



PDC Energy, Inc.
Fourth Quarter 2022 Groundwater Monitoring Summary

October 27, 2022

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

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

Site History and Background

On October 15, 2021, a historic hydrocarbon release was discovered beneath the former separator during decommissioning activities. Following the discovery, mitigation activities were initiated and between October 15, and December 3, 2021, approximately 980 cubic yards of impacted material were removed from the former excavation. During excavation activities, groundwater was encountered in the excavation at approximately 3 feet below ground surface (bgs). Groundwater vacuum recovery was conducted concurrent with excavation activities and approximately 220 barrels (bbls) of groundwater were removed from location. On April 14, and April 15, 2022, seventeen (17) monitoring wells (BH01 – BH17) were installed to confirm the absence of dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent.

Supplemental Site Investigation Activities

On November 2, 2022, supplemental site investigation activities were conducted to assess soil suitability for reclamation constituents in native soil surrounding the former excavation extent. Three background soil borings (BKG04 – BKG06) were advanced to approximately 5 feet bgs and nine samples were submitted to Summit Scientific Laboratory for analysis of pH, electrical conductivity (EC), and sodium adsorption ratio (SAR).

Soil analytical results indicated that pH, EC, and SAR were in exceedance of the COGCC Table 915-1 regulatory standards in native soil on site. The background soil boring locations are illustrated on Figure 1. Soil analytical results are summarized in Table 1. The GPS coordinates and field recorded VOC concentrations are summarized in Table 2. The laboratory analytical report is included in Attachment A. The boring logs are included as Attachment B.

Groundwater Monitoring Activities

On October 6, 2022, groundwater monitoring was conducted at all 17 monitoring wells (BH01 – BH17). Seventeen groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB

by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0 and total dissolved solids (TDS) by Method SM 2540C.


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

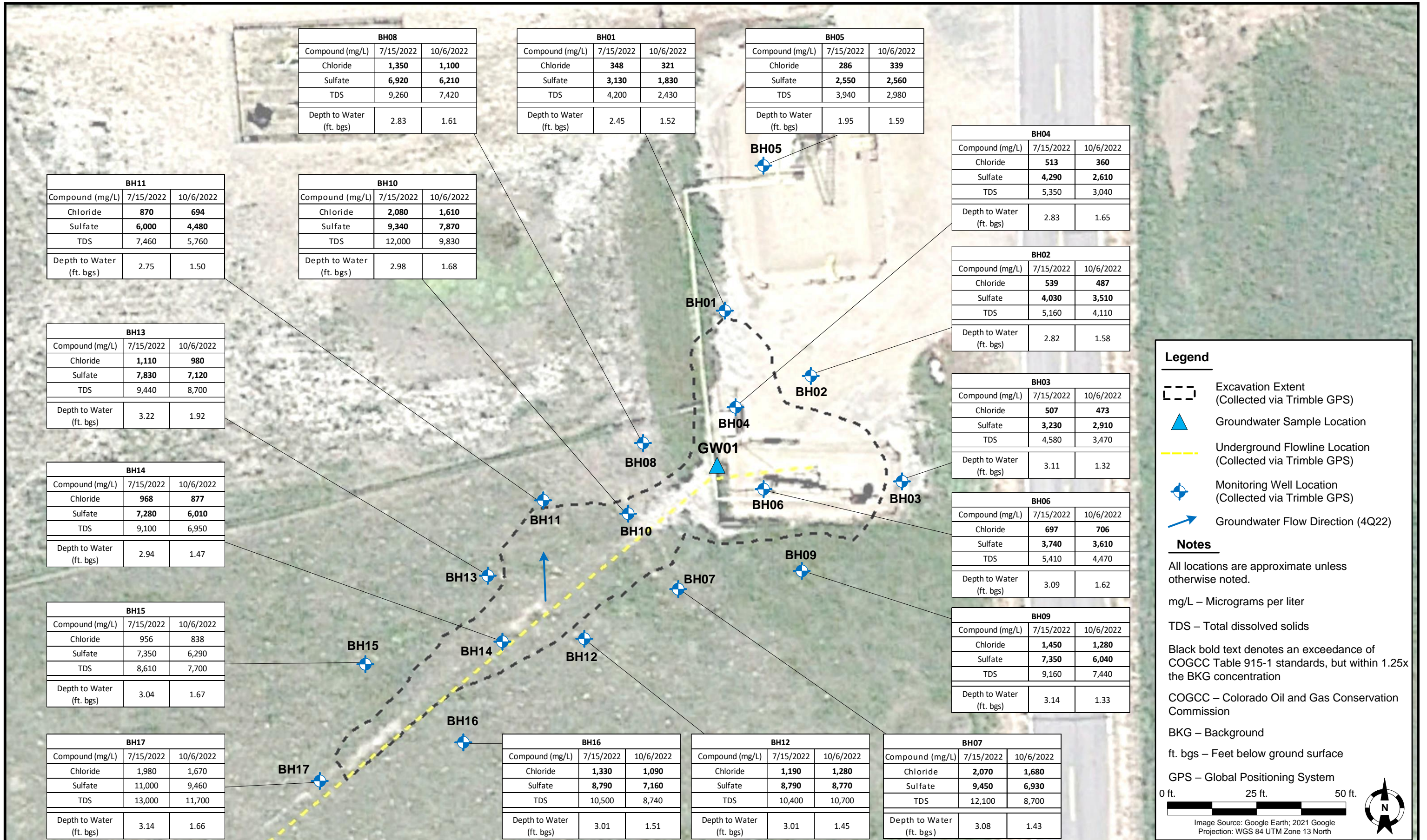
Current Remediation Activities and Path Forward

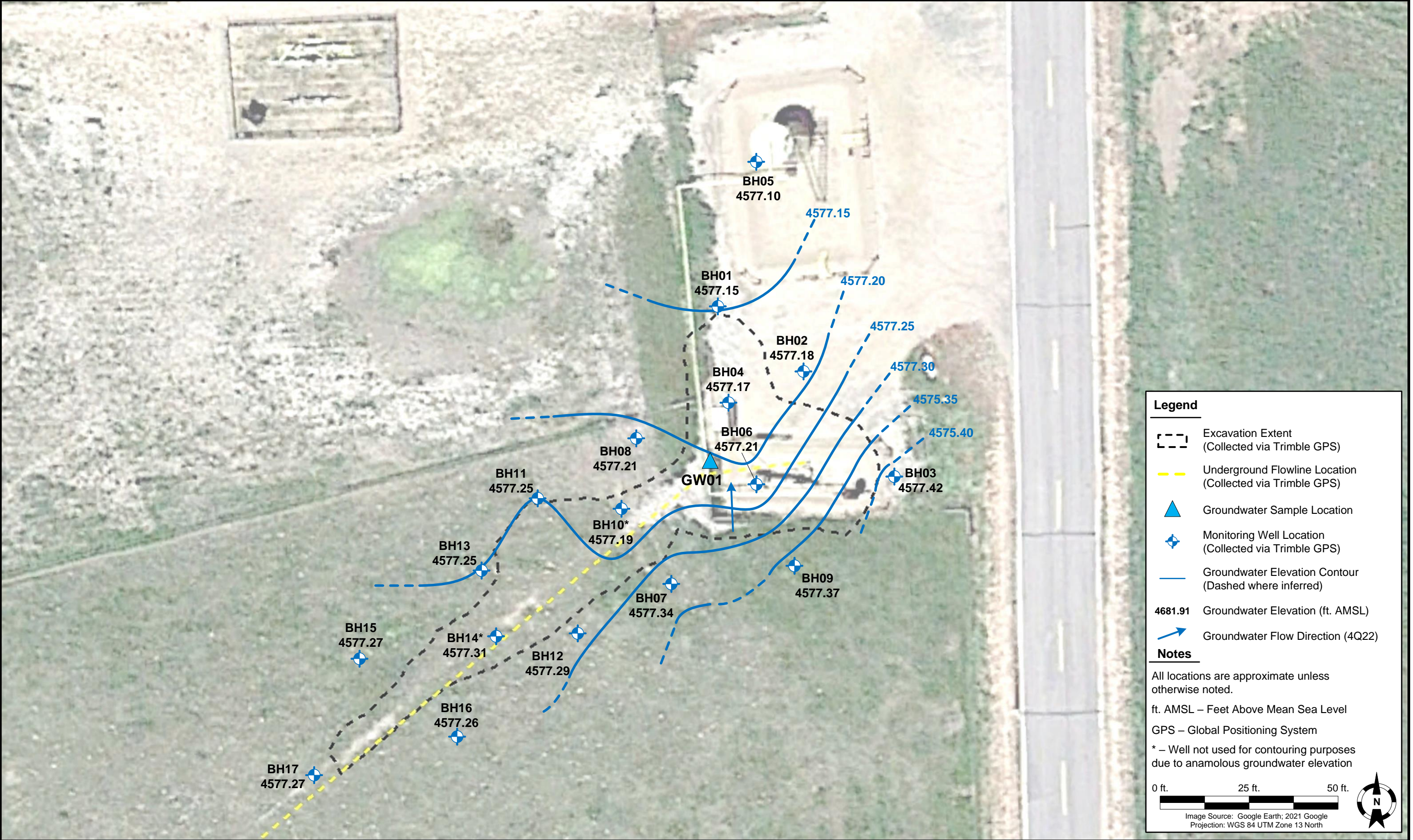
Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the second quarter 2022 and will remain the selected remediation strategy through the first quarter 2023.

First quarter 2023 groundwater sampling will be conducted in January 2023.



DATE: November 16, 2022	 Tasman, Inc. 6855 W. 119 th Ave. Broomfield, CO 80020	PDC Energy, Inc. – DJ Basin Former Loloff 35-5 Tank Battery NENE, Section 35, Township 5 North, Range 64 West Weld County, Colorado	SOIL BORING LOCATION MAP	FIGURE 1
DESIGNED BY: C. Hamlin				
DRAWN BY: S. Anderson				






DATE: November 4, 2022	 Tasman, Inc. 6855 W. 119 th Ave. Broomfield, CO 80020	PDC Energy, Inc. – DJ Basin Former Loloff 35-5 Tank Battery NENE, Section 35, Township 5 North, Range 64 West Weld County, Colorado	GROUNDWATER ELEVATION CONTOUR MAP (11/06/2022)	FIGURE 4
DESIGNED BY: C. Hamlin				
DRAWN BY: J. Marcus				

TABLE 1
FORMER LOLOFF 35-5 & 6 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

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

TABLE 1
FORMER LOLOFF 35-5 & 6 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC COMPOUNDS

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Soil Suitability for Reclamation Standard ⁽¹⁾			6-8.3	<4	<6	2
BH16 @ 2.5'	4/15/2022	2.5 ft. bgs	7.98	7.67	0.294	0.896
BH16 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.466	NA
BH17 @ 2.5'	4/15/2022	2.5 ft. bgs	7.88	9.77	0.967	0.854
BH17 @ 3.5'	4/15/2022	3.5 ft. bgs	NA	NA	0.401	NA
BKG02 @ 2.5'	4/14/2022	2.5 ft. bgs	8.02	4.24	0.204	0.777
BKG02 @ 4'	4/14/2022	4 ft. bgs	8.03	3.61	0.236	0.486
BKG02 @ 5'	4/14/2022	5 ft. bgs	8.48	2.50	0.211	0.485
BKG03 @ 2.5'	4/14/2022	4 ft. bgs	8.01	6.20	0.583	0.766
BKG03 @ 4'	4/14/2022	2.5 ft. bgs	8.15	4.26	0.198	0.645
BKG03 @ 5'	4/14/2022	5 ft. bgs	8.15	3.23	0.247	0.423
BKG04 @ 2.5'	11/2/2022	2.5 ft. bgs	8.08	6.23	12.9	NA
BKG04 @ 4'	11/2/2022	4 ft. bgs	7.81	5.06	15.3	NA
BKG04 @ 5'	11/2/2022	5 ft. bgs	8.18	3.80	16.3	NA
BKG05 @ 2.5'	11/2/2022	2.5 ft. bgs	8.08	4.48	10.2	NA
BKG05 @ 4'	11/2/2022	4 ft. bgs	8.29	2.98	10.2	NA
BKG05 @ 5'	11/2/2022	5 ft. bgs	8.44	1.83	10.8	NA
BKG06 @ 2.5'	11/2/2022	2.5 ft. bgs	8.36	2.03	8.00	NA
BKG06 @ 4'	11/2/2022	4 ft. bgs	8.11	1.60	6.61	NA
BKG06 @ 5'	11/2/2022	5 ft. bgs	8.20	1.51	6.11	NA

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

NA = Constituent not analyzed

 = Source

BOLD = Analytical result is in exceedance of applicable standard.

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

TABLE 2
FORMER LOLOFF 35-5 6 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 2
FORMER LOLOFF 35-5 6 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 2
FORMER LOLOFF 35-5 6 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
BKG04	11/2/2022	5 ft. bgs	40.362677	-104.508129	NC	0.2
BKG05	11/2/2022	5 ft. bgs	40.362454	-104.508325	NC	0.1
BKG06	11/2/2022	5 ft. bgs	40.362892	-104.507845	NC	0.2

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 3
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
BH01	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.45	4576.22
BH01	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.52	4577.15
BH02	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.17	4576.59
BH02	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.82	4575.94
BH02	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.58	4577.18
BH03	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.25	4576.49
BH03	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.11	4575.63
BH03	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.32	4577.42
BH04	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.21	4576.61
BH04	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.83	4575.99
BH04	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.65	4577.17
BH05	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.00	4576.69
BH05	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.95	4576.74
BH05	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.59	4577.10
BH06	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.18	4576.65
BH06	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.09	4575.74
BH06	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.62	4577.21
BH07	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.22	4576.55
BH07	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.08	4575.69
BH07	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.43	4577.34
BH08	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.21	4576.61
BH08	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.83	4575.99
BH08	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.61	4577.21
BH09	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.23	4576.47
BH09	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.14	4575.56
BH09	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.33	4577.37
BH10	4/20/2022	<1.0	<1.0	1.2	2.2	<1.0	6.8	<1.0	2.24	4576.63
BH10	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.98	4575.89
BH10	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.68	4577.19
BH11	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.05	4576.70
BH11	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.75	4576.00
BH11	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.50	4577.25
BH12	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.13	4576.61
BH12	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.01	4575.73
BH12	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.45	4577.29
BH13	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.43	4576.74
BH13	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.22	4575.95
BH13	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.92	4577.25
BH14	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.08	4576.70
BH14	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.94	4575.84
BH14	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.47	4577.31
BH15	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.18	4576.76
BH15	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.04	4575.90
BH15	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.67	4577.27
BH16	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.11	4576.66

TABLE 3
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	-	-
BH16	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.01	4575.76
BH16	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.51	4577.26
BH17	4/20/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.20	4576.73
BH17	7/15/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.14	4575.79
BH17	10/6/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.66	4577.27

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 4
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
BH01	7/15/2022	4,200	348	3,130	2.45	4576.22
BH01	10/6/2022	2,430	321	1,830	1.52	4577.15
BH02	4/20/2022	4,770	588	3,260	2.17	4576.59
BH02	7/15/2022	5,160	539	4,030	2.82	4575.94
BH02	10/6/2022	4,110	487	3,510	1.58	4577.18
BH03	4/20/2022	3,710	418	2,170	2.25	4576.49
BH03	7/15/2022	4,580	507	3,230	3.11	4575.63
BH03	10/6/2022	3,470	473	2,910	1.32	4577.42
BH04	4/20/2022	5,520	500	4,110	2.21	4576.61
BH04	7/15/2022	5,350	513	4,290	2.83	4575.99
BH04	10/6/2022	3,040	360	2,610	1.65	4577.17
BH05	4/20/2022	4,100	314	2,760	2.00	4576.69
BH05	7/15/2022	3,940	286	2,550	1.95	4576.74
BH05	10/6/2022	2,980	339	2,560	1.59	4577.10
BH06	4/20/2022	4,750	652	2,860	2.18	4576.65
BH06	7/15/2022	5,410	697	3,740	3.09	4575.74
BH06	10/6/2022	4,470	706	3,610	1.62	4577.21
BH07	4/20/2022	11,600	1,850	8,390	2.22	4576.55
BH07	7/15/2022	12,100	2,070	9,450	3.08	4575.69
BH07	10/6/2022	8,700	1,680	6,930	1.43	4577.34
BH08	4/20/2022	9,470	1,360	6,940	2.21	4576.61
BH08	7/15/2022	9,260	1,350	6,920	2.83	4575.99
BH08	10/6/2022	7,420	1,100	6,210	1.61	4577.21
BH09	4/20/2022	7,500	868	5,180	2.23	4576.47
BH09	7/15/2022	9,160	1,450	7,350	3.14	4575.56
BH09	10/6/2022	7,440	1,280	6,040	1.33	4577.37
BH10	4/20/2022	12,100	1,980	9,000	2.24	4576.63
BH10	7/15/2022	12,000	2,080	9,340	2.98	4575.89
BH10	10/6/2022	9,830	1,610	7,870	1.68	4577.19
BH11	4/20/2022	9,210	1,130	6,920	2.05	4576.70
BH11	7/15/2022	7,460	870	6,000	2.75	4576.00

TABLE 4
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	-	-
BH11	10/6/2022	5,760	694	4,480	1.50	4577.25
BH12	4/20/2022	10,900	1,360	9,100	2.13	4576.61
BH12	7/15/2022	10,400	1,190	8,790	3.01	4575.73
BH12	10/6/2022	10,700	1,280	8,770	1.45	4577.29
BH13	4/20/2022	9,370	1,050	7,540	2.43	4576.74
BH13	7/15/2022	9,440	1,110	7,830	3.22	4575.95
BH13	10/6/2022	8,700	980	7,120	1.92	4577.25
BH14	4/20/2022	9,160	955	7,440	2.08	4576.70
BH14	7/15/2022	9,100	968	7,280	2.94	4575.84
BH14	10/6/2022	6,950	877	6,010	1.47	4577.31
BH15	4/20/2022	8,900	1,010	7,170	2.18	4576.76
BH15	7/15/2022	8,610	956	7,350	3.04	4575.90
BH15	10/6/2022	7,700	838	6,290	1.67	4577.27
BH16	4/20/2022	11,600	1,460	9,420	2.11	4576.66
BH16	7/15/2022	10,500	1,330	8,790	3.01	4575.76
BH16	10/6/2022	8,740	1,090	7,160	1.51	4577.26
BH17	4/20/2022	15,000	2,180	11,400	2.20	4576.73
BH17	7/15/2022	13,000	1,980	11,000	3.14	4575.79
BH17	10/6/2022	11,700	1,670	9,460	1.66	4577.27

Notes:

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

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

ft. = Feet

AMSL = Above Mean Sea Level

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

 = 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

November 15, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Loloff 35-5,6 Tank Battery

Work Order #2211052

Enclosed are the results of analyses for samples received by Summit Scientific on 11/02/22 17:37. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG04@2.5'	2211052-01	Soil	11/02/22 13:15	11/02/22 17:37
BKG04@4'	2211052-02	Soil	11/02/22 13:20	11/02/22 17:37
BKG04@5'	2211052-03	Soil	11/02/22 13:25	11/02/22 17:37
BKG05@2.5'	2211052-04	Soil	11/02/22 13:18	11/02/22 17:37
BKG05@4'	2211052-05	Soil	11/02/22 13:20	11/02/22 17:37
BKG05@5'	2211052-06	Soil	11/02/22 13:21	11/02/22 17:37
BKG06@2.5'	2211052-07	Soil	11/02/22 13:29	11/02/22 17:37
BKG06@4'	2211052-08	Soil	11/02/22 13:31	11/02/22 17:37
BKG06@5'	2211052-09	Soil	11/02/22 13:34	11/02/22 17:37

Summit Scientific

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

Summit Scientific

S₂

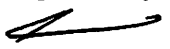
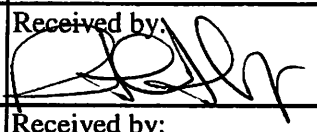
2211052

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

Page 1 of 1

Client:	PDC / Tasman	Project Manager:	Mark Longhurst
Address:	6855 W 119th Ave	E-Mail:	mark.longhurst@PDCE.com
City/State/Zip:	Broomfield/ CO/ 80020		
Phone:	303-487-1228	Project Name:	Loloff 35-5 and 6 Tank Battery
Sampler Name:	Sam Anderson	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	PAHs	Metals	
1	BK604 e 2.5'	11/2/22	1315	1			X			X										pH, EC, SAR by saturated paste
2	BK604 e 4'		1320																	
3	BK604 e 5'		1325																	
4	BK605 e 2.5'		1318																	
5	BK605 e 4'		1320																	
6	BK605 e 5'		1321																	
7	BK606 e 2.5'		1329																	
8	BK606 e 4'		1331																	
9	BK606 e 5'		1334																	
10	..																			

Relinquished by: 	Date/Time: 11/2/22 1508	Received by: Tasman's Lock Box	Date/Time: 11/2/22 1508	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 8.7 Samples Intact: (yes) No	Notes: * - just pH and EC
Relinquished by: Tasman's Lock Box	Date/Time: 11/22/22 1737	Received by: 	Date/Time: 11/22/22 1737		
Relinquished by:	Date/Time:	Received by:	Date/Time:		



Sample Receipt Checklist

S2 Work Order# 2211052Client: Pactasman Client Project ID: Loloff 355 / 6 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) 8.7 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$ ⁽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
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⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽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⁾ ?	-			
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 $\text{pH} \leq 2$ ⁽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

Date/Time

11-2-22 1737



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:
11/15/22 11:39

BKG04@2.5'
2211052-01 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	434	0.0623	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	480	0.0623	"	"	"	"	"	"	
Sodium	1640	0.0623	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.9	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.23	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

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:
11/15/22 11:39

BKG04@4'
2211052-02 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	454	0.0632		mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	922	0.0632		"	"	"	"	"	"	
Sodium	2470	0.0632		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	15.3	0.00100		units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	79.1			%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.81			pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	5.06	0.0100		mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

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:
11/15/22 11:39

BKG04@5'
2211052-03 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	273	0.0618	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	941	0.0618	"	"	"	"	"	"	
Sodium	2530	0.0618	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.3	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.9		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.18		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.80	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

BKG05@2.5'
2211052-04 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	373	0.0615	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	388	0.0615	"	"	"	"	"	"	
Sodium	1170	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.2	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.2		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.48	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

BKG05@4'
2211052-05 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	91.9	0.0647	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	157	0.0647	"	"	"	"	"	"	
Sodium	693	0.0647	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	10.2	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	77.3		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.29		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.98	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

BKG05@5'
2211052-06 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	166	0.0584	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	237	0.0584	"	"	"	"	"	"	
Sodium	923	0.0584	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.8	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.83	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

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:
11/15/22 11:39

BKG06@2.5'
2211052-07 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	150	0.0646	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	140	0.0646	"	"	"	"	"	"	
Sodium	566	0.0646	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	8.00	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	77.3		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.36		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.03	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

BKG06@4'
2211052-08 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	317	0.0591	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	308	0.0591	"	"	"	"	"	"	
Sodium	688	0.0591	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.61	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.11		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.60	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

BKG06@5'
2211052-09 (Soil)

Summit Scientific

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

Date Sampled: **11/02/22 13:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	257	0.0577	mg/L dry	1	BFK0310	11/11/22	11/13/22	EPA 6020B	
Magnesium	225	0.0577	"	"	"	"	"	"	
Sodium	556	0.0577	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/02/22 13:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	6.11	0.00100	units	1	BFK0360	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/02/22 13:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.7		%	1	BFK0252	11/09/22	11/10/22	Calculation	

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

Date Sampled: **11/02/22 13:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.20		pH Units	1	BFK0151	11/05/22	11/05/22	EPA 9045D	

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013

Date Sampled: **11/02/22 13:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1.51	0.0100	mmhos/cm	1	BFK0132	11/04/22	11/04/22	EPA 120.1	

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

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

Summit Scientific

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

Batch BFK0310 - General Preparation

Blank (BFK0310-BLK1)

Prepared: 11/11/22 Analyzed: 11/13/22

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

LCS (BFK0310-BS1)

Prepared: 11/11/22 Analyzed: 11/13/22

Calcium	4.56	0.0500	mg/L wet	5.00	91.2	70-130
Magnesium	4.91	0.0500	"	5.00	98.2	70-130
Sodium	5.12	0.0500	"	5.00	102	70-130

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

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

Summit Scientific

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

Batch BFK0252 - General Preparation

Duplicate (BFK0252-DUP1)		Source: 2211052-01		Prepared: 11/09/22 Analyzed: 11/10/22	
% Solids	82.5		%	80.2	2.80 20

Summit Scientific

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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

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

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

Batch BFK0151 - General Preparation

LCS (BFK0151-BS1)

Prepared & Analyzed: 11/05/22

pH	9.00	pH Units	9.18	98.0	95-105
----	------	----------	------	------	--------

Duplicate (BFK0151-DUP1)

Source: 2211052-01

Prepared & Analyzed: 11/05/22

pH	8.14	pH Units	8.08	0.740	20
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Summit Scientific

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



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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

Saturation Paste by the Western Region Soil, Plant and Water Reference Methods 2013 - Quality Control
Summit Scientific

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

Batch BFK0132 - General Preparation

Blank (BFK0132-BLK1)

Prepared & Analyzed: 11/04/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0132-BS1)

Prepared & Analyzed: 11/04/22

Specific Conductance (EC) 0.145 0.0100 mmhos/cm 0.150 96.7 95-105

Duplicate (BFK0132-DUP1)

Source: 2210421-14

Prepared & Analyzed: 11/04/22

Specific Conductance (EC) 1.71 0.0100 mmhos/cm 1.73 1.22 20

Summit Scientific

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



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

Project: Loloff 35-5,6 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
11/15/22 11:39

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

October 20, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Loloff 35-5 Tank Battery

Work Order #2210101

Enclosed are the results of analyses for samples received by Summit Scientific on 10/06/22 17:34. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



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

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/22 15:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2210101-01	Water	10/06/22 10:48	10/06/22 17:34
BH02	2210101-02	Water	10/06/22 10:36	10/06/22 17:34
BH03	2210101-03	Water	10/06/22 10:23	10/06/22 17:34
BH04	2210101-04	Water	10/06/22 10:42	10/06/22 17:34
BH05	2210101-05	Water	10/06/22 10:30	10/06/22 17:34
BH06	2210101-06	Water	10/06/22 12:59	10/06/22 17:34
BH07	2210101-07	Water	10/06/22 12:51	10/06/22 17:34
BH08	2210101-08	Water	10/06/22 12:00	10/06/22 17:34
BH09	2210101-09	Water	10/06/22 12:44	10/06/22 17:34
BH10	2210101-10	Water	10/06/22 12:27	10/06/22 17:34
BH11	2210101-11	Water	10/06/22 11:48	10/06/22 17:34
BH12	2210101-12	Water	10/06/22 12:37	10/06/22 17:34
BH13	2210101-13	Water	10/06/22 12:14	10/06/22 17:34
BH14	2210101-14	Water	10/06/22 12:23	10/06/22 17:34
BH15	2210101-15	Water	10/06/22 11:56	10/06/22 17:34
BH16	2210101-16	Water	10/06/22 12:08	10/06/22 17:34
BH17	2210101-17	Water	10/06/22 11:42	10/06/22 17:34

Summit Scientific

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

Summit Scientific

S₂

2210101.1

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

Page 1 of 2

Client: PDC/Tasman Project Manager: Mark Longhurst
Address: 6855 W 119th Ave E-Mail: Mark.longhurst@pdce.com
City/State/Zip: Broomfield CO 80020
Phone: 303-487-1228 Project Name: Lodoff 35-5 Tank Battery
Sampler Name: Chase Jonjak, Gabe Semenza Project Number: CJ

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions					
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH-(C6-C36)	TMB's(1,2,4)&(1,3,5)	Boron - HWS	pH, EC, SAR	PAH - 915	Metals - 915		TDS, Cl, SO ₄				
1	BH01	10/05/2022	1048	4	X		X		X					X		X									
2	BH02		1036																						
3	BH03		1023																						
4	BH04		1042																						
5	BH05		1030																						
6	BH06		1259																						
7	BH07		1251																						
8	BH08		1200																						
9	BH09		1244																						
10	BH10		1227				X																		

Relinquished by: <u>Chase J</u>	Date/Time: <u>10/05/2022 1452</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>10/05/2022 1452</u>	Turn Around Time (Check) Same Day <u> </u> 72 hours <u> </u> 24 hours <u> </u> Standard <u>X</u> 48 hours <u> </u> Sample Integrity: Temperature Upon Receipt: <u>6.6</u> Samples Intact: <u>Yes</u> No	Notes: Samples with no HCl due to reactions.
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>10/06/2022 1734</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10/06/2022 1734</u>		
Relinquished by: <u> </u>	Date/Time: <u> </u>	Received by: <u> </u>	Date/Time: <u> </u>		

Summit Scientific

2210101.2

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 2 of 2

Client: PDC/Tasman

Project Manager: Mark Longhurst

Address: 6855 W 119th Ave

E-Mail: Mark.longhurst@pdce.com

City/State/Zip: Broomfield CO 80020

Phone: 303-487-1228

Project Name: Loff 35-5 Tank Battery

Sampler Name: Chase Jonjak, Gabresenza

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions			
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH-(C6-C36)	TMB's(1,2,4)&(1,3,5)	Boron - HWS	pH, EC, SAR	PAH - 915	Metals - 915		TDS, Cl, SO ₄		
1	BH11	10/6/2022	1148	4	3		1		X					X		X						X	
2	BH12		1237				X																
3	BH13		1214		3		1																
4	BH14		1223				X																
5	BH15		1156				X																
6	BH16		1208				X																
7	BH17		1142				X																
8																							
9																							
10																							

Relinquished by: Chase 10/6/2022 1452	Received by: Tasman Lockbox 10/6/2022 1452	Turn Around Time (Check) Same Day — 72 hours — 24 hours — Standard X 48 hours —	Notes: Samples with no HCl do not have reactions
Relinquished by: Tasman Lockbox 10/6/22 1734	Received by: 10/6/22 1734	Sample Integrity: Temperature Upon Receipt: 6.6	
Relinquished by:	Received by:	Samples Intact: Yes No	

S₂2/2
Sample Receipt Checklist

S2 Work Order# 2010101

Client: PacTasmanClient Project ID: Loloff 35-5 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air ☐Soil/Solid ☐Water ☒Other ☐

Temp (°C)

Ce.Ce

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Custodian Printed Name

10-6-22
Date/Time
21:00



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

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

Reported:
10/20/22 15:57

BH01
2210101-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		91.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	321	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	1830	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 10:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	2430	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH02
2210101-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		83.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	487	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	3510	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 10:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	4110	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH03
2210101-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	473	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	2910	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 10:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3470	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH04
2210101-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 10:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 10:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 10:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	360	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	2610	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 10:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	3040	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH05
2210101-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		83.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	339	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	2560	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2980	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH06
2210101-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		87.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		75.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	706	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	3610	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:59**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	4470	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	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 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/22 15:57

BH07
2210101-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	1680	12.0		mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	6930	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:51**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	8700	10.0		mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH08
2210101-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		80.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1100	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	6210	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	7420	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH09
2210101-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		81.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.9 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1280	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	6040	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:44**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	7440	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH10
2210101-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		43.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.6 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1610	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	7870	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:27**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	9830	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH11
2210101-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		87.1 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	694	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	4480	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	5760	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH12
2210101-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		85.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.4 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1280	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	8770	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	10700	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH13
2210101-13 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		88.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		77.4 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	980	12.0		mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	7120	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	8700	10.0		mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH14
2210101-14 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		81.7 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	877	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	6010	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:23**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	6950	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH15
2210101-15 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		85.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	838	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	6290	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 11:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	7700	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH16
2210101-16 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.3 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1090	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	7160	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 12:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	8740	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

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

Reported:
10/20/22 15:57

BH17
2210101-17 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/06/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFJ0181	10/07/22	10/09/22	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: **10/06/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		75.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		69.2 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/06/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	1670	12.0	mg/L	200	BFJ0335	10/13/22	10/13/22	EPA 300.0	
Sulfate	9460	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/06/22 11:42**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	11700	10.0	mg/L	1	BFJ0291	10/12/22	10/12/22	SM2540C	

Summit Scientific

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

Project: Loloff 35-5 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/22 15:57

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0181 - EPA 5030 Water MS

Blank (BFJ0181-BLK1)

Prepared: 10/07/22 Analyzed: 10/09/22

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	5.57		"	13.3		41.8	23-173			
Surrogate: Toluene-d8	13.9		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.4	21-167			

LCS (BFJ0181-BS1)

Prepared: 10/07/22 Analyzed: 10/09/22

Benzene	30.9	1.0	ug/l	41.7		74.1	51-132			
Toluene	37.4	1.0	"	41.7		89.9	51-138			
Ethylbenzene	40.2	1.0	"	41.7		96.5	58-146			
m,p-Xylene	81.0	2.0	"	83.3		97.2	57-144			
o-Xylene	40.4	1.0	"	41.7		96.8	53-146			
Naphthalene	32.2	1.0	"	41.7		77.3	70-130			
1,2,4-Trimethylbenzene	40.7	1.0	"	41.7		97.8	70-130			
1,3,5-Trimethylbenzene	42.4	1.0	"	41.7		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.7		"	13.3		95.0	23-173			
Surrogate: Toluene-d8	14.1		"	13.3		106	20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		92.6	21-167			

Matrix Spike (BFJ0181-MS1)

Source: 2210101-01

Prepared: 10/07/22 Analyzed: 10/09/22

Benzene	30.4	1.0	ug/l	41.7	ND	72.9	34-141			
Toluene	37.1	1.0	"	41.7	ND	89.1	27-151			
Ethylbenzene	40.7	1.0	"	41.7	ND	97.8	29-160			
m,p-Xylene	80.6	2.0	"	83.3	ND	96.8	20-166			
o-Xylene	40.8	1.0	"	41.7	ND	97.9	33-159			
Naphthalene	41.5	1.0	"	41.7	ND	99.6	70-130			
1,2,4-Trimethylbenzene	42.5	1.0	"	41.7	ND	102	70-130			
1,3,5-Trimethylbenzene	43.4	1.0	"	41.7	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.8	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.6	21-167			

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:
10/20/22 15:57

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

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

Batch BFJ0181 - EPA 5030 Water MS

Matrix Spike Dup (BFJ0181-MSD1)	Source: 2210101-01			Prepared: 10/07/22 Analyzed: 10/09/22						
Benzene	30.6	1.0	ug/l	41.7	ND	73.5	34-141	0.820	30	
Toluene	37.2	1.0	"	41.7	ND	89.4	27-151	0.296	30	
Ethylbenzene	40.8	1.0	"	41.7	ND	98.0	29-160	0.221	30	
m,p-Xylene	80.8	2.0	"	83.3	ND	97.0	20-166	0.248	30	
o-Xylene	40.6	1.0	"	41.7	ND	97.5	33-159	0.393	30	
Naphthalene	43.2	1.0	"	41.7	ND	104	70-130	3.97	30	
1,2,4-Trimethylbenzene	42.5	1.0	"	41.7	ND	102	70-130	0.0470	30	
1,3,5-Trimethylbenzene	43.5	1.0	"	41.7	ND	104	70-130	0.207	30	
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2	21-167			

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:
10/20/22 15:57

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BFJ0335 - General Preparation

Blank (BFJ0335-BLK1)

Prepared & Analyzed: 10/13/22

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BFJ0335-BS1)

Prepared & Analyzed: 10/13/22

Chloride	3.17	0.0600	mg/L	3.00	106	90-110
Sulfate	15.1	0.300	"	15.0	101	90-110

Duplicate (BFJ0335-DUP1)

Source: 2210101-01

Prepared & Analyzed: 10/13/22

Chloride	322	12.0	mg/L	321	0.436	20
Sulfate	1970	60.0	"	1830	7.54	20

Matrix Spike (BFJ0335-MS1)

Source: 2210101-01

Prepared & Analyzed: 10/13/22

Chloride	948	12.0	mg/L	600	321	105	80-120
Sulfate	5160	60.0	"	3000	1830	111	80-120

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:
10/20/22 15:57

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFJ0291 - General Preparation

Blank (BFJ0291-BLK1)

Prepared & Analyzed: 10/12/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFJ0291-DUP1)

Source: 2210101-01

Prepared & Analyzed: 10/12/22

Total Dissolved Solids 2490 10.0 mg/L 2430 2.15 20

Summit Scientific

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



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

Project: Loloff 35-5 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/20/22 15:57

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****Borehole Logging Form**

BOREHOLE ID: 8K604		SITE NAME: Luloff 35-5 und 6 TB		CLIENT NAME: PDC ENERGY				
Date Completed: 11/2/22		Location:						
Drilling Company: Tasman		Surface Completion: NA		DTW: 3' TD: 5'				
Type of Drill: HA = Hand Auger		Geologist: Sam Anderson		Project Manager: B.Nelson				
Bit Size: 2 3/8"		Logging Method:						
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	e	↑	↑	0.1		CL	0-3' = Brown, clay, moderate to low plasticity, dry, no odor or staining	
2				0.1	8K604 @ 2.5'			
3		HA	100%	0.1	1315			
4		2' @ high mud			0.2	8K604 @ 4'	SP	3-5' = Tan / Brown, sand, well sorted, fine grain, subangular, organic odor / no stain.
5			↓	↓	0.1	8K604 @ 5'		
6	X							
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

**TASMAN****Borehole Logging Form**

BOREHOLE ID: BK605		SITE NAME: Leloff 35-S and 6 TB		CLIENT NAME: PDC ENERGY			
Date Completed: 11/2/22		Location:					
Drilling Company: Tasman		Surface Completion: NA		DTW: 3' TD: 5'			
Type of Drill: Hand Auger		Geologist: Sam Anderson		Project Manager: B. Nelson			
Bit Size: 2 3/8"		Logging Method:					
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	X	↑	↑	0.0		CL	0-2' = Brown, clay, moderate plasticity, moist no HC odor / staining
2				0.0	BK605 2.5' 1318		
3		HA	100%	0.0		SP	2-5' = Brown/tan, sand, well sorted, fine grain, subrounded, no odor / staining
4				0.0	BK605 4' 1320		separated @ 3'
5				0.1	BK605 5' 1321		
6							
7							
8							
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22							
23							
24							
25							



TASMAN

Borehole Logging Form

BOREHOLE ID: BK606	SITE NAME: LoloFF 35-5 and 6 TB	CLIENT NAME: PDC ENERGY
Date Completed: 11/2/22	Location:	
Drilling Company: Tasman	Surface Completion: N/A	DTW: 3' TD: 5'
Type of Drill: Hand Auger	Geologist: Sam Anderson	Project Manager: B.Nelson
Bit Size: 2 3/8"	Logging Method:	

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	0-2' = Brown, clay, low plasticity, moist, no odor/staining.
2				0.2	BK606 2.5'	SP	2-5' = Tan, sand, well sorted, fine grain, silty, organic odor/staining, saturated @ 2.5'
3		HA	100%	0.1	1339		
4				0.1	BK606 4'		
5				0.1	1331		
6	X			0.1	BK606 5'		
7					1334		
8							
9							
10							
11							
12							
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