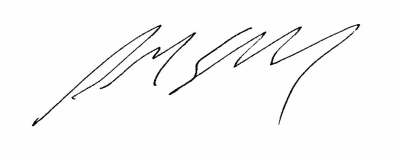
Date Sampled: **04/14/22 14:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		*86.0 %*	*30-150*		"	"	"	"	

PAH by EPA Method 8270D SIM



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

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

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

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

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

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

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.02**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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

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

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.03**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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

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

S2

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.48**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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@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

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

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@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

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@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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.15**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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

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

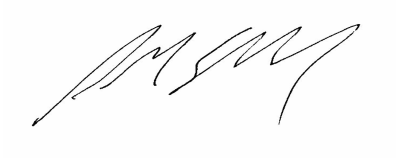
Date Sampled: **04/14/22 13:50**

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.



S2

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	**8.15**		pH Units	1	BFD0499	04/22/22	04/25/22	EPA 9045D	

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

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.

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

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

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

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

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.

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

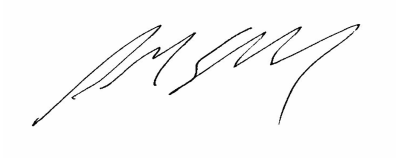
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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



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.

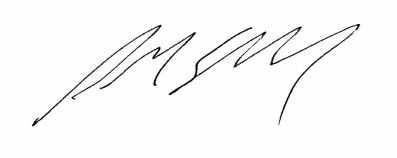
PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Loloff 35-5 Tank Battery Project Number: [none] Project Manager: Mark Longhurst	**Reported:** 05/05/22 13:10

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

Summit Scientific

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

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

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

Summit Scientific

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

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

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

Summit Scientific

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

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 Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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	

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 Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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	

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 Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	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			
Duplicate (BFD0499-DUP1)		**Source: 2204252-01**		Prepared: 04/22/22 Analyzed: 04/25/22						
pH	8.04		pH Units		8.01			0.374	20	

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.

S2

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,

Paul Shrewsbury
President

S2

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

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

2204322.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: PDC/ Tasman Geosciences
Address: 6855 W. 119th Ave.
City/State/Zip: Broomfield, CO 80020
Phone: 303-487-1228
Sampler Name: Colette Ramey

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@pdce.com
Project Name: LOLOFF 35-5 & 6 TB
Project Number: N/A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	BTEXN	1,2,4-TMB	1,3,5-TMB	TDS	Cl	SO4			
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 ___ 24 hours ___ 48 hours ___ 72 hours ___ Standard ✓
Relinquished by: Tasman's Lock Box Date/Time: 42022 1706	Received by: Date/Time: 42022 1700	**Sample Integrity:** Temperature Upon Receipt: 0.7 Samples Intact: (Yes) No
Relinquished by: Date/Time:	Received by: Date/Time:	**Notes:**

Summit Scientific

2204322.2

S_2

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Client: PDC/ Tasman Geosciences
Address: 6855 W. 119th Ave.
City/State/Zip: Broomfield, CO 80020
Phone: 303-487-1228
Sampler Name: Colette Ramey

Project Manager:Mark Longhurst
E-Mail: mark.longhurst@pdce.com
Project Name: LOLOFF 35-5 #6 TB
Project Number: N/A

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other ___	Water	Soil	Air-Canister #	Other ___	BTEXN	1,2,4-TMB	1,3,5-TMB	TDS	Cl	SO4			
1	BH11	4/20/22	1336	4	3		1		✓				✓	✓	✓	✓	✓	✓			
2	BH12	"	1335	1	3		1		"				"	"	"	"	"	"			
3	BH13		1330				4														
4	BH14		1327		3		1														
5	BH15		1321		3		1														
6	BH16		1320				4														
7	BH17	"	1315	✓			4		✓				✓	✓	✓	✓	✓	✓			
8																					
9																					
10																					

Relinquished by: Date/Time: 4/20/2022 1645
Received by: Tasman's Lock Box Date/Time: 4/20/2022 1645

Relinquished by: Tasman's Lock Box Date/Time: 42022 1700
Received by: Date/Time: 42022 1700

Relinquished by: Date/Time:
Received by: Date/Time:

Turn Around Time (Check)
Same Day ___ 72 hours ___
24 hours ___ Standard ✓
48 hours ___

Sample Integrity:
Temperature Upon Receipt: 0.7
Samples Intact: (Yes) No

Notes:

S2

S2 Work Order# 2204322

Sample Receipt Checklist

Client: PDC/Tasman Client Project ID: Loloff 35-5+6 TB

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

[ ][ ][-][ ][ ][ ][ ]

Matrix (Check all that apply) Air [ ] Soil/Solid [ ] Water [ ] Other [ ]

Temp (°C) [0.7] 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_2SO_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.**

[signature] 42022

Custodian Printed Name **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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

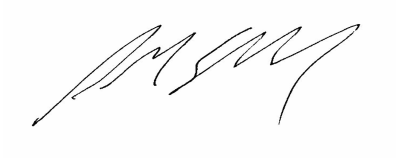
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**273**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**2500**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**3320**	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

BH02

2204322-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**4770**	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

BH03

2204322-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**3710**	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

BH04

2204322-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**5520**	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

BH05

2204322-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

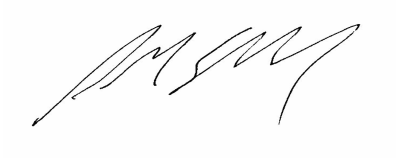
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**314**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**2760**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**4100**	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

BH06

2204322-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

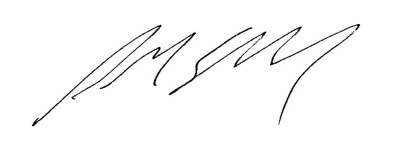
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**652**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**2860**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**11600**	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

BH08

2204322-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**9470**	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

BH09

2204322-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

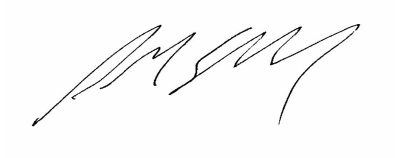
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**868**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**5180**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**7500**	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	Project: Loloff 35-5,6 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**12100**	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

BH11

2204322-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**9210**	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.

S2

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

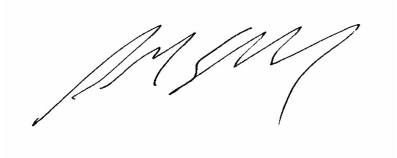
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**1360**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**9100**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**10900**	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

BH13

2204322-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**9370**	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

BH14

2204322-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**

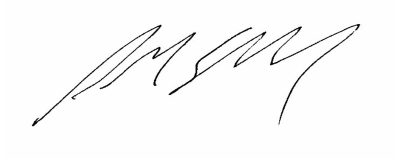
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	**955**	12.0	mg/L	200	BFD0635	04/28/22	04/28/22	EPA 300.0	
Sulfate	**7440**	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/20/22 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**9160**	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

BH15

2204322-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**8900**	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.

S2

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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**11600**	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

BH17

2204322-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	**15000**	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

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

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

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

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.

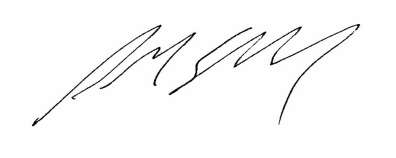
S2

PDC Energy	Project: Loloff 35-5,6 Tank Battery	
1775 Sherman St. STE. 3000	Project Number: [none]	**Reported:**
Denver CO, 80203	Project Manager: Mark Longhurst	05/02/22 11:12

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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



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

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

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

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.

S2

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

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH01	SITE NAME: Ldoff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: N PDC	
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)	SW	Light brown to tan, sand, fine to med. grain, poorly sorted, saturated, no odor
6				0.3			↓
7				0.2		CL	Light brown, clay, mod. plasticity, trace fine & med. grain sand, moist, no odor
8				0.3			
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							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH02	SITE NAME: Wolff 35-5 TTS	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: ~~Alaska~~ KS NE PDC	
Drilling Company: Site Services Inc.	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: 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' (0852)		↓
4				0.2			
5 ▽				0.1			
6				0.2	BH02@5' (1053)	SW	Light brown to gray, Sand, fine to med. grain, poorly sorted, Saturated, no odor, Light FeO2 Stain @ ~5.5'
7				0.1			
8				0.2		CL	Light brown, clay, mod. plasticity, moist, no odor
9		DP	80%	0.3			↓
10							
11				0.2		SM	Tan, Silty sand, fine grain, well sorted, moist, no odor, FeO2 mottled Stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH03	SITE NAME: Loloff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: NE PDC	
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		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 fg. sand, moist, no odor
8				0.1			↓
9		DP	100%	0.0			
10				0.1		SM	Light brown, silty sand fine grain, well sorted, moist, FeO_2 mottled stain, no odor
11				0.0			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH04	SITE NAME: Ldoff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: NW Source	
Drilling Company: Site Services Inc	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				0.1		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 odo
3		HA	100%	0.3	BH04@2.5' (0915)		
4				0.2			
5				0.1	BH04@5' (1200)	~~SC~~	~~As above, Saturated~~ KS
6				0.1		SC	- As above, Saturated
7				0.2		CL	Light brown, clay, mod. 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 FeO2 stain-orange
11				0.1			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH05	SITE NAME: Woloff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location: AST PDC	
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				0.3		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, FeO2/ orange mottled stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH06	SITE NAME: Woloff 35-5 ~~BH~~	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~~ FS clayey sand, fine to medium grain, moist, no odor
2				0.0			
3		~~SHA~~	100%	0.0	BH06@25' (1420)		
4				0.1			
5 ▽				0.4	BH06@5' (1443)		
6				0.1		SC	-As above, saturated, organic material/roots
7				0.0		CL	Brown to tan, clay, mod. plasticity, moist, no odor
8				0.1			
9		DP	100%	0.0			
10				0.0			
11				0.1		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeOx stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH07	SITE NAME: Loloff 35-5	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22 ~~7822 DT~~ KS	Location: SC PDC	
Drilling Company: Site Services Inc.	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		CL	Brown, clay, mod. plasticity, trace f.g. sand, dry, no odor
2				0.0		CL	-As above, moist
3		HA	100%	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				0.0			
7				0.0		CL	Light brown, clay, mod. plasticity, trace fine grain sand, moist, no odor
8							
9		DP	75%	0.0			
10							
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

TASMAN GEOSCIENCES

BOREHOLE ID: BH08	SITE NAME: Lokoff 35-5TB	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				1.4			
6				0.1		CL	Tan, clay, mod. plasticity, moist, no odor
7				0.1			
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							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH09	SITE NAME: Idoff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	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:	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	Gray, KS 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							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH10	SITE NAME: Wolff 35-5TB	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 to light brown, sandy clay, fine grain, ~~moist, no odor~~ KS poorly sorted, moist, no odor
2				0.3			
3		HA	100%	8.0	BH10@2.5' (0833)		
4 ▽				243	BH10@4' (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

TASMAN GEOSCIENCES

BOREHOLE ID: BH11	SITE NAME: Ridoff 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 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 medium grain, poorly sorted, moist, no odor
2				0.7			
3				0.8	BH11@2.5' (0851)	SC	- As above, gray, no odor
4		HA	100%	0.4	BH11@3.5' (0856)	SW	Tan, sand, fine to medium grain, poorly sorted, Saturated, no odor
5				0.4			
6				0.2			
7				0.0		CL	Tan, clay, mod. plasticity, moist, no odor
8				0.1			
9		DP	100%	0.0			
10				0.1			
11				0.1		SM	Tan, silty, sand, fine grain, well sorted, moist, no odor, Fe O_2/coarse mottled stain
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH12	**SITE NAME:** Loloff 35-5TB	**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			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH13	SITE NAME: Loloff 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				0.1		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		CL	Tan, clay, mod. plasticity, moist, no odor
8				0.0			
9		DP	100%	0.0			
10				0.0		SM	Tan, silty sand, fine grain well sorted, moist, no odor, FeO2/ orange stain
11				0.1			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH14	**SITE NAME:** Loloff 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				0.3		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)	SW	↓
5				0.4		SC	Gray to black, clayey sand, fine to medium grain, poorly sorted, saturated, hydro-carbon odor
6				28.2	BH14@5' (0921)		
7				7.4		SW	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
8				0.0			
9		DP	90%	0.0		CL	Tan, clay, mod. plasticity, moist, no odo
10				0.1			↓
11				0.0		SM	Tan, silty sand, fine grain, well sorted, moist, no odor, FeO2 orange stain
12				0.0			
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH15	SITE NAME: Ldoff 35-5TR	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, 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-SM	Tan, sand, fine to medium grain, poorly sorted, saturated, no odor
6				0.1			
7				0.0		CL	Tan, clay, mod. 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, reO2/ orange mottled stain
11				0.0			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH16	SITE NAME: Lokoff 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				0.0		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		CL	Tan, clay, moderate plasticity moist, no odor
8							↓
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
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BH17	**SITE NAME:** Wolff 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				0.1		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, saturated, no odor
5				0.0			↓
6				0.0			↓
7				0.0			↓
8				0.1		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 mottled stain
11				0.0			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TASMAN GEOSCIENCES

Borehole Logging Form

BOREHOLE ID: BKG02	SITE NAME: Idoff 35-5 TB	CLIENT NAME: PDC ENERGY
Date Completed: 4/14/22	Location:	
Drilling Company: S&K Tasman	Surface Completion: None DTW: ~3' TD: ~5'	
Type of Drill: Hand Auger	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	None			0.1		SC	Brown, clayey Sand, fine to medium grain, ~~moist~~ poorly sorted, moist, no odor
2				0.1			
3		HA	100%	0.0	BKG02@3' (1325)	SC	-As above, light tan
4				0.1	BKG02@4' (1330)	SW	Tan, Sand. fine to med. grain, poorly sorted, Saturated, no odor
5				0.1	BKG02@5' (1335)		
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

TASMAN GEOSCIENCES

BOREHOLE ID: BVG03	SITE NAME: Loloff 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	BVG03@3' (1345)		↓
4	▽			0.1	BVG03@4' (1348)	— SW	As above, light tan
5				0.0	BVG03@5' (1350)		Tan, Sand, fine to med grain, saturated, poorly sorted, no odor
6	X						
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							