

TABLE 1
FORMER TOTEMS 44-24 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

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)	Fluorene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic ⁽⁵⁾ (mg/kg)	Cadmium ⁽⁶⁾ (mg/kg)	Lead ⁽⁷⁾ (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	240	18	24	0.68	71	400
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.54	0.006	0.019	0.29	0.38	14
AST01 @ 0-6"	10/21/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	NA	NA	NA	NA	NA	NA
SEP01-FL @ 4'	10/21/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	180	NA	NA	NA	NA	NA	NA
SEP01-DL-B @ 10.5'	10/24/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.24	0.837	14.8
SEP01-DL-S @ 5'	10/24/2022	5 ft. bgs	<0.0020	<0.0050	0.59	0.053	0.42	0.017	0.37	463	<0.00500	0.382	0.353	1.66	<0.246	10.1
PWV01-B @ 11'	10/24/2022	11 ft. bgs	<0.0020	<0.0050	0.091	0.27	0.45	<0.0050	0.037	27.00	<0.00500	0.0360	0.0909	0.781	0.411	6.76
PWV01-W @ 9'	10/24/2022	9 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	1.1	<0.00500	0.0146	0.0468	0.809	0.688	15.2
SS01 @ 9'	10/24/2022	9 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.43	<0.0038	89.3	0.00840	0.0613	0.147	10.9	0.240	10.6
SS02 @ 10.5'	10/26/2022	10.5 ft. bgs	0.0088	<0.0050	2.1	17	16	14	2.3	880	<0.00500	0.0656	0.164	1.46	<0.234	4.65
SS03 @ 14.5'	10/26/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	3.20	<0.200	7.54
SS04 @ 5'	11/1/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	10.8	0.339	12.6
SS05 @ 10.5'	11/1/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.32	<0.200	6.50
SS06 @ 14.5'	11/1/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.98	<0.200	6.45
SS07 @ 14.5'	11/1/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	9.70	0.269	8.98
SS08 @ 14.5'	11/1/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	10.8	0.323	9.67
SS09 @ 5'	11/1/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.53	<0.200	16.5
SS10 @ 10.5'	11/1/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.25	0.218	8.66
SS11 @ 14.5'	11/1/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	10.6	0.260	9.33
SS12 @ 5'	11/07/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.71	0.350	11.6
SS13 @ 10.5'	11/07/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	3.35	<0.200	11.1
SS14 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	44.8	0.717	17.3
SS15 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	24.7	0.460	8.22
SS16 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	9.33	0.235	6.55
SS17 @ 10.5'	11/07/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.21	<0.200	8.62
SS18 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.57	0.215	9.77
SS19 @ 5'	11/07/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	7.29	0.377	12.2
SS20 @ 5'	11/07/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	16.1	0.408	13.1
SS21 @ 10.5'	11/07/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.58	<0.200	10.2
SS22 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.28	<0.200	7.73
SS23 @ 14.5'	11/07/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.14	<0.200	6.65
SS24 @ 14.5'	11/08/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	3.43	<0.200	9.52
SS25 @ 14.5	11/08/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.14	0.216	6.30
SS26 @ 5'	11/09/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	7.29	0.326	14.0
SS27 @ 10.5'	11/09/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.48	<0.200	9.16
SS28 @ 14.5'	11/09/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.28	<0.200	8.35
SS29 @ 10.5'	11/09/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.14	0.253	12.0
SS30 @ 14.5'	11/09/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.49	<0.200	8.70
SS31 @ 14.5'	11/09/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.22	0.249	10.1
SS32 @ 5'	11/14/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.04	0.283	10.9
SS33 @ 10.5'	11/14/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	29.4	0.571	9.01
SS34 @ 14.5'	11/14/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.40	0.209	9.36
SS35 @ 5'	11/17/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.89	0.337	12.6
SS36 @ 10.5'	11/17/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	7.02	0.361	13.0
SS37 @ 14.5'	11/17/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.64	0.308	15.4
SS38 @ 14.5'	11/17/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.44	0.313	13.2
SS39 @ 5'	11/17/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.71	0.361	13.7
SS40 @ 10.5'	11/17/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	1.78	<0.200	12.9
SS41 @ 14.5'	11/17/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.16	0.276	13.0
SS42 @ 14.5'	11/21/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	3.39	0.212	7.41
SS43 @ 14.5'	11/21/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	2.93	0.287	10.7
SS44 @ 5'	11/21/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	6.00	0.384	12.2
SS45 @ 10.5'	11/21/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	15.1	0.223	8.34
SS46 @ 14.5'	11/21/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.24	<0.200	7.26
SS47 @ 5'	11/21/2022	5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	5.04	0.345	10.8
SS48 @ 10.5'	11/21/2022	10.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	7.43	0.371	13.1
SS49 @ 14.5'	11/21/2022	14.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	4.75	<0.200	10.2
SS50 @ 5'	11/22/20															

TABLE 1
FORMER TOTEMS 44-24 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
CONTAMINANTS OF CONCERN

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)	Fluorene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Arsenic ⁽⁵⁾ (mg/kg)	Cadmium ⁽⁶⁾ (mg/kg)	Lead ⁽⁷⁾ (mg/kg)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	240	18	24	0.68	71	400
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.54	0.006	0.019	0.29	0.38	14

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.
5. Concentration used for arsenic exceedances is 1.25 times the average of background results (22.42 mg/kg x 1.25 = 28.02 mg/kg)
6. Concentration used for cadmium exceedances is 1.25 times the average of background results excluding non-detect results (0.414 mg/kg x 1.25 = 0.518 mg/kg)
7. Concentration used for lead exceedances is 1.25 times the average of background results (11.54 mg/kg x 1.25 = 14.43 mg/kg)

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 extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

 = Source material characterization sample, material excavated and transported off-site for disposal

ft. = Feet

in. = Inches

bgs = Below ground surface

RED = Analytical result is in exceedance of applicable standard.

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

TABLE 2
FORMER TOTEMS 44-24 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
BKG01 @ 2.5'	10/24/2022	2.5 ft. bgs	8.17	4.70	12.4	NA
BKG01 @ 5'	10/24/2022	5 ft. bgs	8.60	1.86	13.8	NA
BKG01 @ 7'	10/24/2022	7 ft. bgs	8.63	1.28	6.84	NA
BKG01 @ 10.5'	10/24/2022	10.5 ft. bgs	8.34	1.88	4.66	NA
BKG02 @ 2.5	11/03/2022	2.5 ft. bgs	8.61	4.54	26.9	NA
BKG02 @ 5'	11/03/2022	5 ft. bgs	8.28	7.98	22.0	NA
BKG02 @ 7'	11/03/2022	7 ft. bgs	8.29	9.81	18.8	NA
BKG02 @ 10.5'	11/03/2022	10.5 ft. bgs	7.99	4.58	6.94	NA
BKG02 @ 14.5'	11/03/2022	14.5 ft. bgs	8.12	2.12	9.20	NA
SEP01-DL-B @ 10.5'	10/24/2022	10.5 ft. bgs	7.86	0.560	3.30	0.107
SEP01-DL-S @ 5'	10/24/2022	5 ft. bgs	8.17	1.35	11.7	0.528
PWV01-B @ 11'	10/24/2022	11 ft. bgs	7.71	5.19	5.06	0.355
PWV01-W @ 9'	10/24/2022	9 ft. bgs	7.88	4.56	3.55	0.355
SS01 @ 9'	10/24/2022	9 ft. bgs	7.97	4.33	4.34	0.255
SS02 @ 10.5'	10/26/2022	10.5 ft. bgs	8.58	0.682	6.32	0.208
SS54 @ 2.5'	11/22/2022	2.5 ft. bgs	8.15	7.48	14.3	0.625
SS55 @ 2.5'	11/22/2022	2.5 ft. bgs	8.35	6.78	25.2	0.667
SS61 @ 2.5'	11/28/2022	2.5 ft. bgs	8.40	3.99	19.2	0.364
SS65 @ 2.5'	11/30/2022	2.5 ft. bgs	8.11	3.02	9.47	0.588

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

BOLD = Analytical result is in exceedance of applicable standard.

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

 = Source material characterization sample, material excavated and transported off-site for dispos

NA = Constituent not analyzed

TABLE 3
FORMER TOTEMS 44-24 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS - PAHs

Sample ID	Date Sampled	Depth	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ^(1,2)			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^(1,2,3)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SEP01-DL-B @ 10.5'	10/24/2022	10.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL-S @ 5'	10/24/2022	5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.382	0.353
PWV01-B @ 11'	10/24/2022	11 ft bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0360	0.0909
PWV01-W @ 9'	10/24/2022	9 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0146	0.0468
SS01 @ 9'	10/24/2022	9 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00840	<0.00500	<0.00500	0.0613	0.147
SS02 @ 10.5'	10/26/2022	10.5 ft. bgs	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0656	0.164

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.

COGCC = Colorado Oil and Gas Conservation Commission

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

PAHs = Polycyclic aromatic hydrocarbons

Benz(a) = Benzantracene

Benzo(a) = Benzopyrene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

A,H = Dibenzoanthracene

1,2,3-CD = Indenopyrene

M = Methylanthracene

Source material characterization sample, material excavated and transported off-site for disposal

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

TABLE 4
FORMER TOTEMS 44-24 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE
METALS

Sample ID	Date Sampled	Depth	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ^(1,2)			0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^(1,2,3)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
BKG01 @ 2.5'	10/24/2022	2.5 ft. bgs	3.67	136	0.315	<0.30 ⁽⁴⁾	9.76	10.4	9.88	0.439	0.0633	33.9
BKG01 @ 5'	10/24/2022	5 ft. bgs	4.95	156	0.391	<0.30 ⁽⁴⁾	10.8	12.8	11.2	0.295	0.0718	39.8
BKG01 @ 7'	10/24/2022	7 ft. bgs	7.55	69.5	0.683	<0.30 ⁽⁴⁾	14.2	13.2	24.8	0.787	0.0528	93.7
BKG01 @ 10.5'	10/24/2022	10.5 ft. bgs	0.821	18.3	<0.204	<0.30 ⁽⁴⁾	7.79	7.46	4.29	<0.265	<0.0204	25.8
BKG02 @ 2.5	11/03/2022	2.5 ft. bgs	1.21	141	0.304	<0.30 ⁽⁴⁾	7.83	11.1	8.17	0.355	0.0532	26.5
BKG02 @ 5'	11/03/2022	5 ft. bgs	0.866	38.7	<0.227	<0.30 ⁽⁴⁾	6.50	7.22	4.08	0.360	<0.0227	22.5
BKG02 @ 7'	11/03/2022	7 ft. bgs	0.996	24.1	<0.235	<0.30 ⁽⁴⁾	10.1	13.0	5.82	<0.305	0.0362	21.7
BKG02 @ 10.5'	11/03/2022	10.5 ft. bgs	1.35	79.5	0.426	<0.30 ⁽⁴⁾	8.38	12.9	10.5	<0.298	0.0527	30.5
BKG02 @ 14.5'	11/03/2022	14.5 ft. bgs	5.64	128	0.457	<0.30 ⁽⁴⁾	13.2	16.6	11.9	<0.310	0.0927	35.6
BKG03 @ 2.5'	11/21/2022	2.5 ft. bgs	5.69	72.7	0.345	<0.30 ⁽⁴⁾	11.2	12.0	12.1	0.832	0.0573	38.5
BKG03 @ 5'	11/21/2022	5 ft. bgs	3.41	60.1	0.292	<0.30 ⁽⁴⁾	10.8	9.88	12.3	<0.309	0.0351	33.0
BKG03 @ 7'	11/21/2022	7 ft. bgs	5.02	35.5	<0.229	<0.30 ⁽⁴⁾	13.0	12.2	17.3	<0.297	<0.0229	61.5
BKG03 @ 10.5'	11/21/2022	10.5 ft. bgs	3.65	41.5	0.517	<0.30 ⁽⁴⁾	15.1	16.5	22.7	0.427	0.0620	75.9
BKG03 @ 14.5	11/21/2022	14.5 ft. bgs	269	18.8	<0.235	<0.30 ⁽⁴⁾	5.56	6.35	8.28	<0.306	<0.0235	27.5
SEP01-DL-B @ 10.5'	10/24/2022	10.5 ft. bgs	1.24 ⁽⁵⁾	23.7	0.837	<0.30 ⁽⁴⁾	16.4	14.8	34.3	0.441 ⁽⁸⁾	0.0515	127
SEP01-DL-S @ 5'	10/24/2022	5 ft. bgs	1.66 ⁽⁵⁾	72.0	<0.246	<0.30 ⁽⁴⁾	10.7	10.1	8.93	0.568 ⁽⁸⁾	0.0615	33.4
PWV01-B @ 11'	10/24/2022	11 ft. bgs	0.781 ⁽⁵⁾	25.4	0.411 ⁽⁶⁾	<0.30 ⁽⁴⁾	7.65	6.76	9.00	<0.296	0.0236	32.3
PWV01-W @ 9'	10/24/2022	9 ft. bgs	0.809 ⁽⁵⁾	13.2	0.688	<0.30 ⁽⁴⁾	12.1	15.2 ⁽⁷⁾	13.5	<0.296	<0.0228	40.8
SS01 @ 9'	10/24/2022	9 ft. bgs	10.9 ⁽⁵⁾	33.6	0.240	<0.30 ⁽⁴⁾	7.59	10.6	6.08	0.403 ⁽⁸⁾	0.0452	45.4
SS02 @ 10.5'	10/26/2022	10.5 ft. bgs	1.46 ⁽⁵⁾	25.7	<0.234	<0.30 ⁽⁴⁾	6.34	4.65	3.98	<0.304	<0.0234	20.4

Notes:

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.
- Compound falls within COGCC Table 915-1 Footnote 9.
- Concentration used for arsenic exceedances is 1.25 times the average of background results (22.42 mg/kg x 1.25 = 28.02 mg/kg)
- Concentration used for cadmium exceedances is 1.25 times the average of background results excluding non-detect results (0.414 mg/kg x 1.25 = 0.518 mg/kg)
- Concentration used for lead exceedances is 1.25 times the average of background results (11.54 mg/kg x 1.25 = 14.43 mg/kg)
- Concentration used for selenium exceedances is 1.25 times the average of background results excluding non-detect results (0.499 mg/kg x 1.25 = 0.624 mg/kg)

COGCC = Colorado Oil and Gas Conservation Commission

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

mg/kg = Milligrams per kilogram

 = Source material characterization sample, material excavated and transported off-site for disposal

ft. = Feet

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

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

TABLE 5
FORMER TOTEMS 44-24 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	10/31/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.5	-

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

TABLE 6
FORMER TOTEMS 44-24 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
AST01 @ 0-6"	10/21/2022	0-6 in. bgs	40.029639	-104.948958	0.9	0.0
SEP01-FL @ 4'	10/21/2022	4 ft. bgs	40.029657	-104.949274	0.8	0.2
SEP01-DL-B @ 10.5'	10/24/2022	10.5 ft. bgs	40.029650	-104.949238	NC	0.0
SEP01-DL-S @ 5'	10/24/2022	5 ft. bgs	40.029630	-104.949232	0.8	855
PWV01-B @ 11'	10/24/2022	11 ft. bgs	40.029686	-104.948997	NC	899
PWV01-W @ 9'	10/24/2022	9 ft. bgs	40.029683	-104.949025	0.8	1,079
SS01 @ 9'	10/24/2022	9 ft. bgs	NG	NG	NC	1,898
SS02 @ 10.5'	10/26/2022	10.5 ft. bgs	40.029675	-104.948998	NC	3,065
SS03 @ 14.5'	10/26/2022	14.5 ft. bgs	40.029693	-104.949013	NC	8.0
SS04 @ 5'	11/1/2022	5 ft. bgs	40.029682	-104.948955	0.9	0.0
SS05 @ 10.5'	11/1/2022	10.5 ft. bgs	40.029682	-104.948955	0.9	0.0
SS06 @ 14.5'	11/1/2022	14.5 ft. bgs	40.029682	-104.948955	0.9	0.0
SS07 @ 14.5'	11/1/2022	14.5 ft. bgs	40.029599	-104.948966	NC	1.1
SS08 @ 14.5'	11/1/2022	14.5 ft. bgs	40.029662	-104.948952	NC	0.0
SS09 @ 10.5'	11/1/2022	10.5 ft. bgs	40.029613	-104.948915	0.9	0.0
SS10 @ 5'	11/1/2022	5 ft. bgs	40.029613	-104.948915	0.9	0.5
SS11 @ 14.5'	11/1/2022	14.5 ft. bgs	40.029613	-104.948915	0.9	0.0
SS12 @ 5'	11/07/2022	5 ft. bgs	40.029637	-104.948862	1.0	0.0
SS13 @ 10.5'	11/07/2022	10.5 ft. bgs	40.029637	-104.948862	1.0	0.0
SS14 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029637	-104.948862	1.0	0.0
SS15 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029637	-104.948879	NC	0.0
SS16 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029686	-104.948873	NC	0.0
SS17 @ 10.5'	11/07/2022	10.5 ft. bgs	40.029692	-104.948841	1.0	0.0
SS18 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029692	-104.948841	1.0	0.0
SS19 @ 5'	11/07/2022	5 ft. bgs	40.029692	-104.948841	1.0	0.0
SS20 @ 5'	11/07/2022	5 ft. bgs	40.029592	-104.949028	1.0	0.0
SS21 @ 10.5'	11/07/2022	10.5 ft. bgs	40.029592	-104.949028	1.0	0.0
SS22 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029592	-104.949028	1.0	0.0
SS23 @ 14.5'	11/07/2022	14.5 ft. bgs	40.029606	-104.949028	NC	0.0
SS24 @ 14.5'	11/08/2022	14.5 ft. bgs	40.029621	-104.949033	NC	0.0
SS25 @ 14.5'	11/08/2022	14.5 ft. bgs	40.029672	-104.949039	NC	0.0
SS26 @ 5'	11/09/2022	5 ft. bgs	40.029603	-104.949109	1.2	0.0
SS27 @ 10.5'	11/09/2022	10.5 ft. bgs	40.029603	-104.949109	1.2	0.0
SS28 @ 14.5'	11/09/2022	14.5 ft. bgs	40.029603	-104.949109	1.2	0.0
SS29 @ 5'	11/09/2022	5 ft. bgs	40.029586	-104.949082	1.2	0.0
SS30 @ 10.5'	11/09/2022	10.5 ft. bgs	40.029586	-104.949082	1.2	0.0
SS31 @ 14.5'	11/09/2022	14.5 ft. bgs	40.029586	-104.949082	1.2	0.0
SS32 @ 5'	11/14/2022	5 ft. bgs	40.029648	-104.949130	1.2	0.0
SS33 @ 10.5'	11/14/2022	10.5 ft. bgs	40.029648	-104.949130	1.2	0.0
SS34 @ 14.5'	11/14/2022	14.5 ft. bgs	40.029648	-104.949130	1.2	0.0
SS35 @ 5'	11/17/2022	5 ft. bgs	NG	NG	NC	0.0

TABLE 6
FORMER TOTEMS 44-24 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS36 @ 10.5'	11/17/2022	10.5 ft. bgs	NG	NG	NC	0.0
SS37 @ 14.5'	11/17/2022	14.5 ft. bgs	NG	NG	NC	0.0
SS38 @ 14.5'	11/17/2022	14.5 ft. bgs	NG	NG	NC	0.0
SS39 @ 5'	11/17/2022	5 ft. bgs	NG	NG	NC	0.0
SS40 @ 10.5'	11/17/2022	10.5 ft. bgs	NG	NG	NC	0.0
SS41 @ 14.5'	11/17/2022	14.5 ft. bgs	NG	NG	NC	0.0
SS42 @ 14.5'	11/21/2022	14.5 ft. bgs	40.029723	-104.949040	1.2	0.0
SS43 @ 14.5'	11/21/2022	14.5 ft. bgs	40.029729	-104.948954	NC	0.0
SS44 @ 5'	11/21/2022	5 ft. bgs	40.029764	-104.948922	0.9	0.0
SS45 @ 10.5'	11/21/2022	10.5 ft. bgs	40.029764	-104.948922	0.9	0.0
SS46 @ 14.5'	11/21/2022	14.5 ft. bgs	40.029764	-104.948922	0.9	0.0
SS47 @ 5'	11/21/2022	5 ft. bgs	40.029679	-104.949143	0.9	0.0
SS48 @ 10.5'	11/21/2022	10.5 ft. bgs	40.029679	-104.949143	0.9	0.0
SS49 @ 14.5'	11/21/2022	14.5 ft. bgs	40.029679	-104.949143	0.9	0.0
SS50 @ 5'	11/22/2022	5 ft. bgs	40.029739	-104.949094	1.0	0.0
SS51 @ 10.5'	11/22/2022	10.5 ft. bgs	40.029739	-104.949094	1.0	22.0
SS52 @ 14.5'	11/22/2022	14.5 ft. bgs	40.029739	-104.949094	1.0	0.0
SS53 @ 14.5'	11/22/2022	14.5 ft. bgs	40.029716	-104.949093	NC	0.0
SS54 @ 2.5'	11/22/2022	2.5 ft. bgs	40.029692	-104.948841	1.0	0.0
SS55 @ 2.5'	11/22/2022	2.5 ft. bgs	40.029592	-104.949028	1.0	0.0
SS57 @ 5'	11/28/2022	5 ft. bgs	40.029757	-104.949123	1.1	0.0
SS58 @ 10.5'	11/28/2022	10.5 ft. bgs	40.029757	-104.949123	1.1	0.0
SS59 @ 14.5'	11/28/2022	14.5 ft. bgs	40.029757	-104.949123	1.1	0.0
SS60 @ 14.5'	11/28/2022	14.5 ft. bgs	40.029761	-104.949096	NC	0.0
SS61 @ 2.5'	11/28/2022	2.5 ft. bgs	40.029648	-104.949130	1.2	0.0
SS62 @ 5'	11/28/2022	5 ft. bgs	40.029802	-104.949057	1.1	0.0
SS63 @ 10.5'	11/28/2022	10.5 ft. bgs	40.029802	-104.949057	1.1	0.0
SS64 @ 14.5'	11/28/2022	14.5 ft. bgs	40.029802	-104.949057	1.1	0.0
SS65 @ 2.5'	11/30/2022	2.5 ft. bgs	40.029839	-104.948992	1.0	0.0
SS66 @ 5'	11/30/2022	5 ft. bgs	40.029839	-104.948992	1.0	0.0
SS67 @ 10.5'	11/30/2022	10.5 ft. bgs	40.029839	-104.948992	1.0	0.0
SS68 @ 14.5'	11/30/2022	14.5 ft. bgs	40.029839	-104.948992	1.0	0.0
SS69 @ 14.5'	11/30/2022	14.5 ft. bgs	40.029811	-104.948990	NC	0.0
SS70 @ 14.5'	12/01/2022	14.5 ft. bgs	40.029770	-104.949027	NC	0.0
SS71 @ 14.5'	12/01/2022	14.5 ft. bgs	40.029802	-104.948921	NC	0.0
SS72 @ 5'	12/01/2022	5 ft. bgs	40.029875	-104.948937	1.1	0.0
SS73 @ 10.5'	12/01/2022	10.5 ft. bgs	40.029875	-104.948937	1.1	0.0
SS74 @ 14.5'	12/01/2022	14.5 ft. bgs	40.029875	-104.948937	1.1	0.0
SS75 @ 5'	12/02/2022	5 ft. bgs	40.029792	-104.948875	0.9	0.0

TABLE 6
FORMER TOTEMS 44-24 TANK BATTERY
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS76 @ 10.5'	12/02/2022	10.5 ft. bgs	40.029792	-104.948875	0.9	0.0
SS77 @ 14.5'	12/02/2022	14.5 ft. bgs	40.029792	-104.948875	0.9	0.0
SS78 @ 5'	12/02/2022	5 ft. bgs	40.029830	-104.948901	0.9	0.0
SS79 @ 10.5'	12/02/2022	10.5 ft. bgs	40.029830	-104.948901	0.9	0.0
SS80 @ 14.5'	12/02/2022	14.5 ft. bgs	40.029830	-104.948901	0.9	0.0
BKG01 @ 2.5'	10/24/2022	2.5 ft. bgs	40.031232	-104.946029	0.8	0.1
BKG01 @ 5'	10/24/2022	5 ft. bgs	40.031232	-104.946029	0.8	0.0
BKG01 @ 7'	10/24/2022	7 ft. bgs	40.031232	-104.946029	0.8	0.6
BKG01 @ 10.5'	10/24/2022	10.5 ft. bgs	40.031232	-104.946029	0.8	0.2
BKG02 @ 2.5	11/03/2022	2.5 ft. bgs	40.029577	-104.948830	1.1	0.0
BKG02 @ 5'	11/03/2022	5 ft. bgs	40.029577	-104.948830	1.1	0.0
BKG02 @ 7'	11/03/2022	7 ft. bgs	40.029577	-104.948830	1.1	0.0
BKG02 @ 10.5'	11/03/2022	10.5 ft. bgs	40.029577	-104.948830	1.1	0.0
BKG02 @ 14.5'	11/03/2022	14.5 ft. bgs	40.029577	-104.948830	1.1	0.0
BKG03 @ 2.5'	11/21/2022	2.5 ft. bgs	40.029762	-104.948694	1.2	0.0
BKG03 @ 5'	11/21/2022	5 ft. bgs	40.029762	-104.948694	1.2	0.0
BKG03 @ 7'	11/21/2022	7 ft. bgs	40.029762	-104.948694	1.2	0.0
BKG03 @ 10.5'	11/21/2022	10.5 ft. bgs	40.029762	-104.948694	1.2	0.0
BKG03 @ 14.5	11/21/2022	14.5 ft. bgs	40.029762	-104.948694	1.2	0.0
SS75 @ 5'	12/02/2022	5 ft. bgs	40.029792	-104.948875	0.9	0.0

Notes:

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

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

 = Source material characterization sample, material excavated and transported off-site for disposal

NC = Data not collected

NG = Data not gathered due to excavation sidewall collapse and safety concerns

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 27, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2210398

Enclosed are the results of analyses for samples received by Summit Scientific on 10/21/22 13:12. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-FL@4'	2210398-01	Soil	10/21/22 13:12	10/21/22 13:12
AST01@0-6"	2210398-02	Soil	10/21/22 13:12	10/21/22 13:12

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

2210398

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

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: Tolans 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		
1	SEP01-FL@4"	10/21/22	1312	2			X			X				X	X			X			
2	AST01@0-6"	1	1225	2			X			X				X	X			X			
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	10/21/22 1525	TASMAN LOCKBOX	10/21/22 1525	Same Day	72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman Lockbox	10/21/22 1715		10/21/22 1715	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	6.9	
				Samples Intact:	Yes	No

S₂

Sample Receipt Checklist

S2 Work Order# 220398Client: Bo. TasmannClient Project ID: Totems 44-24 TankbattenShipped 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)

6.9

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"/>	on ICE
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

10-21-22



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

SEP01-FL@4'
2210398-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFJ0676	10/25/22	10/26/22	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: **10/21/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFJ0679	10/25/22	10/26/22	EPA 8015M	
C28-C36 (ORO)	180	50	"	"	"	"	"	"	

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		80.8 %	30-150		"	"	"	"	

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

AST01@0-6"
2210398-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFJ0676	10/25/22	10/26/22	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: **10/21/22 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		124 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		128 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFJ0679	10/25/22	10/26/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/21/22 13:12**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		75.3 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0676 - EPA 5030 Soil MS

Blank (BFJ0676-BLK1)

Prepared & Analyzed: 10/25/22

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	0.0490		"	0.0400		122	50-150			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0505		"	0.0400		126	50-150			

LCS (BFJ0676-BS1)

Prepared & Analyzed: 10/25/22

Benzene	0.136	0.0020	mg/kg	0.150		90.9	70-130			
Toluene	0.141	0.0050	"	0.150		93.9	70-130			
Ethylbenzene	0.152	0.0050	"	0.150		102	70-130			
m,p-Xylene	0.293	0.010	"	0.300		97.5	70-130			
o-Xylene	0.140	0.0050	"	0.150		93.6	70-130			
1,2,4-Trimethylbenzene	0.152	0.0050	"	0.150		101	70-130			
1,3,5-Trimethylbenzene	0.153	0.0050	"	0.150		102	70-130			
Naphthalene	0.137	0.0038	"	0.150		91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	50-150			

Matrix Spike (BFJ0676-MS1)

Source: 2210393-01

Prepared & Analyzed: 10/25/22

Benzene	0.143	0.0020	mg/kg	0.150	0.00318	92.9	70-130			
Toluene	0.148	0.0050	"	0.150	ND	98.8	70-130			
Ethylbenzene	0.168	0.0050	"	0.150	ND	112	70-130			
m,p-Xylene	0.321	0.010	"	0.300	ND	107	70-130			
o-Xylene	0.152	0.0050	"	0.150	ND	101	70-130			
1,2,4-Trimethylbenzene	0.164	0.0050	"	0.150	ND	109	70-130			
1,3,5-Trimethylbenzene	0.166	0.0050	"	0.150	ND	110	70-130			
Naphthalene	0.152	0.0038	"	0.150	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0427		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

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 BFJ0676 - EPA 5030 Soil MS

Matrix Spike Dup (BFJ0676-MSD1)	Source: 2210393-01			Prepared & Analyzed: 10/25/22						
Benzene	0.134	0.0020	mg/kg	0.150	0.00318	86.9	70-130	6.56	30	
Toluene	0.138	0.0050	"	0.150	ND	91.8	70-130	7.41	30	
Ethylbenzene	0.154	0.0050	"	0.150	ND	103	70-130	8.43	30	
m,p-Xylene	0.299	0.010	"	0.300	ND	99.8	70-130	7.16	30	
o-Xylene	0.142	0.0050	"	0.150	ND	94.7	70-130	6.50	30	
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.150	ND	103	70-130	6.30	30	
1,3,5-Trimethylbenzene	0.154	0.0050	"	0.150	ND	102	70-130	7.54	30	
Naphthalene	0.153	0.0038	"	0.150	ND	102	70-130	0.708	30	
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFJ0679 - EPA 3550A

Blank (BFJ0679-BLK1)

Prepared & Analyzed: 10/25/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	10.4		"	12.5		83.5	30-150			

LCS (BFJ0679-BS1)

Prepared & Analyzed: 10/25/22

C10-C28 (DRO)	576	50	mg/kg	500		115	70-130			
Surrogate: o-Terphenyl	9.96		"	12.5		79.7	30-150			

Matrix Spike (BFJ0679-MS1)

Source: 2210393-01

Prepared: 10/25/22 Analyzed: 10/26/22

C10-C28 (DRO)	585	50	mg/kg	500	ND	117	70-130			
Surrogate: o-Terphenyl	9.69		"	12.5		77.5	30-150			

Matrix Spike Dup (BFJ0679-MSD1)

Source: 2210393-01

Prepared: 10/25/22 Analyzed: 10/26/22

C10-C28 (DRO)	601	50	mg/kg	500	ND	120	70-130	2.69	20	
Surrogate: o-Terphenyl	10.2		"	12.5		81.8	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/27/22 10:54

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

November 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2210417

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/22 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Mikayla Axtell".

Mikayla Axtell For Paul Shrewsbury
President



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL-B@10.5'	2210417-01	Soil	10/24/22 11:55	10/24/22 17:45
SEP01-DL-S@5'	2210417-03	Soil	10/24/22 12:00	10/24/22 17:45
BKG01@2.5'	2210417-06	Soil	10/24/22 13:05	10/24/22 17:45
BKG01@5'	2210417-07	Soil	10/24/22 13:20	10/24/22 17:45
BKG01@7'	2210417-08	Soil	10/24/22 13:30	10/24/22 17:45
BKG01@10.5'	2210417-09	Soil	10/24/22 13:45	10/24/22 17:45

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

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

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

Project Number: NA

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested								Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN-8260B	TPH-(C6-C36)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	ON HOLD	
1	SEP01-DL-B @ 10.5'	10/24/22	1155	3			X			X				X	X	X	X	X	X		
2	SEP01-DL-N @ 5'		1205	1															X		
3	SEP01-DL-S @ 5'		1200	1										X	X	X	X	X			
4	SEP01-DL-E @ 5'		1215	1															X		
5	SEP01-DL-W @ 5'		1210	1															X		
6	BK601 @ 2.5'		1305	1														X			
7	BK601 @ 5'		1320	1														X			
8	BK601 @ 7'		1330	1														X			
9	BK601 @ 10.5'		1345	1														X			
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>Ann Alm</i>	10/24/22 1515	<i>Tasman Lockbox</i>	10/24/22 1515	Same Day <input checked="" type="checkbox"/>	72 hours <input type="checkbox"/>	BK601 @ 2.5'
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/>	Standard <input type="checkbox"/>	BK601 @ 5'
<i>Tasman Lockbox</i>	10/24/22 1745	<i>[Signature]</i>	10/24/22 1745	48 hours <input type="checkbox"/>		BK601 @ 7'
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		BK601 @ 10.5'
				Temperature Upon Receipt: <i>16.1</i>		ON STANDARD
				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

S₂

Sample Receipt Checklist

S2 Work Order# 2210417Client: Portasman Client Project ID: Totems 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐

Temp (°C)

10.4

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"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

10-24-22



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-B@10.5'
2210417-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFJ0658	10/24/22	10/24/22	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: **10/24/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		67.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFJ0659	10/24/22	10/24/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		86.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-B@10.5'
2210417-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0660	10/25/22	10/26/22	EPA 8270D SIM	
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	"	"	"	"	"	"	

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.107	0.0100	mg/L	1	BFJ0664	10/25/22	10/25/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/22 11:55**

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

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-B@10.5'
2210417-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.24	0.236	mg/kg dry	1	BFJ0662	10/25/22	10/25/22	EPA 6020B
Barium	23.7	0.472	"	"	"	"	"	"
Cadmium	0.837	0.236	"	"	"	"	"	"
Copper	16.4	0.472	"	"	"	"	"	"
Lead	14.8	0.236	"	"	"	"	"	"
Nickel	34.3	0.472	"	"	"	"	"	"
Selenium	0.441	0.307	"	"	"	"	"	"
Silver	0.0515	0.0236	"	"	"	"	"	"
Zinc	127	0.472	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/24/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: 10/24/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.4	0.0590	mg/L dry	1	BFJ0673	10/25/22	10/26/22	EPA 6020B	
Magnesium	8.75	0.0590	"	"	"	"	"	"	
Sodium	78.4	0.0590	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/24/22 11:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.30	0.00100	units	1	BFJ0773	10/27/22	10/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/24/22 11:55

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

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-B@10.5'
2210417-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.7	%	1	BFJ0668	10/25/22	10/25/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.560	0.0100	mmhos/cm	1	BFJ0699	10/26/22	10/26/22	EPA 120.1	

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

Date Sampled: **10/24/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BFJ0700	10/26/22	10/26/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-S@5'
2210417-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFJ0658	10/24/22	10/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.59	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.053	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.42	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.017	0.0050	"	"	"	"	"	"	
Naphthalene	0.37	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	63	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		71.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		167 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	400	50	mg/kg	1	BFJ0659	10/24/22	10/24/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		83.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-S@5'
2210417-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0660	10/25/22	10/26/22	EPA 8270D SIM	
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	0.382	0.0500	"	10	"	"	10/26/22	"	
2-Methylnaphthalene	0.353	0.0500	"	"	"	"	"	"	

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		83.6 %	40-150		"	"	10/26/22	"	
Surrogate: Fluoranthene-d10		51.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.528	0.0100	mg/L	1	BFJ0664	10/25/22	10/25/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/22 12:00**

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

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-S@5'
2210417-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.66	0.246	mg/kg dry	1	BFJ0662	10/25/22	10/25/22	EPA 6020B
Barium	72.0	0.492	"	"	"	"	"	"
Cadmium	ND	0.246	"	"	"	"	"	"
Copper	10.7	0.492	"	"	"	"	"	"
Lead	10.1	0.246	"	"	"	"	"	"
Nickel	8.93	0.492	"	"	"	"	"	"
Selenium	0.568	0.320	"	"	"	"	"	"
Silver	0.0615	0.0246	"	"	"	"	"	"
Zinc	33.4	0.492	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.6	0.0615	mg/L dry	1	BFJ0673	10/25/22	10/26/22	EPA 6020B	
Magnesium	19.0	0.0615	"	"	"	"	"	"	
Sodium	299	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.7	0.00100	units	1	BFJ0773	10/27/22	10/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 12:00**

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

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

SEP01-DL-S@5'
2210417-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.2	%	1	BFJ0668	10/25/22	10/25/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.35	0.0100	mmhos/cm	1	BFJ0699	10/26/22	10/26/22	EPA 120.1	

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

Date Sampled: **10/24/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BFJ0700	10/26/22	10/26/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@2.5'
2210417-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.67	0.212	mg/kg dry	1	BFJ0757	10/27/22	10/28/22	EPA 6020B	
Barium	136	0.425	"	"	"	"	"	"	
Cadmium	0.315	0.212	"	"	"	"	"	"	
Copper	9.76	0.425	"	"	"	"	"	"	
Lead	10.4	0.212	"	"	"	"	"	"	
Nickel	9.88	0.425	"	"	"	"	"	"	
Selenium	0.439	0.276	"	"	"	"	"	"	
Silver	0.0633	0.0212	"	"	"	"	"	"	
Zinc	33.9	0.425	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	452	0.0531	mg/L dry	1	BFK0018	11/01/22	11/02/22	EPA 6020B	
Magnesium	454	0.0531	"	"	"	"	"	"	
Sodium	1560	0.0531	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	12.4	0.00100	units	1	BFK0091	11/03/22	11/03/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@2.5'
2210417-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.1		%	1	BFJ0669	10/25/22	10/25/22	Calculation	

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

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BFK0188	11/07/22	11/07/22	EPA 9045D	I-04

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

Date Sampled: **10/24/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.70	0.0100	mmhos/cm	1	BFK0189	11/07/22	11/07/22	EPA 120.1	I-04

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@5'
2210417-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.95	0.206	mg/kg dry	1	BFJ0757	10/27/22	10/28/22	EPA 6020B	
Barium	156	0.413	"	"	"	"	"	"	
Cadmium	0.391	0.206	"	"	"	"	"	"	
Copper	10.8	0.413	"	"	"	"	"	"	
Lead	12.8	0.206	"	"	"	"	"	"	
Nickel	11.2	0.413	"	"	"	"	"	"	
Selenium	0.295	0.268	"	"	"	"	"	"	
Silver	0.0718	0.0206	"	"	"	"	"	"	
Zinc	39.8	0.413	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	39.8	0.0516	mg/L dry	1	BFK0018	11/01/22	11/02/22	EPA 6020B	
Magnesium	57.1	0.0516	"	"	"	"	"	"	
Sodium	580	0.0516	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	13.8	0.00100	units	1	BFK0091	11/03/22	11/03/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@5'
2210417-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.9		%	1	BFJ0669	10/25/22	10/25/22	Calculation	

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

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.60		pH Units	1	BFK0188	11/07/22	11/07/22	EPA 9045D	I-04

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

Date Sampled: **10/24/22 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.86	0.0100	mmhos/cm	1	BFK0189	11/07/22	11/07/22	EPA 120.1	I-04

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@7'
2210417-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	7.55	0.215	mg/kg dry	1	BFJ0757	10/27/22	10/28/22	EPA 6020B	
Barium	69.5	0.429	"	"	"	"	"	"	
Cadmium	0.683	0.215	"	"	"	"	"	"	
Copper	14.2	0.429	"	"	"	"	"	"	
Lead	13.2	0.215	"	"	"	"	"	"	
Nickel	24.8	0.429	"	"	"	"	"	"	
Selenium	0.787	0.279	"	"	"	"	"	"	
Silver	0.0528	0.0215	"	"	"	"	"	"	
Zinc	93.7	0.429	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	42.8	0.0537	mg/L dry	1	BFK0018	11/01/22	11/02/22	EPA 6020B	
Magnesium	41.0	0.0537	"	"	"	"	"	"	
Sodium	261	0.0537	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	6.84	0.00100	units	1	BFK0091	11/03/22	11/03/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@7'
2210417-08 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BFJ0669	10/25/22	10/25/22	Calculation	

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

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.63		pH Units	1	BFK0188	11/07/22	11/07/22	EPA 9045D	I-04

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

Date Sampled: **10/24/22 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.28	0.0100	mmhos/cm	1	BFK0189	11/07/22	11/07/22	EPA 120.1	I-04

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@10.5'
2210417-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.821	0.204	mg/kg dry	1	BFJ0757	10/27/22	10/28/22	EPA 6020B	
Barium	18.3	0.408	"	"	"	"	"	"	
Cadmium	ND	0.204	"	"	"	"	"	"	
Copper	7.79	0.408	"	"	"	"	"	"	
Lead	7.46	0.204	"	"	"	"	"	"	
Nickel	4.29	0.408	"	"	"	"	"	"	
Selenium	ND	0.265	"	"	"	"	"	"	
Silver	ND	0.0204	"	"	"	"	"	"	
Zinc	25.8	0.408	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	454	0.0510	mg/L dry	1	BFK0018	11/01/22	11/02/22	EPA 6020B	
Magnesium	208	0.0510	"	"	"	"	"	"	
Sodium	478	0.0510	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	4.66	0.00100	units	1	BFK0091	11/03/22	11/03/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

BKG01@10.5'
2210417-09 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.0		%	1	BFJ0669	10/25/22	10/25/22	Calculation	

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

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BFK0188	11/07/22	11/07/22	EPA 9045D	I-04

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

Date Sampled: **10/24/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.88	0.0100	mmhos/cm	1	BFK0189	11/07/22	11/07/22	EPA 120.1	I-04

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0658 - EPA 5030 Soil MS

Blank (BFJ0658-BLK1)

Prepared & Analyzed: 10/24/22

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	0.0319		"	0.0400		79.7	50-150			
Surrogate: Toluene-d8	0.0481		"	0.0400		120	50-150			
Surrogate: 4-Bromofluorobenzene	0.0522		"	0.0400		130	50-150			

LCS (BFJ0658-BS1)

Prepared & Analyzed: 10/24/22

Benzene	0.0885	0.0020	mg/kg	0.100		88.5	70-130			
Toluene	0.0941	0.0050	"	0.100		94.1	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.234	0.010	"	0.200		117	70-130			
o-Xylene	0.0892	0.0050	"	0.100		89.2	70-130			
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100		94.5	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.106	0.0038	"	0.100		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	50-150			
Surrogate: Toluene-d8	0.0487		"	0.0400		122	50-150			
Surrogate: 4-Bromofluorobenzene	0.0518		"	0.0400		129	50-150			

Matrix Spike (BFJ0658-MS1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130			
Toluene	0.0867	0.0050	"	0.100	ND	86.7	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.234	0.010	"	0.200	ND	117	70-130			
o-Xylene	0.0865	0.0050	"	0.100	ND	86.5	70-130			
1,2,4-Trimethylbenzene	0.0939	0.0050	"	0.100	ND	93.9	70-130			
1,3,5-Trimethylbenzene	0.0999	0.0050	"	0.100	ND	99.9	70-130			
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.3	50-150			
Surrogate: Toluene-d8	0.0479		"	0.0400		120	50-150			
Surrogate: 4-Bromofluorobenzene	0.0510		"	0.0400		128	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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

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

Batch BFJ0658 - EPA 5030 Soil MS

Matrix Spike Dup (BFJ0658-MSD1)		Source: 2210410-01			Prepared & Analyzed: 10/24/22					
Benzene	0.0997	0.0020	mg/kg	0.100	ND	99.7	70-130	0.420	30	
Toluene	0.0940	0.0050	"	0.100	ND	94.0	70-130	8.17	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	3.38	30	
m,p-Xylene	0.241	0.010	"	0.200	ND	121	70-130	3.10	30	
o-Xylene	0.0896	0.0050	"	0.100	ND	89.6	70-130	3.58	30	
1,2,4-Trimethylbenzene	0.0956	0.0050	"	0.100	ND	95.6	70-130	1.74	30	
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	3.13	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	1.51	30	
Surrogate: 1,2-Dichloroethane-d4		0.0358	"	0.0400		89.4	50-150			
Surrogate: Toluene-d8		0.0484	"	0.0400		121	50-150			
Surrogate: 4-Bromofluorobenzene		0.0505	"	0.0400		126	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFJ0659 - EPA 3550A

Blank (BFJ0659-BLK1)

Prepared & Analyzed: 10/24/22

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

Surrogate: o-Terphenyl	5.76		"	12.5	46.0	30-150
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LCS (BFJ0659-BS1)

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	590	50	mg/kg	500	118	70-130
Surrogate: o-Terphenyl	14.6		"	12.5	117	30-150

Matrix Spike (BFJ0659-MS1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	472	50	mg/kg	500	32.3	88.0	70-130
Surrogate: o-Terphenyl	11.9		"	12.5	95.1	30-150	

Matrix Spike Dup (BFJ0659-MSD1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	487	50	mg/kg	500	32.3	90.9	70-130	3.08	20
Surrogate: o-Terphenyl	12.2		"	12.5	97.9	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BFJ0660 - EPA 5030 Soil MS

Blank (BFJ0660-BLK1)

Prepared & Analyzed: 10/25/22

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	0.0364		"	0.0333		109	40-150			
Surrogate: Fluoranthene-d10	0.0299		"	0.0333		89.7	40-150			

LCS (BFJ0660-BS1)

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0382	0.00500	mg/kg	0.0333		115	31-137			
Anthracene	0.0387	0.00500	"	0.0333		116	30-120			
Benzo (a) anthracene	0.0340	0.00500	"	0.0333		102	30-120			
Benzo (a) pyrene	0.0399	0.00500	"	0.0333		120	30-120			
Benzo (b) fluoranthene	0.0376	0.00500	"	0.0333		113	30-120			
Benzo (k) fluoranthene	0.0359	0.00500	"	0.0333		108	30-120			
Chrysene	0.0329	0.00500	"	0.0333		98.8	30-120			
Dibenz (a,h) anthracene	0.0330	0.00500	"	0.0333		99.1	30-120			
Fluoranthene	0.0366	0.00500	"	0.0333		110	30-120			
Fluorene	0.0384	0.00500	"	0.0333		115	30-120			
Indeno (1,2,3-cd) pyrene	0.0393	0.00500	"	0.0333		118	30-120			
Pyrene	0.0346	0.00500	"	0.0333		104	35-142			
1-Methylnaphthalene	0.0372	0.00500	"	0.0333		112	35-142			
2-Methylnaphthalene	0.0392	0.00500	"	0.0333		118	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0385		"	0.0333		115	40-150			
Surrogate: Fluoranthene-d10	0.0368		"	0.0333		111	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0660 - EPA 5030 Soil MS

Matrix Spike (BFJ0660-MS1)

Source: 2210374-02

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0282	0.00500	mg/kg	0.0333	ND	84.5	31-137		
Anthracene	0.0244	0.00500	"	0.0333	ND	73.2	30-120		
Benzo (a) anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120		
Benzo (a) pyrene	0.0254	0.00500	"	0.0333	ND	76.1	30-120		
Benzo (b) fluoranthene	0.0285	0.00500	"	0.0333	ND	85.4	30-120		
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0333	ND	87.9	30-120		
Chrysene	0.0218	0.00500	"	0.0333	ND	65.4	30-120		
Dibenz (a,h) anthracene	0.0261	0.00500	"	0.0333	ND	78.2	30-120		
Fluoranthene	0.0275	0.00500	"	0.0333	ND	82.4	30-120		
Fluorene	0.0280	0.00500	"	0.0333	ND	83.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0320	0.00500	"	0.0333	ND	96.1	30-120		
Pyrene	0.0240	0.00500	"	0.0333	ND	72.0	35-142		
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.6	15-130		
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0241		"	0.0333		72.2	40-150		
Surrogate: Fluoranthene-d10	0.0278		"	0.0333		83.4	40-150		

Matrix Spike Dup (BFJ0660-MSD1)

Source: 2210374-02

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0293	0.00500	mg/kg	0.0333	ND	87.9	31-137	3.93	30
Anthracene	0.0261	0.00500	"	0.0333	ND	78.4	30-120	6.78	30
Benzo (a) anthracene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	7.37	30
Benzo (a) pyrene	0.0280	0.00500	"	0.0333	ND	84.0	30-120	9.91	30
Benzo (b) fluoranthene	0.0307	0.00500	"	0.0333	ND	92.0	30-120	7.43	30
Benzo (k) fluoranthene	0.0300	0.00500	"	0.0333	ND	90.0	30-120	2.37	30
Chrysene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	5.49	30
Dibenz (a,h) anthracene	0.0287	0.00500	"	0.0333	ND	86.0	30-120	9.52	30
Fluoranthene	0.0288	0.00500	"	0.0333	ND	86.4	30-120	4.73	30
Fluorene	0.0309	0.00500	"	0.0333	ND	92.7	30-120	9.99	30
Indeno (1,2,3-cd) pyrene	0.0360	0.00500	"	0.0333	ND	108	30-120	11.6	30
Pyrene	0.0250	0.00500	"	0.0333	ND	75.1	35-142	4.12	30
1-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130	2.01	50
2-Methylnaphthalene	0.0249	0.00500	"	0.0333	ND	74.7	15-130	2.59	50
Surrogate: 2-Methylnaphthalene-d10	0.0234		"	0.0333		70.3	40-150		
Surrogate: Fluoranthene-d10	0.0299		"	0.0333		89.6	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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

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

Batch BFJ0664 - EPA 3050B

Blank (BFJ0664-BLK1)

Prepared & Analyzed: 10/25/22

Boron ND 0.0100 mg/L

LCS (BFJ0664-BS1)

Prepared & Analyzed: 10/25/22

Boron 4.90 0.0100 mg/L 5.00 98.1 80-120

Duplicate (BFJ0664-DUP1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 0.156 0.0100 mg/L 0.165 5.99 20

Matrix Spike (BFJ0664-MS1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 4.86 0.0100 mg/L 5.00 0.165 94.0 75-125

Matrix Spike Dup (BFJ0664-MSD1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 4.83 0.0100 mg/L 5.00 0.165 93.4 75-125 0.631 25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0662 - EPA 3050B

Blank (BFJ0662-BLK1)

Prepared & Analyzed: 10/25/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFJ0662-BS1)

Prepared & Analyzed: 10/25/22

Arsenic	36.2	0.200	mg/kg wet	40.0	90.6	80-120
Barium	37.3	0.400	"	40.0	93.2	80-120
Cadmium	2.32	0.200	"	2.00	116	80-120
Copper	39.8	0.400	"	40.0	99.5	80-120
Lead	22.3	0.200	"	20.0	112	80-120
Nickel	38.2	0.400	"	40.0	95.5	80-120
Selenium	4.34	0.260	"	4.00	108	80-120
Silver	1.60	0.0200	"	2.00	80.0	80-120
Zinc	38.3	0.400	"	40.0	95.9	80-120

Duplicate (BFJ0662-DUP1)

Source: 2210219-04

Prepared & Analyzed: 10/25/22

Arsenic	0.894	0.219	mg/kg dry	0.896	0.196	20
Barium	40.5	0.437	"	39.9	1.35	20
Cadmium	0.154	0.219	"	0.157	1.97	20
Copper	4.14	0.437	"	3.97	4.17	20
Lead	3.40	0.219	"	3.32	2.32	20
Nickel	3.46	0.437	"	3.32	4.02	20
Selenium	ND	0.284	"	ND		20
Silver	0.0241	0.0219	"	0.0219	9.52	20
Zinc	15.5	0.437	"	14.8	4.79	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0662 - EPA 3050B

Matrix Spike (BFJ0662-MS1)			Source: 2210219-04		Prepared & Analyzed: 10/25/22						
Arsenic	21.4	0.219	mg/kg dry	43.7	0.896	47.0	75-125				QM-05
Barium	64.5	0.437	"	43.7	39.9	56.1	75-125				QM-05
Cadmium	1.82	0.219	"	2.19	0.157	76.2	75-125				
Copper	38.5	0.437	"	43.7	3.97	79.0	75-125				
Lead	23.6	0.219	"	21.9	3.32	92.5	75-125				
Nickel	37.8	0.437	"	43.7	3.32	78.9	75-125				
Selenium	4.83	0.284	"	4.37	ND	111	75-125				
Silver	1.69	0.0219	"	2.19	0.0219	76.1	75-125				
Zinc	49.4	0.437	"	43.7	14.8	79.2	75-125				

Matrix Spike Dup (BFJ0662-MSD1)			Source: 2210219-04		Prepared & Analyzed: 10/25/22						
Arsenic	21.6	0.219	mg/kg dry	43.7	0.896	47.3	75-125	0.661	25		QM-05
Barium	64.1	0.437	"	43.7	39.9	55.3	75-125	0.548	25		QM-05
Cadmium	1.83	0.219	"	2.19	0.157	76.6	75-125	0.502	25		
Copper	39.7	0.437	"	43.7	3.97	81.6	75-125	2.91	25		
Lead	23.5	0.219	"	21.9	3.32	92.4	75-125	0.165	25		
Nickel	41.0	0.437	"	43.7	3.32	86.2	75-125	8.05	25		
Selenium	4.82	0.284	"	4.37	ND	110	75-125	0.381	25		
Silver	1.71	0.0219	"	2.19	0.0219	77.4	75-125	1.62	25		
Zinc	50.5	0.437	"	43.7	14.8	81.7	75-125	2.20	25		

Batch BFJ0757 - EPA 3050B

Blank (BFJ0757-BLK1)			Prepared: 10/27/22 Analyzed: 10/28/22								
Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Cadmium	ND	0.200	"								
Copper	ND	0.400	"								
Lead	ND	0.200	"								
Nickel	ND	0.400	"								
Selenium	ND	0.260	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								

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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0757 - EPA 3050B

LCS (BFJ0757-BS1)

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	45.0	0.200	mg/kg wet	40.0		113	80-120			
Barium	35.6	0.400	"	40.0		89.1	80-120			
Cadmium	1.85	0.200	"	2.00		92.5	80-120			
Copper	44.0	0.400	"	40.0		110	80-120			
Lead	18.4	0.200	"	20.0		91.8	80-120			
Nickel	44.9	0.400	"	40.0		112	80-120			
Selenium	4.57	0.260	"	4.00		114	80-120			
Silver	1.94	0.0200	"	2.00		97.0	80-120			
Zinc	45.6	0.400	"	40.0		114	80-120			

Duplicate (BFJ0757-DUP1)

Source: 2210245-02

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	2.91	0.258	mg/kg dry		2.78			4.89	20	
Barium	116	0.517	"		131			11.7	20	
Cadmium	0.282	0.258	"		0.306			8.10	20	
Copper	18.1	0.517	"		17.0			6.15	20	
Lead	24.9	0.258	"		24.8			0.505	20	
Nickel	10.4	0.517	"		11.0			5.27	20	
Selenium	0.322	0.336	"		0.322			0.00	20	
Silver	0.0346	0.0258	"		0.0408			16.4	20	
Zinc	40.1	0.517	"		41.3			2.89	20	

Matrix Spike (BFJ0757-MS1)

Source: 2210245-02

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	45.5	0.258	mg/kg dry	51.7	2.78	82.7	75-125			
Barium	227	0.517	"	51.7	131	186	75-125			QM-05
Cadmium	3.17	0.258	"	2.58	0.306	111	75-125			
Copper	53.0	0.517	"	51.7	17.0	69.7	75-125			QM-05
Lead	51.6	0.258	"	25.8	24.8	104	75-125			
Nickel	46.3	0.517	"	51.7	11.0	68.4	75-125			QM-05
Selenium	6.63	0.336	"	5.17	0.322	122	75-125			
Silver	2.74	0.0258	"	2.58	0.0408	104	75-125			
Zinc	84.4	0.517	"	51.7	41.3	83.4	75-125			

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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0757 - EPA 3050B

Matrix Spike Dup (BFJ0757-MSD1)		Source: 2210245-02			Prepared: 10/27/22 Analyzed: 10/28/22					
Arsenic	42.5	0.258	mg/kg dry	51.7	2.78	76.9	75-125	6.83	25	
Barium	198	0.517	"	51.7	131	130	75-125	13.8	25	QM-05
Cadmium	2.93	0.258	"	2.58	0.306	101	75-125	8.19	25	
Copper	60.4	0.517	"	51.7	17.0	83.8	75-125	12.9	25	
Lead	47.1	0.258	"	25.8	24.8	86.4	75-125	9.07	25	
Nickel	45.7	0.517	"	51.7	11.0	67.3	75-125	1.27	25	QM-05
Selenium	6.37	0.336	"	5.17	0.322	117	75-125	4.06	25	
Silver	2.44	0.0258	"	2.58	0.0408	92.9	75-125	11.5	25	
Zinc	84.9	0.517	"	51.7	41.3	84.3	75-125	0.504	25	

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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFJ0687 - 3060A Mod

Blank (BFJ0687-BLK1)

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFJ0687-BS1)

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 21.2 0.30 mg/kg wet 25.0 85.0 80-120

Duplicate (BFJ0687-DUP1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFJ0687-MS1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 21.9 0.30 mg/kg dry 25.6 ND 85.6 75-125

Matrix Spike Dup (BFJ0687-MSD1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 23.6 0.30 mg/kg dry 25.6 ND 92.2 75-125 7.42 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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 BFJ0673 - General Preparation

Blank (BFJ0673-BLK1)

Prepared: 10/25/22 Analyzed: 10/26/22

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

LCS (BFJ0673-BS1)

Prepared: 10/25/22 Analyzed: 10/26/22

Calcium	6.06	0.0500	mg/L wet	5.00	121	70-130
Magnesium	5.53	0.0500	"	5.00	111	70-130
Sodium	5.82	0.0500	"	5.00	116	70-130

Batch BFK0018 - General Preparation

Blank (BFK0018-BLK1)

Prepared: 11/01/22 Analyzed: 11/02/22

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

LCS (BFK0018-BS1)

Prepared: 11/01/22 Analyzed: 11/02/22

Calcium	5.98	0.0500	mg/L wet	5.00	120	70-130
Magnesium	6.19	0.0500	"	5.00	124	70-130
Sodium	6.18	0.0500	"	5.00	124	70-130

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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

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

Batch BFJ0668 - General Preparation

Duplicate (BFJ0668-DUP1)		Source: 2210391-01			Prepared & Analyzed: 10/25/22						
% Solids	79.6		%		81.1			1.86		20	

Batch BFJ0669 - General Preparation

Duplicate (BFJ0669-DUP1)		Source: 2210417-06			Prepared & Analyzed: 10/25/22						
% Solids	93.4		%		94.1			0.746		20	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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

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

Batch BFJ0699 - General Preparation

Blank (BFJ0699-BLK1)

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0699-BS1)

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFJ0699-DUP1)

Source: 2210316-01

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) 0.413 0.0100 mmhos/cm 0.424 2.61 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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

Summit Scientific

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

Batch BFJ0700 - General Preparation

LCS (BFJ0700-BS1)

Prepared & Analyzed: 10/26/22

pH	9.20		pH Units	9.18	100	95-105
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Duplicate (BFJ0700-DUP1)

Source: 2210316-01

Prepared & Analyzed: 10/26/22

pH	7.82		pH Units	7.73		1.16	20
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Batch BFK0188 - General Preparation

LCS (BFK0188-BS1)

Prepared & Analyzed: 11/07/22

pH	9.01		pH Units	9.18	98.1	95-105
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Duplicate (BFK0188-DUP1)

Source: 2210417-06

Prepared & Analyzed: 11/07/22

pH	8.17		pH Units	8.17		0.00	20
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Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

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 BFK0189 - General Preparation

Blank (BFK0189-BLK1)

Prepared & Analyzed: 11/07/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0189-BS1)

Prepared & Analyzed: 11/07/22

Specific Conductance (EC) 0.143 0.0100 mmhos/cm 0.150 95.1 95-105

Duplicate (BFK0189-DUP1)

Source: 2210417-06

Prepared & Analyzed: 11/07/22

Specific Conductance (EC) 4.62 0.0100 mmhos/cm 4.70 1.80 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 11:12

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
I-04	Sample was analyzed out of recommended holding time per clients request.
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

November 01, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2210418

Enclosed are the results of analyses for samples received by Summit Scientific on 10/24/22 17:45. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV01-B@11'	2210418-01	Soil	10/24/22 10:00	10/24/22 17:45
PWV01-W@9'	2210418-05	Soil	10/24/22 10:45	10/24/22 17:45
SS01@9'	2210418-06	Soil	10/24/22 10:29	10/24/22 17:45

Summit Scientific

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2210418

Summit Scientific

S₂

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

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	ON HOLD	
1	PwVol - B@11'	10/24/22	1000	3			X			X				X	X	X	X	X	X		
2	PwVol - Neq'		1020																	X	
3	PwVol - S@6'		1015																	X	
4	PwVol - E@6'		1010																	X	
5	PwVol - Weq'		1045										X	X	X	X	X	X			
6	SS@19'		1029	1																X	
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	10/24/22 1515	Tasman Lockbox	10/24/22 1515	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman Lockbox	102422 1745		102422 1745	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt: 10.4		
				Samples Intact: Yes No		

S₂

Sample Receipt Checklist

S2 Work Order# 2210418Client: Pre/Tasman Client Project ID: Totems 44-24 Tank RatteryShipped 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) 10.4Thermometer # 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"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

10-24-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-B@11'
2210418-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFJ0658	10/24/22	10/24/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.091	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.27	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.45	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	0.037	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	27	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		72.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		134 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFJ0659	10/24/22	10/24/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-B@11'
2210418-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0660	10/25/22	10/26/22	EPA 8270D SIM	
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	0.0360	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0909	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		77.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.355	0.0100	mg/L	1	BFJ0664	10/25/22	10/25/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/22 10:00**

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

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-B@11'
2210418-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.781	0.227	mg/kg dry	1	BFJ0662	10/25/22	10/25/22	EPA 6020B
Barium	25.4	0.455	"	"	"	"	"	"
Cadmium	0.411	0.227	"	"	"	"	"	"
Copper	7.65	0.455	"	"	"	"	"	"
Lead	6.76	0.227	"	"	"	"	"	"
Nickel	9.00	0.455	"	"	"	"	"	"
Selenium	ND	0.296	"	"	"	"	"	"
Silver	0.0236	0.0227	"	"	"	"	"	"
Zinc	32.3	0.455	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	476	0.0568	mg/L dry	1	BFJ0673	10/25/22	10/26/22	EPA 6020B	
Magnesium	235	0.0568	"	"	"	"	"	"	
Sodium	540	0.0568	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.06	0.00100	units	1	BFJ0773	10/27/22	10/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 10:00**

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

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-B@11'
2210418-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.0	%	1	BFJ0668	10/25/22	10/25/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.19	0.0100	mmhos/cm	1	BFJ0699	10/26/22	10/26/22	EPA 120.1	

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

Date Sampled: **10/24/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71		pH Units	1	BFJ0700	10/26/22	10/26/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-W@9'
2210418-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFJ0658	10/24/22	10/24/22	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	1.1	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		71.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		115 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFJ0659	10/24/22	10/24/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-W@9'
2210418-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0660	10/25/22	10/26/22	EPA 8270D SIM	
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	0.0146	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0468	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.355	0.0100	mg/L	1	BFJ0664	10/25/22	10/25/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/22 10:45**

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

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-W@9'
2210418-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.809	0.228	mg/kg dry	1	BFJ0662	10/25/22	10/25/22	EPA 6020B
Barium	13.2	0.456	"	"	"	"	"	"
Cadmium	0.688	0.228	"	"	"	"	"	"
Copper	12.1	0.456	"	"	"	"	"	"
Lead	15.2	0.228	"	"	"	"	"	"
Nickel	13.5	0.456	"	"	"	"	"	"
Selenium	ND	0.296	"	"	"	"	"	"
Silver	ND	0.0228	"	"	"	"	"	"
Zinc	40.8	0.456	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0687	10/25/22	10/26/22	EPA 7196A	

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

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	514	0.0570	mg/L dry	1	BFJ0673	10/25/22	10/26/22	EPA 6020B	
Magnesium	245	0.0570	"	"	"	"	"	"	
Sodium	391	0.0570	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.55	0.00100	units	1	BFJ0773	10/27/22	10/27/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PWV01-W@9'
2210418-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BFJ0668	10/25/22	10/25/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.56	0.0100	mmhos/cm	1	BFJ0699	10/26/22	10/26/22	EPA 120.1	

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

Date Sampled: **10/24/22 10:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BFJ0700	10/26/22	10/26/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

SS01@9'
2210418-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFJ0727	10/26/22	10/28/22	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	0.43	0.0050	"	"	"	"	10/28/22	"	
Naphthalene	ND	0.0038	"	"	"	"	10/28/22	"	
Gasoline Range Hydrocarbons	7.3	0.50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		119 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		169 %	50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	82	50	mg/kg	1	BFJ0730	10/26/22	10/27/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		76.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

SS01@9'
2210418-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0744	10/27/22	10/28/22	EPA 8270D SIM	
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	0.00840	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0613	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.147	0.00500	"	"	"	"	"	"	

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		94.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		83.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.255	0.0100	mg/L	1	BFJ0759	10/27/22	10/27/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/24/22 10:29**

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

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

SS01@9'
2210418-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	10.9	0.236	mg/kg dry	1	BFJ0757	10/27/22	10/28/22	EPA 6020B
Barium	33.6	0.471	"	"	"	"	"	"
Cadmium	0.240	0.236	"	"	"	"	"	"
Copper	7.59	0.471	"	"	"	"	"	"
Lead	10.6	0.236	"	"	"	"	"	"
Nickel	6.08	0.471	"	"	"	"	"	"
Selenium	0.403	0.306	"	"	"	"	"	"
Silver	0.0452	0.0236	"	"	"	"	"	"
Zinc	45.4	0.471	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/24/22 10:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0768	10/27/22	10/27/22	EPA 7196A	

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

Date Sampled: 10/24/22 10:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	461	0.0589	mg/L dry	1	BFJ0733	10/26/22	10/27/22	EPA 6020B	
Magnesium	227	0.0589	"	"	"	"	"	"	
Sodium	456	0.0589	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/24/22 10:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.34	0.00100	units	1	BFJ0807	10/28/22	10/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/24/22 10:29

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

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

SS01@9'
2210418-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.9	%	1	BFJ0762	10/27/22	10/27/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.33	0.0100	mmhos/cm	1	BFJ0774	10/27/22	10/27/22	EPA 120.1	

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

Date Sampled: **10/24/22 10:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BFJ0775	10/27/22	10/27/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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 BFJ0658 - EPA 5030 Soil MS

Blank (BFJ0658-BLK1)

Prepared & Analyzed: 10/24/22

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	0.0319		"	0.0400		79.7	50-150			
Surrogate: Toluene-d8	0.0481		"	0.0400		120	50-150			
Surrogate: 4-Bromofluorobenzene	0.0522		"	0.0400		130	50-150			

LCS (BFJ0658-BS1)

Prepared & Analyzed: 10/24/22

Benzene	0.0885	0.0020	mg/kg	0.100		88.5	70-130			
Toluene	0.0941	0.0050	"	0.100		94.1	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.234	0.010	"	0.200		117	70-130			
o-Xylene	0.0892	0.0050	"	0.100		89.2	70-130			
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100		94.5	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.106	0.0038	"	0.100		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	50-150			
Surrogate: Toluene-d8	0.0487		"	0.0400		122	50-150			
Surrogate: 4-Bromofluorobenzene	0.0518		"	0.0400		129	50-150			

Matrix Spike (BFJ0658-MS1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

Benzene	0.100	0.0020	mg/kg	0.100	ND	100	70-130			
Toluene	0.0867	0.0050	"	0.100	ND	86.7	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.234	0.010	"	0.200	ND	117	70-130			
o-Xylene	0.0865	0.0050	"	0.100	ND	86.5	70-130			
1,2,4-Trimethylbenzene	0.0939	0.0050	"	0.100	ND	93.9	70-130			
1,3,5-Trimethylbenzene	0.0999	0.0050	"	0.100	ND	99.9	70-130			
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.3	50-150			
Surrogate: Toluene-d8	0.0479		"	0.0400		120	50-150			
Surrogate: 4-Bromofluorobenzene	0.0510		"	0.0400		128	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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 BFJ0658 - EPA 5030 Soil MS

Matrix Spike Dup (BFJ0658-MSD1)			Source: 2210410-01		Prepared & Analyzed: 10/24/22						
Benzene	0.0997	0.0020	mg/kg	0.100	ND	99.7	70-130	0.420	30		
Toluene	0.0940	0.0050	"	0.100	ND	94.0	70-130	8.17	30		
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	3.38	30		
m,p-Xylene	0.241	0.010	"	0.200	ND	121	70-130	3.10	30		
o-Xylene	0.0896	0.0050	"	0.100	ND	89.6	70-130	3.58	30		
1,2,4-Trimethylbenzene	0.0956	0.0050	"	0.100	ND	95.6	70-130	1.74	30		
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	3.13	30		
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	1.51	30		
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.4	50-150				
Surrogate: Toluene-d8	0.0484		"	0.0400		121	50-150				
Surrogate: 4-Bromofluorobenzene	0.0505		"	0.0400		126	50-150				

Batch BFJ0727 - EPA 5030 Soil MS

Blank (BFJ0727-BLK1)			Prepared: 10/26/22 Analyzed: 10/28/22								
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	0.0356		"	0.0400		89.1	50-150				
Surrogate: Toluene-d8	0.0434		"	0.0400		108	50-150				
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150				

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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 BFJ0727 - EPA 5030 Soil MS

LCS (BFJ0727-BS1)

Prepared: 10/26/22 Analyzed: 10/28/22

Benzene	0.0888	0.0020	mg/kg	0.100		88.8	70-130			
Toluene	0.0726	0.0050	"	0.100		72.6	70-130			
Ethylbenzene	0.0980	0.0050	"	0.100		98.0	70-130			
m,p-Xylene	0.196	0.010	"	0.200		97.9	70-130			
o-Xylene	0.0940	0.0050	"	0.100		94.0	70-130			
1,2,4-Trimethylbenzene	0.0950	0.0050	"	0.100		95.0	70-130			
1,3,5-Trimethylbenzene	0.0968	0.0050	"	0.100		96.8	70-130			
Naphthalene	0.112	0.0038	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.6	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

Matrix Spike (BFJ0727-MS1)

Source: 2210403-04

Prepared: 10/26/22 Analyzed: 10/28/22

Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	70-130			
Toluene	0.0829	0.0050	"	0.100	ND	82.9	70-130			
Ethylbenzene	0.0710	0.0050	"	0.100	ND	71.0	70-130			
m,p-Xylene	0.168	0.010	"	0.200	ND	84.0	70-130			
o-Xylene	0.0729	0.0050	"	0.100	ND	72.9	70-130			
1,2,4-Trimethylbenzene	0.0811	0.0050	"	0.100	ND	81.1	70-130			
1,3,5-Trimethylbenzene	0.0811	0.0050	"	0.100	ND	81.1	70-130			
Naphthalene	0.103	0.0038	"	0.100	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0520		"	0.0400		130	50-150			
Surrogate: 4-Bromofluorobenzene	0.0431		"	0.0400		108	50-150			

Matrix Spike Dup (BFJ0727-MSD1)

Source: 2210403-04

Prepared: 10/26/22 Analyzed: 10/28/22

Benzene	0.0736	0.0020	mg/kg	0.100	ND	73.6	70-130	13.1	30	
Toluene	0.0775	0.0050	"	0.100	ND	77.5	70-130	6.70	30	
Ethylbenzene	0.0759	0.0050	"	0.100	ND	75.9	70-130	6.74	30	
m,p-Xylene	0.150	0.010	"	0.200	ND	75.0	70-130	11.4	30	
o-Xylene	0.0790	0.0050	"	0.100	ND	79.0	70-130	8.14	30	
1,2,4-Trimethylbenzene	0.0813	0.0050	"	0.100	ND	81.3	70-130	0.222	30	
1,3,5-Trimethylbenzene	0.0783	0.0050	"	0.100	ND	78.3	70-130	3.50	30	
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	2.32	30	
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	50-150			
Surrogate: Toluene-d8	0.0451		"	0.0400		113	50-150			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	50-150			

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFJ0659 - EPA 3550A

Blank (BFJ0659-BLK1)

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	5.76		"	12.5		46.0	30-150			

LCS (BFJ0659-BS1)

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	590	50	mg/kg	500		118	70-130			
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			

Matrix Spike (BFJ0659-MS1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	472	50	mg/kg	500	32.3	88.0	70-130			
Surrogate: o-Terphenyl	11.9		"	12.5		95.1	30-150			

Matrix Spike Dup (BFJ0659-MSD1)

Source: 2210410-01

Prepared & Analyzed: 10/24/22

C10-C28 (DRO)	487	50	mg/kg	500	32.3	90.9	70-130	3.08	20	
Surrogate: o-Terphenyl	12.2		"	12.5		97.9	30-150			

Batch BFJ0730 - EPA 3550A

Blank (BFJ0730-BLK1)

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.20		"	12.5		65.6	30-150			

LCS (BFJ0730-BS1)

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	510	50	mg/kg	500		102	70-130			
Surrogate: o-Terphenyl	8.65		"	12.5		69.2	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFJ0730 - EPA 3550A

Matrix Spike (BFJ0730-MS1)		Source: 2210403-04			Prepared: 10/26/22 Analyzed: 10/27/22					
C10-C28 (DRO)	443	50	mg/kg	500	27.9	83.1	70-130			
Surrogate: o-Terphenyl	8.04		"	12.5		64.3	30-150			
Matrix Spike Dup (BFJ0730-MSD1)		Source: 2210403-04			Prepared: 10/26/22 Analyzed: 10/27/22					
C10-C28 (DRO)	483	50	mg/kg	500	27.9	91.1	70-130	8.66	20	
Surrogate: o-Terphenyl	9.29		"	12.5		74.3	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0660 - EPA 5030 Soil MS

Blank (BFJ0660-BLK1)

Prepared & Analyzed: 10/25/22

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	0.0364	"	0.0333	109	40-150
Surrogate: Fluoranthene-d10	0.0299	"	0.0333	89.7	40-150

LCS (BFJ0660-BS1)

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0382	0.00500	mg/kg	0.0333	115	31-137
Anthracene	0.0387	0.00500	"	0.0333	116	30-120
Benzo (a) anthracene	0.0340	0.00500	"	0.0333	102	30-120
Benzo (a) pyrene	0.0399	0.00500	"	0.0333	120	30-120
Benzo (b) fluoranthene	0.0376	0.00500	"	0.0333	113	30-120
Benzo (k) fluoranthene	0.0359	0.00500	"	0.0333	108	30-120
Chrysene	0.0329	0.00500	"	0.0333	98.8	30-120
Dibenz (a,h) anthracene	0.0330	0.00500	"	0.0333	99.1	30-120
Fluoranthene	0.0366	0.00500	"	0.0333	110	30-120
Fluorene	0.0384	0.00500	"	0.0333	115	30-120
Indeno (1,2,3-cd) pyrene	0.0393	0.00500	"	0.0333	118	30-120
Pyrene	0.0346	0.00500	"	0.0333	104	35-142
1-Methylnaphthalene	0.0372	0.00500	"	0.0333	112	35-142
2-Methylnaphthalene	0.0392	0.00500	"	0.0333	118	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0385	"	0.0333	115	40-150
Surrogate: Fluoranthene-d10	0.0368	"	0.0333	111	40-150

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0660 - EPA 5030 Soil MS

Matrix Spike (BFJ0660-MS1)

Source: 2210374-02

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0282	0.00500	mg/kg	0.0333	ND	84.5	31-137		
Anthracene	0.0244	0.00500	"	0.0333	ND	73.2	30-120		
Benzo (a) anthracene	0.0232	0.00500	"	0.0333	ND	69.5	30-120		
Benzo (a) pyrene	0.0254	0.00500	"	0.0333	ND	76.1	30-120		
Benzo (b) fluoranthene	0.0285	0.00500	"	0.0333	ND	85.4	30-120		
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0333	ND	87.9	30-120		
Chrysene	0.0218	0.00500	"	0.0333	ND	65.4	30-120		
Dibenz (a,h) anthracene	0.0261	0.00500	"	0.0333	ND	78.2	30-120		
Fluoranthene	0.0275	0.00500	"	0.0333	ND	82.4	30-120		
Fluorene	0.0280	0.00500	"	0.0333	ND	83.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0320	0.00500	"	0.0333	ND	96.1	30-120		
Pyrene	0.0240	0.00500	"	0.0333	ND	72.0	35-142		
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.6	15-130		
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0241		"	0.0333		72.2	40-150		
Surrogate: Fluoranthene-d10	0.0278		"	0.0333		83.4	40-150		

Matrix Spike Dup (BFJ0660-MSD1)

Source: 2210374-02

Prepared & Analyzed: 10/25/22

Acenaphthene	0.0293	0.00500	mg/kg	0.0333	ND	87.9	31-137	3.93	30
Anthracene	0.0261	0.00500	"	0.0333	ND	78.4	30-120	6.78	30
Benzo (a) anthracene	0.0249	0.00500	"	0.0333	ND	74.8	30-120	7.37	30
Benzo (a) pyrene	0.0280	0.00500	"	0.0333	ND	84.0	30-120	9.91	30
Benzo (b) fluoranthene	0.0307	0.00500	"	0.0333	ND	92.0	30-120	7.43	30
Benzo (k) fluoranthene	0.0300	0.00500	"	0.0333	ND	90.0	30-120	2.37	30
Chrysene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	5.49	30
Dibenz (a,h) anthracene	0.0287	0.00500	"	0.0333	ND	86.0	30-120	9.52	30
Fluoranthene	0.0288	0.00500	"	0.0333	ND	86.4	30-120	4.73	30
Fluorene	0.0309	0.00500	"	0.0333	ND	92.7	30-120	9.99	30
Indeno (1,2,3-cd) pyrene	0.0360	0.00500	"	0.0333	ND	108	30-120	11.6	30
Pyrene	0.0250	0.00500	"	0.0333	ND	75.1	35-142	4.12	30
1-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130	2.01	50
2-Methylnaphthalene	0.0249	0.00500	"	0.0333	ND	74.7	15-130	2.59	50
Surrogate: 2-Methylnaphthalene-d10	0.0234		"	0.0333		70.3	40-150		
Surrogate: Fluoranthene-d10	0.0299		"	0.0333		89.6	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BFJ0744 - EPA 5030 Soil MS

Blank (BFJ0744-BLK1)

Prepared & Analyzed: 10/27/22

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	0.0341		"	0.0333		102		40-150			
Surrogate: Fluoranthene-d10	0.0364		"	0.0333		109		40-150			

LCS (BFJ0744-BS1)

Prepared & Analyzed: 10/27/22

Acenaphthene	0.0339	0.00500	mg/kg	0.0333		102		31-137			
Anthracene	0.0350	0.00500	"	0.0333		105		30-120			
Benzo (a) anthracene	0.0310	0.00500	"	0.0333		93.1		30-120			
Benzo (a) pyrene	0.0290	0.00500	"	0.0333		87.0		30-120			
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333		87.9		30-120			
Benzo (k) fluoranthene	0.0298	0.00500	"	0.0333		89.4		30-120			
Chrysene	0.0310	0.00500	"	0.0333		93.0		30-120			
Dibenz (a,h) anthracene	0.0269	0.00500	"	0.0333		80.6		30-120			
Fluoranthene	0.0325	0.00500	"	0.0333		97.4		30-120			
Fluorene	0.0334	0.00500	"	0.0333		100		30-120			
Indeno (1,2,3-cd) pyrene	0.0270	0.00500	"	0.0333		81.1		30-120			
Pyrene	0.0302	0.00500	"	0.0333		90.5		35-142			
1-Methylnaphthalene	0.0354	0.00500	"	0.0333		106		35-142			
2-Methylnaphthalene	0.0346	0.00500	"	0.0333		104		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0337		"	0.0333		101		40-150			
Surrogate: Fluoranthene-d10	0.0332		"	0.0333		99.5		40-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0744 - EPA 5030 Soil MS

Matrix Spike (BFJ0744-MS1)			Source: 2210392-02		Prepared: 10/27/22 Analyzed: 10/31/22						
Acenaphthene	0.0212	0.00500	mg/kg	0.0333	ND	63.7	31-137				
Anthracene	0.0219	0.00500	"	0.0333	ND	65.6	30-120				
Benzo (a) anthracene	0.0197	0.00500	"	0.0333	ND	59.0	30-120				
Benzo (a) pyrene	0.0182	0.00500	"	0.0333	ND	54.7	30-120				
Benzo (b) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.5	30-120				
Benzo (k) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120				
Chrysene	0.0202	0.00500	"	0.0333	ND	60.5	30-120				
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120				
Fluoranthene	0.0218	0.00500	"	0.0333	ND	65.5	30-120				
Fluorene	0.0213	0.00500	"	0.0333	ND	63.8	30-120				
Indeno (1,2,3-cd) pyrene	0.0233	0.00500	"	0.0333	ND	69.9	30-120				
Pyrene	0.0167	0.00500	"	0.0333	ND	50.0	35-142				
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130				
2-Methylnaphthalene	0.0322	0.00500	"	0.0333	ND	96.6	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0177		"	0.0333		53.2	40-150				
Surrogate: Fluoranthene-d10	0.0226		"	0.0333		67.9	40-150				

Matrix Spike Dup (BFJ0744-MSD1)			Source: 2210392-02		Prepared: 10/27/22 Analyzed: 10/31/22						
Acenaphthene	0.0214	0.00500	mg/kg	0.0333	ND	64.2	31-137	0.762	30		
Anthracene	0.0221	0.00500	"	0.0333	ND	66.3	30-120	1.10	30		
Benzo (a) anthracene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	2.11	30		
Benzo (a) pyrene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	0.144	30		
Benzo (b) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	25.4	30		
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	5.90	30		
Chrysene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	5.95	30		
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	3.63	30		
Fluoranthene	0.0210	0.00500	"	0.0333	ND	63.0	30-120	3.96	30		
Fluorene	0.0214	0.00500	"	0.0333	ND	64.3	30-120	0.761	30		
Indeno (1,2,3-cd) pyrene	0.0167	0.00500	"	0.0333	ND	50.2	30-120	32.8	30		QR-02
Pyrene	0.0182	0.00500	"	0.0333	ND	54.5	35-142	8.65	30		
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	66.0	15-130	10.3	50		
2-Methylnaphthalene	0.0253	0.00500	"	0.0333	ND	75.9	15-130	23.9	50		
Surrogate: 2-Methylnaphthalene-d10	0.0220		"	0.0333		65.9	40-150				
Surrogate: Fluoranthene-d10	0.0230		"	0.0333		69.1	40-150				

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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

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

Batch BFJ0664 - EPA 3050B

Blank (BFJ0664-BLK1)

Prepared & Analyzed: 10/25/22

Boron ND 0.0100 mg/L

LCS (BFJ0664-BS1)

Prepared & Analyzed: 10/25/22

Boron 4.90 0.0100 mg/L 5.00 98.1 80-120

Duplicate (BFJ0664-DUP1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 0.156 0.0100 mg/L 0.165 5.99 20

Matrix Spike (BFJ0664-MS1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 4.86 0.0100 mg/L 5.00 0.165 94.0 75-125

Matrix Spike Dup (BFJ0664-MSD1)

Source: 2210391-01

Prepared & Analyzed: 10/25/22

Boron 4.83 0.0100 mg/L 5.00 0.165 93.4 75-125 0.631 25

Batch BFJ0759 - EPA 3050B

Blank (BFJ0759-BLK1)

Prepared & Analyzed: 10/27/22

Boron ND 0.0100 mg/L

LCS (BFJ0759-BS1)

Prepared & Analyzed: 10/27/22

Boron 5.43 0.0100 mg/L 5.00 109 80-120

Duplicate (BFJ0759-DUP1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron 0.261 0.0100 mg/L 0.255 2.55 20

Matrix Spike (BFJ0759-MS1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron 5.47 0.0100 mg/L 5.00 0.255 104 75-125

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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

Summit Scientific

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

Batch BFJ0759 - EPA 3050B

Matrix Spike Dup (BFJ0759-MSD1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron	5.42	0.0100	mg/L	5.00	0.255	103	75-125	0.916	25
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Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0662 - EPA 3050B

Blank (BFJ0662-BLK1)

Prepared & Analyzed: 10/25/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFJ0662-BS1)

Prepared & Analyzed: 10/25/22

Arsenic	36.2	0.200	mg/kg wet	40.0	90.6	80-120
Barium	37.3	0.400	"	40.0	93.2	80-120
Cadmium	2.32	0.200	"	2.00	116	80-120
Copper	39.8	0.400	"	40.0	99.5	80-120
Lead	22.3	0.200	"	20.0	112	80-120
Nickel	38.2	0.400	"	40.0	95.5	80-120
Selenium	4.34	0.260	"	4.00	108	80-120
Silver	1.60	0.0200	"	2.00	80.0	80-120
Zinc	38.3	0.400	"	40.0	95.9	80-120

Duplicate (BFJ0662-DUP1)

Source: 2210219-04

Prepared & Analyzed: 10/25/22

Arsenic	0.894	0.219	mg/kg dry	0.896	0.196	20
Barium	40.5	0.437	"	39.9	1.35	20
Cadmium	0.154	0.219	"	0.157	1.97	20
Copper	4.14	0.437	"	3.97	4.17	20
Lead	3.40	0.219	"	3.32	2.32	20
Nickel	3.46	0.437	"	3.32	4.02	20
Selenium	ND	0.284	"	ND		20
Silver	0.0241	0.0219	"	0.0219	9.52	20
Zinc	15.5	0.437	"	14.8	4.79	20

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0662 - EPA 3050B

Matrix Spike (BFJ0662-MS1)			Source: 2210219-04		Prepared & Analyzed: 10/25/22						
Arsenic	21.4	0.219	mg/kg dry	43.7	0.896	47.0	75-125				QM-05
Barium	64.5	0.437	"	43.7	39.9	56.1	75-125				QM-05
Cadmium	1.82	0.219	"	2.19	0.157	76.2	75-125				
Copper	38.5	0.437	"	43.7	3.97	79.0	75-125				
Lead	23.6	0.219	"	21.9	3.32	92.5	75-125				
Nickel	37.8	0.437	"	43.7	3.32	78.9	75-125				
Selenium	4.83	0.284	"	4.37	ND	111	75-125				
Silver	1.69	0.0219	"	2.19	0.0219	76.1	75-125				
Zinc	49.4	0.437	"	43.7	14.8	79.2	75-125				

Matrix Spike Dup (BFJ0662-MSD1)			Source: 2210219-04		Prepared & Analyzed: 10/25/22						
Arsenic	21.6	0.219	mg/kg dry	43.7	0.896	47.3	75-125	0.661	25		QM-05
Barium	64.1	0.437	"	43.7	39.9	55.3	75-125	0.548	25		QM-05
Cadmium	1.83	0.219	"	2.19	0.157	76.6	75-125	0.502	25		
Copper	39.7	0.437	"	43.7	3.97	81.6	75-125	2.91	25		
Lead	23.5	0.219	"	21.9	3.32	92.4	75-125	0.165	25		
Nickel	41.0	0.437	"	43.7	3.32	86.2	75-125	8.05	25		
Selenium	4.82	0.284	"	4.37	ND	110	75-125	0.381	25		
Silver	1.71	0.0219	"	2.19	0.0219	77.4	75-125	1.62	25		
Zinc	50.5	0.437	"	43.7	14.8	81.7	75-125	2.20	25		

Batch BFJ0757 - EPA 3050B

Blank (BFJ0757-BLK1)			Prepared: 10/27/22 Analyzed: 10/28/22								
Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Cadmium	ND	0.200	"								
Copper	ND	0.400	"								
Lead	ND	0.200	"								
Nickel	ND	0.400	"								
Selenium	ND	0.260	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0757 - EPA 3050B

LCS (BFJ0757-BS1)

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	45.0	0.200	mg/kg wet	40.0		113	80-120			
Barium	35.6	0.400	"	40.0		89.1	80-120			
Cadmium	1.85	0.200	"	2.00		92.5	80-120			
Copper	44.0	0.400	"	40.0		110	80-120			
Lead	18.4	0.200	"	20.0		91.8	80-120			
Nickel	44.9	0.400	"	40.0		112	80-120			
Selenium	4.57	0.260	"	4.00		114	80-120			
Silver	1.94	0.0200	"	2.00		97.0	80-120			
Zinc	45.6	0.400	"	40.0		114	80-120			

Duplicate (BFJ0757-DUP1)

Source: 2210245-02

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	2.91	0.258	mg/kg dry		2.78			4.89	20	
Barium	116	0.517	"		131			11.7	20	
Cadmium	0.282	0.258	"		0.306			8.10	20	
Copper	18.1	0.517	"		17.0			6.15	20	
Lead	24.9	0.258	"		24.8			0.505	20	
Nickel	10.4	0.517	"		11.0			5.27	20	
Selenium	0.322	0.336	"		0.322			0.00	20	
Silver	0.0346	0.0258	"		0.0408			16.4	20	
Zinc	40.1	0.517	"		41.3			2.89	20	

Matrix Spike (BFJ0757-MS1)

Source: 2210245-02

Prepared: 10/27/22 Analyzed: 10/28/22

Arsenic	45.5	0.258	mg/kg dry	51.7	2.78	82.7	75-125			
Barium	227	0.517	"	51.7	131	186	75-125			QM-05
Cadmium	3.17	0.258	"	2.58	0.306	111	75-125			
Copper	53.0	0.517	"	51.7	17.0	69.7	75-125			QM-05
Lead	51.6	0.258	"	25.8	24.8	104	75-125			
Nickel	46.3	0.517	"	51.7	11.0	68.4	75-125			QM-05
Selenium	6.63	0.336	"	5.17	0.322	122	75-125			
Silver	2.74	0.0258	"	2.58	0.0408	104	75-125			
Zinc	84.4	0.517	"	51.7	41.3	83.4	75-125			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0757 - EPA 3050B

Matrix Spike Dup (BFJ0757-MSD1)		Source: 2210245-02			Prepared: 10/27/22 Analyzed: 10/28/22					
Arsenic	42.5	0.258	mg/kg dry	51.7	2.78	76.9	75-125	6.83	25	
Barium	198	0.517	"	51.7	131	130	75-125	13.8	25	QM-05
Cadmium	2.93	0.258	"	2.58	0.306	101	75-125	8.19	25	
Copper	60.4	0.517	"	51.7	17.0	83.8	75-125	12.9	25	
Lead	47.1	0.258	"	25.8	24.8	86.4	75-125	9.07	25	
Nickel	45.7	0.517	"	51.7	11.0	67.3	75-125	1.27	25	QM-05
Selenium	6.37	0.336	"	5.17	0.322	117	75-125	4.06	25	
Silver	2.44	0.0258	"	2.58	0.0408	92.9	75-125	11.5	25	
Zinc	84.9	0.517	"	51.7	41.3	84.3	75-125	0.504	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFJ0687 - 3060A Mod

Blank (BFJ0687-BLK1)

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFJ0687-BS1)

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 21.2 0.30 mg/kg wet 25.0 85.0 80-120

Duplicate (BFJ0687-DUP1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFJ0687-MS1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 21.9 0.30 mg/kg dry 25.6 ND 85.6 75-125

Matrix Spike Dup (BFJ0687-MSD1)

Source: 2210419-06

Prepared: 10/25/22 Analyzed: 10/26/22

Chromium, Hexavalent 23.6 0.30 mg/kg dry 25.6 ND 92.2 75-125 7.42 20

Batch BFJ0768 - 3060A Mod

Blank (BFJ0768-BLK1)

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFJ0768-BS1)

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent 28.2 0.30 mg/kg wet 25.0 113 80-120

Duplicate (BFJ0768-DUP1)

Source: 2210217-05

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFJ0768-MS1)

Source: 2210217-05

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent 36.2 0.30 mg/kg dry 29.5 ND 123 75-125

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFJ0768 - 3060A Mod

Matrix Spike Dup (BFJ0768-MSD1)		Source: 2210217-05			Prepared & Analyzed: 10/27/22					
Chromium, Hexavalent		36.6	0.30	mg/kg dry	29.5	ND	124	75-125	0.972	20

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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 BFJ0673 - General Preparation

Blank (BFJ0673-BLK1)

Prepared: 10/25/22 Analyzed: 10/26/22

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

LCS (BFJ0673-BS1)

Prepared: 10/25/22 Analyzed: 10/26/22

Calcium	6.06	0.0500	mg/L wet	5.00	121	70-130
Magnesium	5.53	0.0500	"	5.00	111	70-130
Sodium	5.82	0.0500	"	5.00	116	70-130

Batch BFJ0733 - General Preparation

Blank (BFJ0733-BLK1)

Prepared: 10/26/22 Analyzed: 10/27/22

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

LCS (BFJ0733-BS1)

Prepared: 10/26/22 Analyzed: 10/27/22

Calcium	4.53	0.0500	mg/L wet	5.00	90.6	70-130
Magnesium	5.19	0.0500	"	5.00	104	70-130
Sodium	5.46	0.0500	"	5.00	109	70-130

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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

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

Batch BFJ0668 - General Preparation

Duplicate (BFJ0668-DUP1)		Source: 2210391-01			Prepared & Analyzed: 10/25/22						
% Solids	79.6		%		81.1			1.86		20	

Batch BFJ0762 - General Preparation

Duplicate (BFJ0762-DUP1)		Source: 2210286-10			Prepared & Analyzed: 10/27/22						
% Solids	90.2		%		92.8			2.94		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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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

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

Batch BFJ0699 - General Preparation

Blank (BFJ0699-BLK1)

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0699-BS1)

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFJ0699-DUP1)

Source: 2210316-01

Prepared & Analyzed: 10/26/22

Specific Conductance (EC) 0.413 0.0100 mmhos/cm 0.424 2.61 20

Batch BFJ0774 - General Preparation

Blank (BFJ0774-BLK1)

Prepared & Analyzed: 10/27/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0774-BS1)

Prepared & Analyzed: 10/27/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFJ0774-DUP1)

Source: 2210384-01

Prepared & Analyzed: 10/27/22

Specific Conductance (EC) 0.855 0.0100 mmhos/cm 0.849 0.634 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

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

Summit Scientific

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

Batch BFJ0700 - General Preparation

LCS (BFJ0700-BS1)

Prepared & Analyzed: 10/26/22

pH	9.20		pH Units	9.18	100	95-105
----	------	--	----------	------	-----	--------

Duplicate (BFJ0700-DUP1)

Source: 2210316-01

Prepared & Analyzed: 10/26/22

pH	7.82		pH Units	7.73		1.16	20
----	------	--	----------	------	--	------	----

Batch BFJ0775 - General Preparation

LCS (BFJ0775-BS1)

Prepared & Analyzed: 10/27/22

pH	9.03		pH Units	9.18	98.4	95-105
----	------	--	----------	------	------	--------

Duplicate (BFJ0775-DUP1)

Source: 2210384-01

Prepared & Analyzed: 10/27/22

pH	8.00		pH Units	7.96		0.501	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/01/22 12:51

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

November 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2210583

Enclosed are the results of analyses for samples received by Summit Scientific on 10/31/22 17:31. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 12:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2210583-01	Water	10/31/22 14:55	10/31/22 17:31

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

2210583

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

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: Tolens 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		
1	LOW	10/31/22	1455	3	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>											<input checked="" type="checkbox"/>	
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 10/31/22 1703	Received by: TASMAN LOCKBOX	Date/Time: 10/31/22 1703	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman Lockbox	Date/Time: 10/31/22 1731	Received by: 	Date/Time: 10/31/22 1731	Sample Integrity: Temperature Upon Receipt: 6.1 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2210583Client: PacTasmanClient Project ID: Toxems 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

10-31-22 1731
+600 ps



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 12:58

GW01
2210583-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/31/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFK0107	11/03/22	11/05/22	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: **10/31/22 14:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 12:58

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 BFK0107 - EPA 5030 Water MS

Blank (BFK0107-BLK1)

Prepared: 11/03/22 Analyzed: 11/04/22

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	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	21-167			

LCS (BFK0107-BS1)

Prepared: 11/03/22 Analyzed: 11/04/22

Benzene	54.1	1.0	ug/l	50.0		108	51-132			
Toluene	49.8	1.0	"	50.0		99.6	51-138			
Ethylbenzene	47.4	1.0	"	50.0		94.9	58-146			
m,p-Xylene	96.1	2.0	"	100		96.1	57-144			
o-Xylene	47.2	1.0	"	50.0		94.4	53-146			
Naphthalene	52.0	1.0	"	50.0		104	70-130			
1,2,4-Trimethylbenzene	50.4	1.0	"	50.0		101	70-130			
1,3,5-Trimethylbenzene	49.5	1.0	"	50.0		99.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109	23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9	21-167			

Matrix Spike (BFK0107-MS1)

Source: 2210581-01

Prepared: 11/03/22 Analyzed: 11/04/22

Benzene	59.0	1.0	ug/l	50.0	ND	118	34-141			
Toluene	58.8	1.0	"	50.0	4.54	109	27-151			
Ethylbenzene	59.6	1.0	"	50.0	1.75	116	29-160			
m,p-Xylene	109	2.0	"	100	ND	109	20-166			
o-Xylene	55.4	1.0	"	50.0	ND	111	33-159			
Naphthalene	57.8	1.0	"	50.0	9.09	97.4	70-130			
1,2,4-Trimethylbenzene	63.2	1.0	"	50.0	ND	126	70-130			
1,3,5-Trimethylbenzene	57.4	1.0	"	50.0	ND	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	23-173			
Surrogate: Toluene-d8	13.9		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	19.2		"	13.3		144	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 12:58

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 BFK0107 - EPA 5030 Water MS

Matrix Spike Dup (BFK0107-MSD1)	Source: 2210581-01			Prepared: 11/03/22 Analyzed: 11/04/22						
Benzene	56.6	1.0	ug/l	50.0	ND	113	34-141	4.19	30	
Toluene	56.4	1.0	"	50.0	4.54	104	27-151	4.20	30	
Ethylbenzene	55.1	1.0	"	50.0	1.75	107	29-160	7.71	30	
m,p-Xylene	108	2.0	"	100	ND	108	20-166	0.674	30	
o-Xylene	51.8	1.0	"	50.0	ND	104	33-159	6.85	30	
Naphthalene	56.2	1.0	"	50.0	9.09	94.2	70-130	2.81	30	
1,2,4-Trimethylbenzene	55.8	1.0	"	50.0	ND	112	70-130	12.5	30	
1,3,5-Trimethylbenzene	50.9	1.0	"	50.0	ND	102	70-130	12.1	30	
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		93.5	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/08/22 12:58

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 80401

303.277.9310

January 30, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order # 2210493

Enclosed are the results of analyses for samples received by Summit Scientific on 10/26/22 18:00. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@14.5'	2210493-01	Soil	10/26/22 10:44	10/26/22 18:00
SS02@10.5'	2210493-02	Soil	10/26/22 09:50	10/26/22 18:00

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

2210493

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

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: Totems 44-24 Tanks Battery

Sampler Name: Aaron Otilar

Project Number: 44

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	SS03 @ 14.5'	10/26/22	1044	3			X			X				X	X			X				
2	SS02 @ 10.5'	10/26/22	0950	3			X			X				X	X	X	X	X	X			
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
<i>Aaron Otilar</i>	10/26/22 1612	Tasman Lockbox	10/26/22 1612	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
<i>Tasman Lockbox</i>	10/26/22 1800	<i>[Signature]</i>	10/26/22 1800	48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>10.4</u>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2210493Client: PactasmanClient Project ID: tohem 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

☐ ☐ ☐ ☐ ☐

Matrix (Check all that apply)

Air ☐Soil/Solid ☒Water ☐Other ☐

Temp (°C)

10.2

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>same day</u>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

10.26.22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS03@14.5'
2210493-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFJ0749	10/26/22	10/26/22	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: **10/26/22 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		120 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		116 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFJ0750	10/26/22	10/26/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS03@14.5'
2210493-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500		mg/kg	1	BFK0084	11/03/22	11/04/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.20	0.200		mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	ND	0.200		"	"	"	"	"	"	
Lead	7.54	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/26/22 10:44**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5			%	1	BFK0516	11/18/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS02@10.5'
2210493-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	0.0088	0.0020		mg/kg	1	BFJ0749	10/26/22	10/27/22	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	2.1	0.50		"	100	"	"	"	"	
Xylenes (total)	17	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	16	0.50		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	14	0.50		"	"	"	"	"	"	
Naphthalene	2.3	0.38		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	700	50		"	"	"	"	"	"	

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		113 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		153 %		50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	180	50		mg/kg	1	BFJ0750	10/26/22	10/26/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		84.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS02@10.5'
2210493-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0751	10/27/22	10/28/22	EPA 8270D SIM	
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	0.0656	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.164	0.00500		"	"	"	"	"	"	

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		79.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.208	0.0100		mg/L	1	BFJ0759	10/27/22	10/28/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/26/22 09:50**

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

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS02@10.5'
2210493-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.304	0.204	mg/kg dry	1	BFJ0756	10/27/22	10/27/22	EPA 6020B	
Arsenic	1.46	0.234	0.197	"	"	"	"	"	"	
Barium	25.7	0.467	0.369	"	"	"	"	"	"	
Cadmium	0.0561	0.234	0.00841	"	"	"	"	"	"	
Copper	6.34	0.467	0.0244	"	"	"	"	"	"	
Lead	4.65	0.234	0.0642	"	"	"	"	"	"	
Nickel	3.98	0.467	0.0713	"	"	"	"	"	"	
Silver	0.0140	0.0234	0.00312	"	"	"	"	"	"	
Zinc	20.4	0.467	0.311	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/26/22 09:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0769	10/27/22	10/27/22	EPA 7196A	

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

Date Sampled: 10/26/22 09:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.1	0.0584		mg/L dry	1	BFJ0779	10/27/22	10/29/22	EPA 6020B	
Magnesium	8.87	0.0584		"	"	"	"	"	"	
Sodium	139	0.0584		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/26/22 09:50

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.32	0.00100		units	1	BFJ0836	10/31/22	10/31/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

SS02@10.5'
2210493-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.6			%	1	BFJ0762	10/27/22	10/27/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.682	0.0100		mmhos/cm	1	BFJ0817	10/28/22	10/28/22	EPA 120.1	

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

Date Sampled: **10/26/22 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.58			pH Units	1	BFJ0816	10/28/22	10/28/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0749 - EPA 5030 Soil MS

Blank (BFJ0749-BLK1)

Prepared: 10/26/22 Analyzed: 10/27/22

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	0.0426		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0447		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	50-150			

LCS (BFJ0749-BS1)

Prepared: 10/26/22 Analyzed: 10/27/22

Benzene	0.0768	0.0020	mg/kg	0.100		76.8	70-130			
Toluene	0.0735	0.0050	"	0.100		73.5	70-130			
Ethylbenzene	0.0778	0.0050	"	0.100		77.8	70-130			
m,p-Xylene	0.155	0.010	"	0.200		77.7	70-130			
o-Xylene	0.0799	0.0050	"	0.100		79.9	70-130			
1,2,4-Trimethylbenzene	0.0900	0.0050	"	0.100		90.0	70-130			
1,3,5-Trimethylbenzene	0.0882	0.0050	"	0.100		88.2	70-130			
Naphthalene	0.130	0.0038	"	0.100		130	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.5	50-150			
Surrogate: Toluene-d8	0.0447		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400		107	50-150			

Matrix Spike (BFJ0749-MS1)

Source: 2210486-01

Prepared: 10/26/22 Analyzed: 10/27/22

Benzene	0.0781	0.0020	mg/kg	0.100	ND	78.1	70-130			
Toluene	0.0752	0.0050	"	0.100	ND	75.2	70-130			
Ethylbenzene	0.0764	0.0050	"	0.100	ND	76.4	70-130			
m,p-Xylene	0.151	0.010	"	0.200	ND	75.6	70-130			
o-Xylene	0.0785	0.0050	"	0.100	ND	78.5	70-130			
1,2,4-Trimethylbenzene	0.0884	0.0050	"	0.100	ND	88.4	70-130			
1,3,5-Trimethylbenzene	0.0850	0.0050	"	0.100	ND	85.0	70-130			
Naphthalene	0.122	0.0038	"	0.100	ND	122	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0423		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0458		"	0.0400		114	50-150			
Surrogate: 4-Bromofluorobenzene	0.0432		"	0.0400		108	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0749 - EPA 5030 Soil MS

Matrix Spike Dup (BFJ0749-MSD1)		Source: 2210486-01			Prepared: 10/26/22 Analyzed: 10/27/22					
Benzene	0.0752	0.0020	mg/kg	0.100	ND	75.2	70-130	3.80	30	
Toluene	0.0773	0.0050	"	0.100	ND	77.3	70-130	2.71	30	
Ethylbenzene	0.0791	0.0050	"	0.100	ND	79.1	70-130	3.59	30	
m,p-Xylene	0.157	0.010	"	0.200	ND	78.6	70-130	3.95	30	
o-Xylene	0.0804	0.0050	"	0.100	ND	80.4	70-130	2.38	30	
1,2,4-Trimethylbenzene	0.0896	0.0050	"	0.100	ND	89.6	70-130	1.35	30	
1,3,5-Trimethylbenzene	0.0886	0.0050	"	0.100	ND	88.6	70-130	4.18	30	
Naphthalene	0.121	0.0038	"	0.100	ND	121	70-130	0.420	30	
Surrogate: 1,2-Dichloroethane-d4		0.0425	"	0.0400		106	50-150			
Surrogate: Toluene-d8		0.0494	"	0.0400		123	50-150			
Surrogate: 4-Bromofluorobenzene		0.0418	"	0.0400		104	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFJ0750 - EPA 3550A

Blank (BFJ0750-BLK1)

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	9.72		"	12.5		77.8	30-150			

LCS (BFJ0750-BS1)

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	496	50	mg/kg	500		99.1	70-130			
Surrogate: o-Terphenyl	16.0		"	12.5		128	30-150			

Matrix Spike (BFJ0750-MS1)

Source: 2210470-01

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	485	50	mg/kg	500	19.2	93.2	70-130			
Surrogate: o-Terphenyl	15.9		"	12.5		127	30-150			

Matrix Spike Dup (BFJ0750-MSD1)

Source: 2210470-01

Prepared: 10/26/22 Analyzed: 10/27/22

C10-C28 (DRO)	523	50	mg/kg	500	19.2	101	70-130	7.41	20	
Surrogate: o-Terphenyl	11.1		"	12.5		88.8	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0751 - EPA 5030 Soil MS

Blank (BFJ0751-BLK1)

Prepared & Analyzed: 10/27/22

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	0.0379		"	0.0333		114		40-150			
Surrogate: Fluoranthene-d10	0.0336		"	0.0333		101		40-150			

LCS (BFJ0751-BS1)

Prepared & Analyzed: 10/27/22

Acenaphthene	0.0360	0.00500	mg/kg	0.0333		108		31-137			
Anthracene	0.0374	0.00500	"	0.0333		112		30-120			
Benzo (a) anthracene	0.0341	0.00500	"	0.0333		102		30-120			
Benzo (a) pyrene	0.0393	0.00500	"	0.0333		118		30-120			
Benzo (b) fluoranthene	0.0372	0.00500	"	0.0333		112		30-120			
Benzo (k) fluoranthene	0.0338	0.00500	"	0.0333		101		30-120			
Chrysene	0.0329	0.00500	"	0.0333		98.8		30-120			
Dibenz (a,h) anthracene	0.0370	0.00500	"	0.0333		111		30-120			
Fluoranthene	0.0371	0.00500	"	0.0333		111		30-120			
Fluorene	0.0376	0.00500	"	0.0333		113		30-120			
Indeno (1,2,3-cd) pyrene	0.0368	0.00500	"	0.0333		110		30-120			
Pyrene	0.0349	0.00500	"	0.0333		105		35-142			
1-Methylnaphthalene	0.0368	0.00500	"	0.0333		110		35-142			
2-Methylnaphthalene	0.0363	0.00500	"	0.0333		109		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0385		"	0.0333		115		40-150			
Surrogate: Fluoranthene-d10	0.0363		"	0.0333		109		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFJ0751 - EPA 5030 Soil MS

Matrix Spike (BFJ0751-MS1)

Source: 2210384-01

Prepared & Analyzed: 10/27/22

Acenaphthene	0.0240	0.00500	mg/kg	0.0333	ND	71.9	31-137		
Anthracene	0.0210	0.00500	"	0.0333	ND	63.1	30-120		
Benzo (a) anthracene	0.0206	0.00500	"	0.0333	ND	61.9	30-120		
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.7	30-120		
Benzo (b) fluoranthene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120		
Chrysene	0.0189	0.00500	"	0.0333	ND	56.6	30-120		
Dibenz (a,h) anthracene	0.0219	0.00500	"	0.0333	ND	65.8	30-120		
Fluoranthene	0.0217	0.00500	"	0.0333	ND	65.1	30-120		
Fluorene	0.0205	0.00500	"	0.0333	ND	61.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120		
Pyrene	0.0205	0.00500	"	0.0333	ND	61.4	35-142		
1-Methylnaphthalene	0.0226	0.00500	"	0.0333	ND	67.8	15-130		
2-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.3	40-150		
Surrogate: Fluoranthene-d10	0.0220		"	0.0333		65.9	40-150		

Matrix Spike Dup (BFJ0751-MSD1)

Source: 2210384-01

Prepared & Analyzed: 10/27/22

Acenaphthene	0.0294	0.00500	mg/kg	0.0333	ND	88.2	31-137	20.4	30
Anthracene	0.0238	0.00500	"	0.0333	ND	71.5	30-120	12.4	30
Benzo (a) anthracene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	8.61	30
Benzo (a) pyrene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	10.4	30
Benzo (b) fluoranthene	0.0270	0.00500	"	0.0333	ND	81.0	30-120	10.4	30
Benzo (k) fluoranthene	0.0270	0.00500	"	0.0333	ND	80.9	30-120	11.5	30
Chrysene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	10.1	30
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333	ND	73.8	30-120	11.5	30
Fluoranthene	0.0251	0.00500	"	0.0333	ND	75.2	30-120	14.4	30
Fluorene	0.0275	0.00500	"	0.0333	ND	82.5	30-120	29.4	30
Indeno (1,2,3-cd) pyrene	0.0232	0.00500	"	0.0333	ND	69.5	30-120	11.8	30
Pyrene	0.0232	0.00500	"	0.0333	ND	69.5	35-142	12.3	30
1-Methylnaphthalene	0.0262	0.00500	"	0.0333	ND	78.7	15-130	14.9	50
2-Methylnaphthalene	0.0278	0.00500	"	0.0333	ND	83.5	15-130	17.4	50
Surrogate: 2-Methylnaphthalene-d10	0.0251		"	0.0333		75.2	40-150		
Surrogate: Fluoranthene-d10	0.0254		"	0.0333		76.1	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0084 - EPA 5030 Soil MS

Blank (BFK0084-BLK1)

Prepared: 11/03/22 Analyzed: 11/04/22

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	0.0246		"	0.0333		73.8	40-150			
Surrogate: Fluoranthene-d10	0.0272		"	0.0333		81.6	40-150			

LCS (BFK0084-BS1)

Prepared: 11/03/22 Analyzed: 11/04/22

Acenaphthene	0.0279	0.00500	mg/kg	0.0333		83.8	31-137			
Anthracene	0.0277	0.00500	"	0.0333		83.0	30-120			
Benzo (a) anthracene	0.0285	0.00500	"	0.0333		85.6	30-120			
Benzo (a) pyrene	0.0290	0.00500	"	0.0333		87.1	30-120			
Benzo (b) fluoranthene	0.0289	0.00500	"	0.0333		86.7	30-120			
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333		85.9	30-120			
Chrysene	0.0286	0.00500	"	0.0333		85.9	30-120			
Dibenz (a,h) anthracene	0.0280	0.00500	"	0.0333		84.1	30-120			
Fluoranthene	0.0271	0.00500	"	0.0333		81.3	30-120			
Fluorene	0.0279	0.00500	"	0.0333		83.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0292	0.00500	"	0.0333		87.7	30-120			
Pyrene	0.0284	0.00500	"	0.0333		85.3	35-142			
1-Methylnaphthalene	0.0308	0.00500	"	0.0333		92.3	35-142			
2-Methylnaphthalene	0.0240	0.00500	"	0.0333		72.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0292		"	0.0333		87.7	40-150			
Surrogate: Fluoranthene-d10	0.0276		"	0.0333		82.8	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0084 - EPA 5030 Soil MS

Matrix Spike (BFK0084-MS1)

Source: 2210493-01

Prepared: 11/03/22 Analyzed: 11/05/22

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	55.0	31-137		
Anthracene	0.0187	0.00500	"	0.0333	ND	56.0	30-120		
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120		
Benzo (a) pyrene	0.0181	0.00500	"	0.0333	ND	54.4	30-120		
Benzo (b) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120		
Benzo (k) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.1	30-120		
Chrysene	0.0179	0.00500	"	0.0333	ND	53.6	30-120		
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.6	30-120		
Fluoranthene	0.0206	0.00500	"	0.0333	ND	61.8	30-120		
Fluorene	0.0190	0.00500	"	0.0333	ND	57.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120		
Pyrene	0.0182	0.00500	"	0.0333	ND	54.5	35-142		
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.3	15-130		
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0165		"	0.0333		49.6	40-150		
Surrogate: Fluoranthene-d10	0.0204		"	0.0333		61.3	40-150		

Matrix Spike Dup (BFK0084-MSD1)

Source: 2210493-01

Prepared: 11/03/22 Analyzed: 11/05/22

Acenaphthene	0.0198	0.00500	mg/kg	0.0333	ND	59.5	31-137	7.81	30
Anthracene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	5.24	30
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.5	30-120	5.31	30
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	5.71	30
Benzo (b) fluoranthene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	8.20	30
Benzo (k) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	8.53	30
Chrysene	0.0189	0.00500	"	0.0333	ND	56.6	30-120	5.35	30
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	8.77	30
Fluoranthene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	1.05	30
Fluorene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	6.27	30
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	8.55	30
Pyrene	0.0197	0.00500	"	0.0333	ND	59.2	35-142	8.27	30
1-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.3	15-130	7.24	50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	14.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0177		"	0.0333		53.2	40-150		
Surrogate: Fluoranthene-d10	0.0209		"	0.0333		62.7	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

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

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

Batch BFJ0759 - EPA 3050B

Blank (BFJ0759-BLK1)

Prepared & Analyzed: 10/27/22

Boron ND 0.0100 mg/L

LCS (BFJ0759-BS1)

Prepared & Analyzed: 10/27/22

Boron 5.43 0.0100 mg/L 5.00 109 80-120

Duplicate (BFJ0759-DUP1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron 0.261 0.0100 mg/L 0.255 2.55 20

Matrix Spike (BFJ0759-MS1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron 5.47 0.0100 mg/L 5.00 0.255 104 75-125

Matrix Spike Dup (BFJ0759-MSD1)

Source: 2210418-06

Prepared & Analyzed: 10/27/22

Boron 5.42 0.0100 mg/L 5.00 0.255 103 75-125 0.916 25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0756 - EPA 3050B

Blank (BFJ0756-BLK1)

Prepared & Analyzed: 10/27/22

Selenium	ND	0.260	mg/kg wet
Arsenic	ND	0.200	"
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	0.108	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	0.00360	0.0200	"
Zinc	ND	0.400	"

LCS (BFJ0756-BS1)

Prepared & Analyzed: 10/27/22

Selenium	4.03	0.260	mg/kg wet	4.00	101	80-120
Arsenic	36.9	0.200	"	40.0	92.3	80-120
Barium	37.9	0.400	"	40.0	94.8	80-120
Cadmium	1.94	0.200	"	2.00	96.9	80-120
Copper	38.9	0.400	"	40.0	97.2	80-120
Lead	23.5	0.200	"	20.0	118	80-120
Nickel	36.6	0.400	"	40.0	91.4	80-120
Silver	1.62	0.0200	"	2.00	81.2	80-120
Zinc	37.1	0.400	"	40.0	92.8	80-120

Duplicate (BFJ0756-DUP1)

Source: 2210217-05

Prepared & Analyzed: 10/27/22

Selenium	ND	0.307	mg/kg dry	ND		20
Arsenic	1.93	0.236	"	1.94	0.415	20
Barium	64.4	0.472	"	65.6	1.93	20
Cadmium	0.144	0.236	"	0.141	1.99	20
Copper	6.83	0.472	"	6.84	0.0899	20
Lead	5.76	0.236	"	6.03	4.59	20
Nickel	5.75	0.472	"	5.64	1.97	20
Silver	0.0302	0.0236	"	0.0307	1.55	20
Zinc	22.0	0.472	"	21.8	0.735	20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFJ0756 - EPA 3050B

Matrix Spike (BFJ0756-MS1)			Source: 2210217-05		Prepared & Analyzed: 10/27/22					
Selenium	4.18	0.307	mg/kg dry	4.72	ND	88.5	75-125			
Arsenic	45.7	0.236	"	47.2	1.94	92.7	75-125			
Barium	84.2	0.472	"	47.2	65.6	39.4	75-125			QM-05
Cadmium	2.13	0.236	"	2.36	0.141	84.2	75-125			
Copper	43.1	0.472	"	47.2	6.84	76.9	75-125			
Lead	30.0	0.236	"	23.6	6.03	101	75-125			
Nickel	44.5	0.472	"	47.2	5.64	82.2	75-125			
Silver	2.13	0.0236	"	2.36	0.0307	89.1	75-125			
Zinc	51.9	0.472	"	47.2	21.8	63.6	75-125			QM-05

Matrix Spike Dup (BFJ0756-MSD1)			Source: 2210217-05		Prepared & Analyzed: 10/27/22					
Selenium	4.22	0.307	mg/kg dry	4.72	ND	89.3	75-125	0.889	25	
Arsenic	45.7	0.236	"	47.2	1.94	92.7	75-125	0.0795	25	
Barium	80.3	0.472	"	47.2	65.6	31.1	75-125	4.74	25	QM-05
Cadmium	2.09	0.236	"	2.36	0.141	82.5	75-125	1.90	25	
Copper	43.2	0.472	"	47.2	6.84	77.0	75-125	0.0832	25	
Lead	29.1	0.236	"	23.6	6.03	97.7	75-125	2.90	25	
Nickel	44.8	0.472	"	47.2	5.64	82.9	75-125	0.751	25	
Silver	2.07	0.0236	"	2.36	0.0307	86.4	75-125	3.03	25	
Zinc	66.2	0.472	"	47.2	21.8	93.9	75-125	24.3	25	

Batch BFK0526 - EPA 3050B

Blank (BFK0526-BLK1)			Prepared: 11/19/22 Analyzed: 11/21/22							
Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0526 - EPA 3050B

LCS (BFK0526-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	46.7	0.200	mg/kg wet	40.0		117	80-120
Cadmium	2.17	0.200	"	2.00		108	80-120
Lead	21.1	0.200	"	20.0		105	80-120

Duplicate (BFK0526-DUP1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	4.65	0.200	mg/kg dry		3.20		37.1	20	QR-03
Cadmium	0.139	0.200	"		0.146		4.45	20	
Lead	9.36	0.200	"		7.54		21.5	20	QR-03

Matrix Spike (BFK0526-MS1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	63.2	0.200	mg/kg dry	46.2	3.20	130	75-125		QM-05
Cadmium	2.55	0.200	"	2.31	0.146	104	75-125		
Lead	33.5	0.200	"	23.1	7.54	112	75-125		

Matrix Spike Dup (BFK0526-MSD1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	62.1	0.200	mg/kg dry	46.2	3.20	127	75-125	1.80	25	QM-05
Cadmium	2.63	0.200	"	2.31	0.146	108	75-125	3.11	25	
Lead	31.0	0.200	"	23.1	7.54	101	75-125	7.86	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFJ0769 - 3060A Mod

Blank (BFJ0769-BLK1)

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFJ0769-BS1)

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent 25.0 0.30 mg/kg wet 25.0 99.8 80-120

Duplicate (BFJ0769-DUP1)

Source: 2210428-01

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFJ0769-MS1)

Source: 2210428-01

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent 36.8 0.30 mg/kg dry 39.6 ND 93.0 75-125

Matrix Spike Dup (BFJ0769-MSD1)

Source: 2210428-01

Prepared & Analyzed: 10/27/22

Chromium, Hexavalent 38.5 0.30 mg/kg dry 39.6 ND 97.4 75-125 4.62 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

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

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

Batch BFJ0779 - General Preparation

Blank (BFJ0779-BLK1)

Prepared: 10/27/22 Analyzed: 10/28/22

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

LCS (BFJ0779-BS1)

Prepared: 10/27/22 Analyzed: 10/28/22

Calcium	5.79	0.0500	mg/L wet	5.00	116	70-130
Magnesium	5.56	0.0500	"	5.00	111	70-130
Sodium	5.29	0.0500	"	5.00	106	70-130

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

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

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

Batch BFJ0762 - General Preparation

Duplicate (BFJ0762-DUP1)		Source: 2210286-10			Prepared & Analyzed: 10/27/22						
% Solids	90.2		%		92.8			2.94		20	

Batch BFK0516 - General Preparation

Duplicate (BFK0516-DUP1)		Source: 2210371-01			Prepared: 11/18/22 Analyzed: 11/21/22						
% Solids	98.7		%		99.0			0.281		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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

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

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

Batch BFJ0817 - General Preparation

Blank (BFJ0817-BLK1)

Prepared & Analyzed: 10/28/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0817-BS1)

Prepared & Analyzed: 10/28/22

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.1 95-105

Duplicate (BFJ0817-DUP1)

Source: 2210441-02

Prepared & Analyzed: 10/28/22

Specific Conductance (EC) 0.358 0.0100 mmhos/cm 0.381 6.26 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

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 BFJ0816 - General Preparation

LCS (BFJ0816-BS1)

Prepared & Analyzed: 10/28/22

pH	9.18	pH Units	9.18	100	95-105
----	------	----------	------	-----	--------

Duplicate (BFJ0816-DUP1)

Source: 2210441-02

Prepared & Analyzed: 10/28/22

pH	8.22	pH Units	8.23	0.122	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/30/23 16:12

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

December 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211025

Enclosed are the results of analyses for samples received by Summit Scientific on 11/01/22 15:50. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS04@5'	2211025-01	Soil	11/01/22 09:11	11/01/22 15:50
SS05@10.5'	2211025-02	Soil	11/01/22 09:38	11/01/22 15:50
SS06@14.5'	2211025-03	Soil	11/01/22 10:10	11/01/22 15:50
SS07@14.5'	2211025-04	Soil	11/01/22 12:40	11/01/22 15:50
SS08@14.5'	2211025-05	Soil	11/01/22 12:48	11/01/22 15:50
SS09@10.5'	2211025-06	Soil	11/01/22 12:55	11/01/22 15:50
SS10@5'	2211025-07	Soil	11/01/22 13:45	11/01/22 15:50
SS11@14.5'	2211025-08	Soil	11/01/22 13:55	11/01/22 15:50

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

2211025

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

Client: PDC/Tasman

Address: 6855 W 119th Ave

City/State/Zip: Broomfield CO 80020

Phone: 303-487-1228

Sampler Name: Aaron Otilar

Project Manager: Mark Longhurst

E-Mail: mark.longhurst@pdce.com

Page 1 of 1

Project Name: Tolens 44-24 Tank Battery

Project Number:

Project Name: 01ens 44-24 1mb Battery

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN-8260B	TPH-(C6-C36)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	SS04 @ 5'	11/1/23	0911	3			X			X				X	X			X			X	
2	SS05 @ 10.5'		0938																			
3	SS06 @ 14.5'		1010																			
4	SS07 @ 14.5'		1240																			
5	SS08 @ 14.5'		1248																			
6	SS09 @ 10.5'		1255																			
7	SS10 @ 5'		1345																			
8	SS11 @ 14.5'		1355																			
9																						
10																						

Relinquished by: Date/Time: Received by: Project Number:

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:

Samples Intact: Yes No

Notes:

Fluorene, 1-M
2-M



Sample Receipt Checklist

S2 Work Order# 2211025Client: PDC/rasmaClient Project ID: Totems 44-24 Tank Battery

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

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rush SD
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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Emailed after
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-1-22 1730



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS04@5'
2211025-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0372	92.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0438	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	6.79	54.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS04@5'
2211025-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	65.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	10.8	0.200	mg/kg dry	1	BFK0525	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.339	0.200	"	"	"	"	"	"	
Lead	12.6	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS05@10.5'
2211025-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0424	106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0426	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.50	52.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS05@10.5'
2211025-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0147	44.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.32	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	6.50	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 09:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS06@14.5'
2211025-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0376	94.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0435	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.30	50.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS06@14.5'
2211025-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0194	58.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0142	42.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.98	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	6.45	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BFK0514	11/18/22	11/19/22	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS07@14.5'
2211025-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0436	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.60	52.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS07@14.5'
2211025-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0217	65.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0168	50.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	9.70	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.269	0.200	"	"	"	"	"	"	
Lead	8.98	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.4		%	1	BFK0514	11/18/22	11/19/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS08@14.5'
2211025-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0400	99.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0434	109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.18	49.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS08@14.5'
2211025-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0237	71.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	56.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	10.8	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.323	0.200	"	"	"	"	"	"	
Lead	9.67	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 12:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	84.5		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS09@10.5'
2211025-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0379	94.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0431	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.31	50.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS09@10.5'
2211025-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0160	47.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	5.53	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	16.5	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	84.1		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS10@5'
2211025-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0370	92.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0431	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0418	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	5.92	47.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS10@5'
2211025-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0258	77.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0220	65.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.25	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.218	0.200	"	"	"	"	"	"	
Lead	8.66	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.0		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS11@14.5'
2211025-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0036	11/02/22	11/02/22	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: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0362	90.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0438	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0037	"	11/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.27	50.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

SS11@14.5'
2211025-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Fluorene	ND	0.00500	mg/kg	1	BFK0049	11/02/22	11/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0150	45.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0155	46.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	10.6	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.260	0.200	"	"	"	"	"	"	
Lead	9.33	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/01/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	86.1		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

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 BFK0036 - EPA 5030 Soil MS

Blank (BFK0036-BLK1)

Prepared: 11/01/22 Analyzed: 11/02/22

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	0.0361		"	0.0400		90.3	50-150			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	50-150			

LCS (BFK0036-BS1)

Prepared: 11/01/22 Analyzed: 11/02/22

Benzene	0.0764	0.0020	mg/kg	0.100		76.4	70-130			
Toluene	0.0749	0.0050	"	0.100		74.9	70-130			
Ethylbenzene	0.0784	0.0050	"	0.100		78.4	70-130			
m,p-Xylene	0.163	0.010	"	0.200		81.3	70-130			
o-Xylene	0.0816	0.0050	"	0.100		81.6	70-130			
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130			
1,3,5-Trimethylbenzene	0.0888	0.0050	"	0.100		88.8	70-130			
Naphthalene	0.124	0.0038	"	0.100		124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0400		83.6	50-150			
Surrogate: Toluene-d8	0.0444		"	0.0400		111	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		103	50-150			

Matrix Spike (BFK0036-MS1)

Source: 2211013-01

Prepared: 11/01/22 Analyzed: 11/02/22

Benzene	0.0758	0.0020	mg/kg	0.100	ND	75.8	70-130			
Toluene	0.0746	0.0050	"	0.100	ND	74.6	70-130			
Ethylbenzene	0.0746	0.0050	"	0.100	ND	74.6	70-130			
m,p-Xylene	0.148	0.010	"	0.200	ND	74.1	70-130			
o-Xylene	0.0778	0.0050	"	0.100	ND	77.8	70-130			
1,2,4-Trimethylbenzene	0.0860	0.0050	"	0.100	ND	86.0	70-130			
1,3,5-Trimethylbenzene	0.0846	0.0050	"	0.100	ND	84.6	70-130			
Naphthalene	0.0895	0.0038	"	0.100	ND	89.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.5	50-150			
Surrogate: Toluene-d8	0.0442		"	0.0400		111	50-150			
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0400		106	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

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 BFK0036 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0036-MSD1)		Source: 2211013-01			Prepared: 11/01/22 Analyzed: 11/02/22					
Benzene	0.0747	0.0020	mg/kg	0.100	ND	74.7	70-130	1.55	30	
Toluene	0.0724	0.0050	"	0.100	ND	72.4	70-130	3.10	30	
Ethylbenzene	0.0736	0.0050	"	0.100	ND	73.6	70-130	1.46	30	
m,p-Xylene	0.146	0.010	"	0.200	ND	73.2	70-130	1.28	30	
o-Xylene	0.0770	0.0050	"	0.100	ND	77.0	70-130	1.05	30	
1,2,4-Trimethylbenzene	0.0857	0.0050	"	0.100	ND	85.7	70-130	0.349	30	
1,3,5-Trimethylbenzene	0.0835	0.0050	"	0.100	ND	83.5	70-130	1.28	30	
Naphthalene	0.0953	0.0038	"	0.100	ND	95.3	70-130	6.23	30	
Surrogate: 1,2-Dichloroethane-d4		0.0387	"	0.0400		96.8	50-150			
Surrogate: Toluene-d8		0.0440	"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene		0.0428	"	0.0400		107	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0037 - EPA 3550A

Blank (BFK0037-BLK1)

Prepared: 11/01/22 Analyzed: 11/02/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	16.4		"	12.5	131	30-150				

LCS (BFK0037-BS1)

Prepared: 11/01/22 Analyzed: 11/02/22

C10-C28 (DRO)	502	50	mg/kg	500	100	70-130				
Surrogate: o-Terphenyl	16.5		"	12.5	132	30-150				

Matrix Spike (BFK0037-MS1)

Source: 2211013-01

Prepared: 11/01/22 Analyzed: 11/02/22

C10-C28 (DRO)	475	50	mg/kg	500	21.7	90.7	70-130			
Surrogate: o-Terphenyl	16.3		"	12.5	130	30-150				

Matrix Spike Dup (BFK0037-MSD1)

Source: 2211013-01

Prepared: 11/01/22 Analyzed: 11/02/22

C10-C28 (DRO)	450	50	mg/kg	500	21.7	85.7	70-130	5.37	20	
Surrogate: o-Terphenyl	15.9		"	12.5	127	30-150				

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0049 - EPA 5030 Soil MS

Blank (BFK0049-BLK1)

Prepared & Analyzed: 11/02/22

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	0.0361		"	0.0333		108	40-150			
Surrogate: Fluoranthene-d10	0.0284		"	0.0333		85.3	40-150			

LCS (BFK0049-BS1)

Prepared & Analyzed: 11/02/22

Acenaphthene	0.0351	0.00500	mg/kg	0.0333		105	31-137			
Anthracene	0.0316	0.00500	"	0.0333		94.9	30-120			
Benzo (a) anthracene	0.0300	0.00500	"	0.0333		90.0	30-120			
Benzo (a) pyrene	0.0345	0.00500	"	0.0333		104	30-120			
Benzo (b) fluoranthene	0.0362	0.00500	"	0.0333		109	30-120			
Benzo (k) fluoranthene	0.0372	0.00500	"	0.0333		112	30-120			
Chrysene	0.0293	0.00500	"	0.0333		87.9	30-120			
Dibenz (a,h) anthracene	0.0348	0.00500	"	0.0333		104	30-120			
Fluoranthene	0.0343	0.00500	"	0.0333		103	30-120			
Fluorene	0.0348	0.00500	"	0.0333		104	30-120			
Indeno (1,2,3-cd) pyrene	0.0327	0.00500	"	0.0333		98.2	30-120			
Pyrene	0.0318	0.00500	"	0.0333		95.3	35-142			
1-Methylnaphthalene	0.0302	0.00500	"	0.0333		90.5	35-142			
2-Methylnaphthalene	0.0319	0.00500	"	0.0333		95.6	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0311		"	0.0333		93.4	40-150			
Surrogate: Fluoranthene-d10	0.0351		"	0.0333		105	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0049 - EPA 5030 Soil MS

Matrix Spike (BKF0049-MS1)

Source: 2211009-01

Prepared & Analyzed: 11/02/22

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.7	31-137		
Anthracene	0.0229	0.00500	"	0.0333	ND	68.7	30-120		
Benzo (a) anthracene	0.0228	0.00500	"	0.0333	ND	68.4	30-120		
Benzo (a) pyrene	0.0253	0.00500	"	0.0333	ND	75.8	30-120		
Benzo (b) fluoranthene	0.0258	0.00500	"	0.0333	ND	77.4	30-120		
Benzo (k) fluoranthene	0.0267	0.00500	"	0.0333	ND	80.0	30-120		
Chrysene	0.0216	0.00500	"	0.0333	ND	64.7	30-120		
Dibenz (a,h) anthracene	0.0258	0.00500	"	0.0333	ND	77.5	30-120		
Fluoranthene	0.0241	0.00500	"	0.0333	ND	72.4	30-120		
Fluorene	0.0253	0.00500	"	0.0333	ND	75.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333	ND	71.9	30-120		
Pyrene	0.0230	0.00500	"	0.0333	ND	69.1	35-142		
1-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.4	15-130		
2-Methylnaphthalene	0.0226	0.00500	"	0.0333	ND	67.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0213		"	0.0333		63.9	40-150		
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.7	40-150		

Matrix Spike Dup (BKF0049-MSD1)

Source: 2211009-01

Prepared & Analyzed: 11/02/22

Acenaphthene	0.0262	0.00500	mg/kg	0.0333	ND	78.7	31-137	8.03	30
Anthracene	0.0237	0.00500	"	0.0333	ND	71.2	30-120	3.61	30
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	1.22	30
Benzo (a) pyrene	0.0257	0.00500	"	0.0333	ND	77.2	30-120	1.76	30
Benzo (b) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	3.09	30
Benzo (k) fluoranthene	0.0277	0.00500	"	0.0333	ND	83.1	30-120	3.77	30
Chrysene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	0.636	30
Dibenz (a,h) anthracene	0.0257	0.00500	"	0.0333	ND	77.2	30-120	0.437	30
Fluoranthene	0.0273	0.00500	"	0.0333	ND	81.9	30-120	12.3	30
Fluorene	0.0242	0.00500	"	0.0333	ND	72.5	30-120	4.63	30
Indeno (1,2,3-cd) pyrene	0.0240	0.00500	"	0.0333	ND	72.0	30-120	0.103	30
Pyrene	0.0237	0.00500	"	0.0333	ND	71.2	35-142	2.96	30
1-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.8	15-130	3.79	50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.2	15-130	7.02	50
Surrogate: 2-Methylnaphthalene-d10	0.0196		"	0.0333		59.0	40-150		
Surrogate: Fluoranthene-d10	0.0270		"	0.0333		80.9	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0525 - EPA 3050B

Blank (BFK0525-BLK1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFK0525-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	42.8	0.200	mg/kg wet	40.0		107	80-120			
Cadmium	1.70	0.200	"	2.00		84.8	80-120			
Lead	21.6	0.200	"	20.0		108	80-120			

Duplicate (BFK0525-DUP1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	11.1	0.200	mg/kg dry		10.8			2.38	20	
Cadmium	0.341	0.200	"		0.339			0.557	20	
Lead	12.0	0.200	"		12.6			4.68	20	

Matrix Spike (BFK0525-MS1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	58.0	0.200	mg/kg dry	47.4	10.8	99.6	75-125			
Cadmium	2.31	0.200	"	2.37	0.339	83.1	75-125			
Lead	32.5	0.200	"	23.7	12.6	83.8	75-125			

Matrix Spike Dup (BFK0525-MSD1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	54.7	0.200	mg/kg dry	47.4	10.8	92.6	75-125	5.89	25	
Cadmium	2.31	0.200	"	2.37	0.339	83.2	75-125	0.103	25	
Lead	31.8	0.200	"	23.7	12.6	81.0	75-125	2.12	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

12/08/22 08:52

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

Summit Scientific

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

Batch BFK0514 - General Preparation

Duplicate (BFK0514-DUP1)		Source: 2211025-01		Prepared: 11/18/22 Analyzed: 11/19/22	
% Solids	84.7		%	84.4	0.419 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 08:52

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

November 18, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211076

Enclosed are the results of analyses for samples received by Summit Scientific on 11/03/22 17:13. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG02@2.5	2211076-01	Soil	11/03/22 12:25	11/03/22 17:13
BKG02@5'	2211076-02	Soil	11/03/22 12:37	11/03/22 17:13
BKG02@7'	2211076-03	Soil	11/03/22 12:53	11/03/22 17:13
BKG02@10.5'	2211076-04	Soil	11/03/22 13:15	11/03/22 17:13
BKG02@14.5'	2211076-05	Soil	11/03/22 13:36	11/03/22 17:13

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

2211076

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

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: Totems 44-24 Tanks Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		
1	BK002 @ 2.5'	11/3/22	1225	1			X			X									X		
2	BK002 @ 5'		1237	1																	
3	BK002 @ 7'		1253	1																	
4	BK002 @ 10.5'		1315	1																	
5	BK002 @ 14.5'		1336	1																	
6																					
7																					
8																					
9																					
10																					

Relinquished by: <i>Aaron Otilar</i>	Date/Time: 11/3/22	Received by: <i>Tasman Lockbox</i>	Date/Time: 11/3/22	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <u>X</u> 48 hours _____	Notes:
Relinquished by: <i>Tasman Lockbox</i>	Date/Time: 11/3/22 1713	Received by: <i>[Signature]</i>	Date/Time: 11/3/22 1713	Sample Integrity: Temperature Upon Receipt: <u>8.4</u> Samples Intact: <u>Yes</u> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2211076Client: Pofofman Client Project ID: Totems 44-24 Tank Battery

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

	-			
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.4Thermometer # 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
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 ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	

Additional Comments (if any):

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

Custodian Printed Name

Date/Time

11-3-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@2.5
2211076-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.21	0.222	mg/kg dry	1	BFK0148	11/04/22	11/05/22	EPA 6020B	
Barium	141	0.444	"	"	"	"	"	"	
Cadmium	0.304	0.222	"	"	"	"	"	"	
Copper	7.83	0.444	"	"	"	"	"	"	
Lead	11.1	0.222	"	"	"	"	"	"	
Nickel	8.17	0.444	"	"	"	"	"	"	
Selenium	0.355	0.288	"	"	"	"	"	"	
Silver	0.0532	0.0222	"	"	"	"	"	"	
Zinc	26.5	0.444	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0211	11/08/22	11/09/22	EPA 7196A	

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

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	28.0	0.0555	mg/L dry	1	BFK0309	11/11/22	11/13/22	EPA 6020B	
Magnesium	46.3	0.0555	"	"	"	"	"	"	
Sodium	1000	0.0555	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	26.9	0.00100	units	1	BFK0359	11/14/22	11/14/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@2.5
2211076-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1		%	1	BFK0191	11/07/22	11/08/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.54	0.0100	mmhos/cm	1	BFK0333	11/12/22	11/12/22	EPA 120.1	

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

Date Sampled: **11/03/22 12:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.61		pH Units	1	BFK0334	11/12/22	11/12/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@5'
2211076-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.866	0.227	mg/kg dry	1	BFK0148	11/04/22	11/05/22	EPA 6020B	
Barium	38.7	0.455	"	"	"	"	"	"	
Cadmium	ND	0.227	"	"	"	"	"	"	
Copper	6.50	0.455	"	"	"	"	"	"	
Lead	7.22	0.227	"	"	"	"	"	"	
Nickel	4.08	0.455	"	"	"	"	"	"	
Selenium	0.360	0.295	"	"	"	"	"	"	
Silver	ND	0.0227	"	"	"	"	"	"	
Zinc	22.5	0.455	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0211	11/08/22	11/09/22	EPA 7196A	

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

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	158	0.0568	mg/L dry	1	BFK0309	11/11/22	11/13/22	EPA 6020B	
Magnesium	188	0.0568	"	"	"	"	"	"	
Sodium	1730	0.0568	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	22.0	0.00100	units	1	BFK0359	11/14/22	11/14/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@5'
2211076-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	88.0			%	1	BFK0191	11/07/22	11/08/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	7.98	0.0100		mmhos/cm	1	BFK0333	11/12/22	11/12/22	EPA 120.1	

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

Date Sampled: **11/03/22 12:37**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.28			pH Units	1	BFK0334	11/12/22	11/12/22	EPA 9045D	

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@7'
2211076-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.996	0.235	mg/kg dry	1	BFK0148	11/04/22	11/05/22	EPA 6020B	
Barium	24.1	0.470	"	"	"	"	"	"	
Cadmium	ND	0.235	"	"	"	"	"	"	
Copper	10.1	0.470	"	"	"	"	"	"	
Lead	13.0	0.235	"	"	"	"	"	"	
Nickel	5.82	0.470	"	"	"	"	"	"	
Selenium	ND	0.305	"	"	"	"	"	"	
Silver	0.0362	0.0235	"	"	"	"	"	"	
Zinc	21.7	0.470	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0211	11/08/22	11/09/22	EPA 7196A	

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

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	383	0.0587	mg/L dry	1	BFK0309	11/11/22	11/13/22	EPA 6020B	
Magnesium	337	0.0587	"	"	"	"	"	"	
Sodium	2090	0.0587	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	18.8	0.00100	units	1	BFK0359	11/14/22	11/14/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@7'
2211076-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.1		%	1	BFK0191	11/07/22	11/08/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.81	0.0100	mmhos/cm	1	BFK0333	11/12/22	11/12/22	EPA 120.1	

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

Date Sampled: **11/03/22 12:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29		pH Units	1	BFK0334	11/12/22	11/12/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@10.5'
2211076-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.35	0.229	mg/kg dry	1	BFK0148	11/04/22	11/05/22	EPA 6020B	
Barium	79.5	0.458	"	"	"	"	"	"	
Cadmium	0.426	0.229	"	"	"	"	"	"	
Copper	8.38	0.458	"	"	"	"	"	"	
Lead	12.9	0.229	"	"	"	"	"	"	
Nickel	10.5	0.458	"	"	"	"	"	"	
Selenium	ND	0.298	"	"	"	"	"	"	
Silver	0.0527	0.0229	"	"	"	"	"	"	
Zinc	30.5	0.458	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0211	11/08/22	11/09/22	EPA 7196A	

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

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	345	0.0572	mg/L dry	1	BFK0309	11/11/22	11/13/22	EPA 6020B	
Magnesium	173	0.0572	"	"	"	"	"	"	
Sodium	634	0.0572	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.94	0.00100	units	1	BFK0359	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@10.5'
2211076-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BFK0191	11/07/22	11/08/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.58	0.0100	mmhos/cm	1	BFK0333	11/12/22	11/12/22	EPA 120.1	

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

Date Sampled: **11/03/22 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BFK0334	11/12/22	11/12/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@14.5'
2211076-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.64	0.239	mg/kg dry	1	BFK0148	11/04/22	11/05/22	EPA 6020B	
Barium	128	0.478	"	"	"	"	"	"	
Cadmium	0.457	0.239	"	"	"	"	"	"	
Copper	13.2	0.478	"	"	"	"	"	"	
Lead	16.6	0.239	"	"	"	"	"	"	
Nickel	11.9	0.478	"	"	"	"	"	"	
Selenium	ND	0.310	"	"	"	"	"	"	
Silver	0.0927	0.0239	"	"	"	"	"	"	
Zinc	35.6	0.478	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0211	11/08/22	11/09/22	EPA 7196A	

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

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	58.8	0.0597	mg/L dry	1	BFK0309	11/11/22	11/13/22	EPA 6020B	
Magnesium	46.3	0.0597	"	"	"	"	"	"	
Sodium	388	0.0597	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	9.20	0.00100	units	1	BFK0359	11/14/22	11/14/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

BKG02@14.5'
2211076-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.8		%	1	BFK0191	11/07/22	11/08/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.12	0.0100	mmhos/cm	1	BFK0333	11/12/22	11/12/22	EPA 120.1	

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

Date Sampled: **11/03/22 13:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BFK0334	11/12/22	11/12/22	EPA 9045D	

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFK0148 - EPA 3050B

Blank (BFK0148-BLK1)

Prepared: 11/04/22 Analyzed: 11/05/22

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFK0148-BS1)

Prepared: 11/04/22 Analyzed: 11/05/22

Arsenic	45.9	0.200	mg/kg wet	40.0	115	80-120
Barium	47.4	0.400	"	40.0	118	80-120
Cadmium	2.38	0.200	"	2.00	119	80-120
Copper	44.3	0.400	"	40.0	111	80-120
Lead	24.0	0.200	"	20.0	120	80-120
Nickel	46.0	0.400	"	40.0	115	80-120
Selenium	4.72	0.260	"	4.00	118	80-120
Silver	2.08	0.0200	"	2.00	104	80-120
Zinc	46.9	0.400	"	40.0	117	80-120

Duplicate (BFK0148-DUP1)

Source: 2210452-06

Prepared: 11/04/22 Analyzed: 11/05/22

Arsenic	0.955	0.214	mg/kg dry	0.871	9.18	20	QR-03
Barium	90.7	0.428	"	69.7	26.1	20	
Cadmium	0.106	0.214	"	0.108	1.60	20	
Copper	5.77	0.428	"	5.31	8.40	20	
Lead	7.20	0.214	"	7.59	5.29	20	
Nickel	5.56	0.428	"	4.60	18.9	20	
Selenium	ND	0.278	"	ND		20	
Silver	0.0445	0.0214	"	0.0376	16.7	20	
Zinc	17.4	0.428	"	15.2	13.7	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0148 - EPA 3050B

Matrix Spike (BFK0148-MS1)		Source: 2210452-06			Prepared: 11/04/22 Analyzed: 11/05/22					
Arsenic	12.4	0.214	mg/kg dry	42.8	0.871	27.0	75-125			QM-05
Barium	93.7	0.428	"	42.8	69.7	56.1	75-125			QM-05
Cadmium	2.39	0.214	"	2.14	0.108	107	75-125			
Copper	39.8	0.428	"	42.8	5.31	80.7	75-125			
Lead	23.4	0.214	"	21.4	7.59	73.8	75-125			QM-05
Nickel	26.5	0.428	"	42.8	4.60	51.2	75-125			QM-05
Selenium	3.39	0.278	"	4.28	ND	79.2	75-125			
Silver	2.31	0.0214	"	2.14	0.0376	106	75-125			
Zinc	49.5	0.428	"	42.8	15.2	80.2	75-125			

Matrix Spike Dup (BFK0148-MSD1)		Source: 2210452-06			Prepared: 11/04/22 Analyzed: 11/05/22					
Arsenic	13.6	0.214	mg/kg dry	42.8	0.871	29.8	75-125	9.03	25	QM-05
Barium	140	0.428	"	42.8	69.7	165	75-125	39.8	25	QM-05
Cadmium	2.46	0.214	"	2.14	0.108	110	75-125	3.09	25	
Copper	41.5	0.428	"	42.8	5.31	84.6	75-125	4.12	25	
Lead	24.7	0.214	"	21.4	7.59	80.1	75-125	5.63	25	
Nickel	31.1	0.428	"	42.8	4.60	62.0	75-125	16.0	25	QM-05
Selenium	3.41	0.278	"	4.28	ND	79.8	75-125	0.780	25	
Silver	2.37	0.0214	"	2.14	0.0376	109	75-125	2.85	25	
Zinc	48.4	0.428	"	42.8	15.2	77.7	75-125	2.20	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFK0211 - 3060A Mod

Blank (BFK0211-BLK1)

Prepared: 11/08/22 Analyzed: 11/09/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFK0211-BS1)

Prepared: 11/08/22 Analyzed: 11/09/22

Chromium, Hexavalent 22.2 0.30 mg/kg wet 25.0 88.8 80-120

Duplicate (BFK0211-DUP1)

Source: 2211076-01

Prepared: 11/08/22 Analyzed: 11/09/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFK0211-MS1)

Source: 2211076-01

Prepared: 11/08/22 Analyzed: 11/09/22

Chromium, Hexavalent 29.0 0.30 mg/kg dry 27.7 ND 104 75-125

Matrix Spike Dup (BFK0211-MSD1)

Source: 2211076-01

Prepared: 11/08/22 Analyzed: 11/09/22

Chromium, Hexavalent 28.5 0.30 mg/kg dry 27.7 ND 103 75-125 1.74 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

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 BFK0309 - General Preparation

Blank (BFK0309-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 (BFK0309-BS1)

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

Calcium	3.88	0.0500	mg/L wet	5.00	77.7	70-130
Magnesium	4.84	0.0500	"	5.00	96.7	70-130
Sodium	6.34	0.0500	"	5.00	127	70-130

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

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

Summit Scientific

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

Batch BFK0191 - General Preparation

Duplicate (BFK0191-DUP1)		Source: 2210447-04		Prepared: 11/07/22 Analyzed: 11/08/22	
% Solids	86.6		%	86.9	0.412 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

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

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

Batch BFK0333 - General Preparation

Blank (BFK0333-BLK1)

Prepared & Analyzed: 11/12/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0333-BS1)

Prepared & Analyzed: 11/12/22

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BFK0333-DUP1)

Source: 2211076-01

Prepared & Analyzed: 11/12/22

Specific Conductance (EC) 4.58 0.0100 mmhos/cm 4.54 0.767 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

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 BFK0334 - General Preparation

LCS (BFK0334-BS1)

Prepared & Analyzed: 11/12/22

pH	9.00	pH Units	9.18	98.0	95-105
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Duplicate (BFK0334-DUP1)

Source: 2211076-01

Prepared & Analyzed: 11/12/22

pH	8.59	pH Units	8.61	0.233	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/18/22 08:57

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

December 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211101

Enclosed are the results of analyses for samples received by Summit Scientific on 11/07/22 17:04. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS12@5'	2211101-01	Soil	11/07/22 09:48	11/07/22 17:04
SS13@10.5'	2211101-02	Soil	11/07/22 09:55	11/07/22 17:04
SS14@14.5'	2211101-03	Soil	11/07/22 10:00	11/07/22 17:04
SS15@14.5'	2211101-04	Soil	11/07/22 11:09	11/07/22 17:04
SS16@14.5'	2211101-05	Soil	11/07/22 12:41	11/07/22 17:04
SS17@10.5'	2211101-06	Soil	11/07/22 14:00	11/07/22 17:04
SS18@14.5'	2211101-07	Soil	11/07/22 14:05	11/07/22 17:04
SS19@5'	2211101-08	Soil	11/07/22 14:10	11/07/22 17:04
SS20@5'	2211101-09	Soil	11/07/22 14:20	11/07/22 17:04
SS21@10.5'	2211101-10	Soil	11/07/22 14:25	11/07/22 17:04
SS22@14.5'	2211101-11	Soil	11/07/22 14:30	11/07/22 17:04
SS23@14.5'	2211101-12	Soil	11/07/22 14:40	11/07/22 17:04

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.

2211101.1

Summit Scientific

S₂

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: Totems 44-24 Tanks Battery

Sampler Name: Aaron Otilar

Project Number: M

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		✓			
1	SS12@5'	11/7/22	0948	3			X			X				X	X			X						
2	SS13@10.5'		0955																					
3	SS14@14.5'		1000																					
4	SS15@14.5'		1109																					
5	SS16@14.5'		1241																					
6	SS17@10.5'		1400																					
7	SS18@14.5'		1405																					
8	SS19@5'		1410																					
9	SS20@5'		1420																					
10	SS21@10.5'		1425																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: ★: Fluorone, 1-M 2-M
<i>Aaron Otilar</i>	11/7/22 1625	Tasman Lockbox	11/7/22 1625	Same Day	✓ 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
<i>Tasman Lockbox</i>	11/7/22 1704	<i>[Signature]</i>	11/7/22 1704	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	9.8	
				Samples Intact:	Yes No	

2211101-2

Summit Scientific

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915		☆	
1	SS22 @14.5	11/7/22	1430	3			X			X				X	X			X			X	
2	SS23 @14.5	1	1440	1			+			+				+	+		+			+		
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes: ☆: Fluorene, 1-M 2-M
<i>Aaron Otilar</i>	11/7/22 1625	Tasman Lockbox	11/7/22 1625	Same Day <input checked="" type="checkbox"/> 72 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours — Standard —	
<i>Tasman Lockbox</i>	11/7/22 1704	<i>[Signature]</i>	11/7/22 1704	48 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: 9.8	
				Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂2/2
Sample Receipt Checklist

S2 Work Order# 2211701

Client: Profrasmem Client Project ID: Totems 44-24 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) 9.8Thermometer # 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
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?	✓			Same day
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 ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	

Additional Comments (if any):

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

Custodian Printed Name
11-7-22
Date/Time



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS12@5'
2211101-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0441	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.0	88.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS12@5'
2211101-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0161	48.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.71	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.350	0.200	"	"	"	"	"	"	
Lead	11.6	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 09:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.5		%	1	BFK0514	11/18/22	11/19/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS13@10.5'
2211101-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0436	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.7	85.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS13@10.5'
2211101-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0208	62.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.35	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	11.1	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 09:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS14@14.5'
2211101-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0438	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.1	88.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS14@14.5'
2211101-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0158	47.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	44.8	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.717	0.200	"	"	"	"	"	"	
Lead	17.3	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.2		%	1	BFK0514	11/18/22	11/19/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS15@14.5'
2211101-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0405	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0450	112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.7	93.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS15@14.5'
2211101-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0194	58.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Arsenic	24.7	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.460	0.200	"	"	"	"	"	"	
Lead	8.22	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 11:09**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
% Solids	82.8		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS16@14.5'
2211101-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0406	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0438	109 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS16@14.5'
2211101-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0198	59.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0213	63.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	9.33	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.235	0.200	"	"	"	"	"	"	
Lead	6.55	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS17@10.5'
2211101-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0440	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS17@10.5'
2211101-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0213	63.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0208	62.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.21	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	8.62	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS18@14.5'
2211101-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/07/22	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: **11/07/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0450	113 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.7	93.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS18@14.5'
2211101-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/08/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0233	69.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0240	72.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.57	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.215	0.200	"	"	"	"	"	"	
Lead	9.77	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS19@5'
2211101-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/08/22	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: **11/07/22 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0451	113 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/07/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.5	92.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS19@5'
2211101-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0187	56.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.29	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.377	0.200	"	"	"	"	"	"	
Lead	12.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.6		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS20@5'
2211101-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/08/22	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: **11/07/22 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0424	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0439	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.4	91.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS20@5'
2211101-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0156	46.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0153	45.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	16.1	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.408	0.200	"	"	"	"	"	"	
Lead	13.1	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS21@10.5'
2211101-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/08/22	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: **11/07/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0406	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.2	97.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS21@10.5'
2211101-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0209	62.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.58	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS22@14.5'
2211101-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/08/22	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: **11/07/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0410	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	112 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.6	93.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS22@14.5'
2211101-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.28	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	7.73	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS23@14.5'
2211101-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0186	11/07/22	11/08/22	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: **11/07/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0443	111 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0187	11/07/22	11/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	12.0	95.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

SS23@14.5'
2211101-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0200	11/08/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0184	55.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0213	63.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.14	0.200	mg/kg dry	1	BFK0525	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	6.65	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/07/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5		%	1	BFK0514	11/18/22	11/19/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

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 BFK0186 - EPA 5030 Soil MS

Blank (BFK0186-BLK1)

Prepared: 11/07/22 Analyzed: 11/08/22

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	0.0388		"	0.0400		97.0	50-150			
Surrogate: Toluene-d8	0.0453		"	0.0400		113	50-150			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.0	50-150			

LCS (BFK0186-BS1)

Prepared: 11/07/22 Analyzed: 11/08/22

Benzene	0.0766	0.0020	mg/kg	0.0750		102	70-130			
Toluene	0.0730	0.0050	"	0.0750		97.3	70-130			
Ethylbenzene	0.0748	0.0050	"	0.0750		99.7	70-130			
m,p-Xylene	0.150	0.010	"	0.150		100	70-130			
o-Xylene	0.0776	0.0050	"	0.0750		103	70-130			
1,2,4-Trimethylbenzene	0.0844	0.0050	"	0.0750		113	70-130			
1,3,5-Trimethylbenzene	0.0830	0.0050	"	0.0750		111	70-130			
Naphthalene	0.0734	0.0038	"	0.0750		97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0326		"	0.0400		81.5	50-150			
Surrogate: Toluene-d8	0.0443		"	0.0400		111	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

Matrix Spike (BFK0186-MS1)

Source: 2211101-01

Prepared: 11/07/22 Analyzed: 11/08/22

Benzene	0.0749	0.0020	mg/kg	0.0750	ND	99.9	70-130			
Toluene	0.0725	0.0050	"	0.0750	ND	96.6	70-130			
Ethylbenzene	0.0726	0.0050	"	0.0750	ND	96.8	70-130			
m,p-Xylene	0.150	0.010	"	0.150	ND	100	70-130			
o-Xylene	0.0765	0.0050	"	0.0750	ND	102	70-130			
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.0750	ND	114	70-130			
1,3,5-Trimethylbenzene	0.0814	0.0050	"	0.0750	ND	109	70-130			
Naphthalene	0.0709	0.0038	"	0.0750	ND	94.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0364		"	0.0400		91.0	50-150			
Surrogate: Toluene-d8	0.0437		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

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 BFK0186 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0186-MSD1)		Source: 2211101-01			Prepared: 11/07/22 Analyzed: 11/08/22					
Benzene	0.0747	0.0020	mg/kg	0.0750	ND	99.6	70-130	0.241	30	
Toluene	0.0758	0.0050	"	0.0750	ND	101	70-130	4.41	30	
Ethylbenzene	0.0743	0.0050	"	0.0750	ND	99.1	70-130	2.33	30	
m,p-Xylene	0.154	0.010	"	0.150	ND	103	70-130	2.60	30	
o-Xylene	0.0790	0.0050	"	0.0750	ND	105	70-130	3.20	30	
1,2,4-Trimethylbenzene	0.0856	0.0050	"	0.0750	ND	114	70-130	0.351	30	
1,3,5-Trimethylbenzene	0.0832	0.0050	"	0.0750	ND	111	70-130	2.22	30	
Naphthalene	0.0590	0.0038	"	0.0750	ND	78.6	70-130	18.3	30	
Surrogate: 1,2-Dichloroethane-d4		0.0371	"	0.0400		92.7	50-150			
Surrogate: Toluene-d8		0.0469	"	0.0400		117	50-150			
Surrogate: 4-Bromofluorobenzene		0.0396	"	0.0400		98.9	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0187 - EPA 3550A

Blank (BFK0187-BLK1)

Prepared & Analyzed: 11/07/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.6		"	12.5		93.2	30-150			

LCS (BFK0187-BS1)

Prepared & Analyzed: 11/07/22

C10-C28 (DRO)	368	50	mg/kg	500		73.6	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.4	30-150			

Matrix Spike (BFK0187-MS1)

Source: 2211098-01

Prepared: 11/07/22 Analyzed: 11/08/22

C10-C28 (DRO)	488	50	mg/kg	500	10.1	95.5	70-130			
Surrogate: o-Terphenyl	12.7		"	12.5		102	30-150			

Matrix Spike Dup (BFK0187-MSD1)

Source: 2211098-01

Prepared: 11/07/22 Analyzed: 11/08/22

C10-C28 (DRO)	482	50	mg/kg	500	10.1	94.4	70-130	1.15	20	
Surrogate: o-Terphenyl	12.7		"	12.5		102	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0200 - EPA 5030 Soil MS

Blank (BFK0200-BLK1)

Prepared & Analyzed: 11/08/22

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	0.0306		"	0.0333		91.9	40-150			
Surrogate: Fluoranthene-d10	0.0353		"	0.0333		106	40-150			

LCS (BFK0200-BS1)

Prepared & Analyzed: 11/08/22

Acenaphthene	0.0309	0.00500	mg/kg	0.0333		92.6	31-137			
Anthracene	0.0303	0.00500	"	0.0333		90.8	30-120			
Benzo (a) anthracene	0.0311	0.00500	"	0.0333		93.3	30-120			
Benzo (a) pyrene	0.0306	0.00500	"	0.0333		91.9	30-120			
Benzo (b) fluoranthene	0.0306	0.00500	"	0.0333		91.9	30-120			
Benzo (k) fluoranthene	0.0307	0.00500	"	0.0333		92.1	30-120			
Chrysene	0.0317	0.00500	"	0.0333		95.1	30-120			
Dibenz (a,h) anthracene	0.0289	0.00500	"	0.0333		86.7	30-120			
Fluoranthene	0.0284	0.00500	"	0.0333		85.1	30-120			
Fluorene	0.0308	0.00500	"	0.0333		92.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0219	0.00500	"	0.0333		65.7	30-120			
Pyrene	0.0275	0.00500	"	0.0333		82.6	35-142			
1-Methylnaphthalene	0.0217	0.00500	"	0.0333		65.0	35-142			
2-Methylnaphthalene	0.0294	0.00500	"	0.0333		88.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0247		"	0.0333		74.2	40-150			
Surrogate: Fluoranthene-d10	0.0301		"	0.0333		90.3	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0200 - EPA 5030 Soil MS

Matrix Spike (BKF0200-MS1)

Source: 2211101-01

Prepared & Analyzed: 11/08/22

Acenaphthene	0.0156	0.00500	mg/kg	0.0333	ND	46.8	31-137				
Anthracene	0.0147	0.00500	"	0.0333	ND	44.2	30-120				
Benzo (a) anthracene	0.0143	0.00500	"	0.0333	ND	42.9	30-120				
Benzo (a) pyrene	0.0166	0.00500	"	0.0333	ND	49.9	30-120				
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120				
Benzo (k) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Chrysene	0.0146	0.00500	"	0.0333	ND	43.9	30-120				
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.1	30-120				
Fluoranthene	0.0134	0.00500	"	0.0333	ND	40.1	30-120				
Fluorene	0.0154	0.00500	"	0.0333	ND	46.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0145	0.00500	"	0.0333	ND	43.4	30-120				
Pyrene	0.0204	0.00500	"	0.0333	ND	61.2	35-142				
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130				
2-Methylnaphthalene	0.0156	0.00500	"	0.0333	ND	46.9	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0157		"	0.0333		47.2	40-150				
Surrogate: Fluoranthene-d10	0.0140		"	0.0333		42.0	40-150				

Matrix Spike Dup (BKF0200-MSD1)

Source: 2211101-01

Prepared & Analyzed: 11/08/22

Acenaphthene	0.0182	0.00500	mg/kg	0.0333	ND	54.5	31-137	15.1	30		
Anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	12.2	30		
Benzo (a) anthracene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	12.3	30		
Benzo (a) pyrene	0.0147	0.00500	"	0.0333	ND	44.1	30-120	12.2	30		
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	3.42	30		
Benzo (k) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	2.25	30		
Chrysene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	12.2	30		
Dibenz (a,h) anthracene	0.0151	0.00500	"	0.0333	ND	45.2	30-120	8.29	30		
Fluoranthene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	9.00	30		
Fluorene	0.0173	0.00500	"	0.0333	ND	51.8	30-120	11.1	30		
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120	10.3	30		
Pyrene	0.0179	0.00500	"	0.0333	ND	53.8	35-142	12.9	30		
1-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.1	15-130	10.8	50		
2-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	57.9	15-130	21.0	50		
Surrogate: 2-Methylnaphthalene-d10	0.0185		"	0.0333		55.6	40-150				
Surrogate: Fluoranthene-d10	0.0162		"	0.0333		48.7	40-150				

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0525 - EPA 3050B

Blank (BFK0525-BLK1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	ND	0.200	mg/kg wet
Cadmium	ND	0.200	"
Lead	ND	0.200	"

LCS (BFK0525-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	42.8	0.200	mg/kg wet	40.0	107	80-120
Cadmium	1.70	0.200	"	2.00	84.8	80-120
Lead	21.6	0.200	"	20.0	108	80-120

Duplicate (BFK0525-DUP1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	11.1	0.200	mg/kg dry	10.8	2.38	20
Cadmium	0.341	0.200	"	0.339	0.557	20
Lead	12.0	0.200	"	12.6	4.68	20

Matrix Spike (BFK0525-MS1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	58.0	0.200	mg/kg dry	47.4	10.8	99.6	75-125
Cadmium	2.31	0.200	"	2.37	0.339	83.1	75-125
Lead	32.5	0.200	"	23.7	12.6	83.8	75-125

Matrix Spike Dup (BFK0525-MSD1)

Source: 2211025-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	54.7	0.200	mg/kg dry	47.4	10.8	92.6	75-125	5.89	25
Cadmium	2.31	0.200	"	2.37	0.339	83.2	75-125	0.103	25
Lead	31.8	0.200	"	23.7	12.6	81.0	75-125	2.12	25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

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

Summit Scientific

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

Batch BFK0514 - General Preparation

Duplicate (BFK0514-DUP1)		Source: 2211025-01		Prepared: 11/18/22 Analyzed: 11/19/22	
% Solids	84.7		%	84.4	0.419 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:15

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

December 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211135

Enclosed are the results of analyses for samples received by Summit Scientific on 11/08/22 17:16. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS24@14.5	2211135-01	Soil	11/08/22 10:42	11/08/22 17:16
SS25@14.5	2211135-02	Soil	11/08/22 13:35	11/08/22 17:16

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

221135

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

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: Totems 44 - 24 Tanks Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	SS24p14.5	11/8/22	1042	3			X			X				X	X			X			X	
2	SS25e14.5	11/8/22	1335	3			X			X				X	X			X			X	
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: ★: Fluorene, 1-M, 2-M
<i>Aaron Otilar</i>	11/8/22 1600	<i>Tasman Lockbox</i>	11/8/22 1600	Same Day	<input checked="" type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	<input type="checkbox"/> Standard	
<i>Tasman LockBox</i>	11/8/22 1714	<i>[Signature]</i>	11/8/22 1714	48 hours	<input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:		
				Samples Intact:		
				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

S₂

Sample Receipt Checklist

S2 Work Order# 221135Client: Pacfasman Client Project ID: Totems 44-24 Tank Battery

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

	-			
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.8Thermometer # 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"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-8-22



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

SS24@14.5
2211135-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0220	11/08/22	11/09/22	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: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0418	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0221	"	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.8	86.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

SS24@14.5
2211135-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0226	11/09/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0153	46.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0207	62.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.43	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	9.52	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/08/22 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.1		%	1	BFK0516	11/18/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

SS25@14.5
2211135-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0220	11/08/22	11/09/22	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: **11/08/22 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0440	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0221	"	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.4	83.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

SS25@14.5
2211135-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0226	11/09/22	11/09/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	57.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.14	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.216	0.200	"	"	"	"	"	"	
Lead	6.30	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/08/22 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.5		%	1	BFK0516	11/18/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

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 BFK0220 - EPA 5030 Soil MS

Blank (BFK0220-BLK1)

Prepared: 11/08/22 Analyzed: 11/09/22

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	0.0400		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.5	50-150			
Surrogate: 4-Bromofluorobenzene	0.0447		"	0.0400		112	50-150			

LCS (BFK0220-BS1)

Prepared: 11/08/22 Analyzed: 11/09/22

Benzene	0.0967	0.0020	mg/kg	0.100		96.7	70-130			
Toluene	0.0972	0.0050	"	0.100		97.2	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.235	0.010	"	0.200		118	70-130			
o-Xylene	0.116	0.0050	"	0.100		116	70-130			
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.100		118	70-130			
1,3,5-Trimethylbenzene	0.128	0.0050	"	0.100		128	70-130			
Naphthalene	0.113	0.0038	"	0.100		113	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		98.9	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

Matrix Spike (BFK0220-MS1)

Source: 2211126-01

Prepared: 11/08/22 Analyzed: 11/09/22

Benzene	0.0961	0.0020	mg/kg	0.100	ND	96.1	70-130			
Toluene	0.0964	0.0050	"	0.100	ND	96.4	70-130			
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130			
m,p-Xylene	0.237	0.010	"	0.200	ND	119	70-130			
o-Xylene	0.116	0.0050	"	0.100	ND	116	70-130			
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.100	ND	125	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.100	ND	127	70-130			
Naphthalene	0.123	0.0038	"	0.100	ND	123	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.4	50-150			
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

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 BFK0220 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0220-MSD1)	Source: 2211126-01			Prepared: 11/08/22 Analyzed: 11/09/22						
Benzene	0.0956	0.0020	mg/kg	0.100	ND	95.6	70-130	0.501	30	
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	4.41	30	
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	0.504	30	
m,p-Xylene	0.238	0.010	"	0.200	ND	119	70-130	0.341	30	
o-Xylene	0.118	0.0050	"	0.100	ND	118	70-130	1.03	30	
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	5.06	30	
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130	2.15	30	
Naphthalene	0.121	0.0038	"	0.100	ND	121	70-130	1.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0221 - EPA 3550A

Blank (BFK0221-BLK1)

Prepared: 11/08/22 Analyzed: 11/09/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.8		"	12.5		94.5	30-150			

LCS (BFK0221-BS1)

Prepared: 11/08/22 Analyzed: 11/09/22

C10-C28 (DRO)	501	50	mg/kg	500		100	70-130			
Surrogate: o-Terphenyl	11.2		"	12.5		89.4	30-150			

Matrix Spike (BFK0221-MS1)

Source: 2211126-01

Prepared: 11/08/22 Analyzed: 11/09/22

C10-C28 (DRO)	525	50	mg/kg	500	23.1	100	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		91.4	30-150			

Matrix Spike Dup (BFK0221-MSD1)

Source: 2211126-01

Prepared: 11/08/22 Analyzed: 11/09/22

C10-C28 (DRO)	528	50	mg/kg	500	23.1	101	70-130	0.537	20	
Surrogate: o-Terphenyl	11.7		"	12.5		93.5	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0226 - EPA 5030 Soil MS

Blank (BFK0226-BLK1)

Prepared & Analyzed: 11/09/22

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	0.0234		"	0.0333		70.2	40-150			
Surrogate: Fluoranthene-d10	0.0338		"	0.0333		101	40-150			

LCS (BFK0226-BS1)

Prepared & Analyzed: 11/09/22

Acenaphthene	0.0321	0.00500	mg/kg	0.0333		96.2	31-137			
Anthracene	0.0302	0.00500	"	0.0333		90.7	30-120			
Benzo (a) anthracene	0.0299	0.00500	"	0.0333		89.6	30-120			
Benzo (a) pyrene	0.0339	0.00500	"	0.0333		102	30-120			
Benzo (b) fluoranthene	0.0380	0.00500	"	0.0333		114	30-120			
Benzo (k) fluoranthene	0.0374	0.00500	"	0.0333		112	30-120			
Chrysene	0.0345	0.00500	"	0.0333		103	30-120			
Dibenz (a,h) anthracene	0.0304	0.00500	"	0.0333		91.2	30-120			
Fluoranthene	0.0311	0.00500	"	0.0333		93.2	30-120			
Fluorene	0.0301	0.00500	"	0.0333		90.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0252	0.00500	"	0.0333		75.5	30-120			
Pyrene	0.0320	0.00500	"	0.0333		96.1	35-142			
1-Methylnaphthalene	0.0309	0.00500	"	0.0333		92.7	35-142			
2-Methylnaphthalene	0.0300	0.00500	"	0.0333		89.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.8	40-150			
Surrogate: Fluoranthene-d10	0.0290		"	0.0333		86.9	40-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0226 - EPA 5030 Soil MS

Matrix Spike (BKF0226-MS1)

Source: 2211126-01

Prepared & Analyzed: 11/09/22

Acenaphthene	0.0251	0.00500	mg/kg	0.0333	ND	75.2	31-137		
Anthracene	0.0233	0.00500	"	0.0333	ND	70.0	30-120		
Benzo (a) anthracene	0.0223	0.00500	"	0.0333	ND	66.8	30-120		
Benzo (a) pyrene	0.0289	0.00500	"	0.0333	ND	86.8	30-120		
Benzo (b) fluoranthene	0.0351	0.00500	"	0.0333	ND	105	30-120		
Benzo (k) fluoranthene	0.0301	0.00500	"	0.0333	ND	90.2	30-120		
Chrysene	0.0283	0.00500	"	0.0333	ND	84.8	30-120		
Dibenz (a,h) anthracene	0.0237	0.00500	"	0.0333	ND	71.2	30-120		
Fluoranthene	0.0240	0.00500	"	0.0333	ND	71.9	30-120		
Fluorene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Indeno (1,2,3-cd) pyrene	0.0174	0.00500	"	0.0333	ND	52.2	30-120		
Pyrene	0.0294	0.00500	"	0.0333	0.0170	36.9	35-142		
1-Methylnaphthalene	0.0229	0.00500	"	0.0333	ND	68.6	15-130		
2-Methylnaphthalene	0.0279	0.00500	"	0.0333	ND	83.7	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.3	40-150		
Surrogate: Fluoranthene-d10	0.0218		"	0.0333		65.3	40-150		

Matrix Spike Dup (BKF0226-MSD1)

Source: 2211126-01

Prepared & Analyzed: 11/09/22

Acenaphthene	0.0256	0.00500	mg/kg	0.0333	ND	76.9	31-137	2.18	30
Anthracene	0.0257	0.00500	"	0.0333	ND	77.0	30-120	9.47	30
Benzo (a) anthracene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	1.66	30
Benzo (a) pyrene	0.0307	0.00500	"	0.0333	ND	92.0	30-120	5.72	30
Benzo (b) fluoranthene	0.0357	0.00500	"	0.0333	ND	107	30-120	1.64	30
Benzo (k) fluoranthene	0.0325	0.00500	"	0.0333	ND	97.5	30-120	7.78	30
Chrysene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	14.4	30
Dibenz (a,h) anthracene	0.0217	0.00500	"	0.0333	ND	65.1	30-120	8.98	30
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	13.9	30
Fluorene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	10.7	30
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333	ND	55.4	30-120	5.83	30
Pyrene	0.0309	0.00500	"	0.0333	0.0170	41.6	35-142	5.17	30
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.9	15-130	7.10	50
2-Methylnaphthalene	0.0231	0.00500	"	0.0333	ND	69.4	15-130	18.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.8	40-150		
Surrogate: Fluoranthene-d10	0.0196		"	0.0333		58.8	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0526 - EPA 3050B

Blank (BFK0526-BLK1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	ND	0.200	mg/kg wet
Cadmium	ND	0.200	"
Lead	ND	0.200	"

LCS (BFK0526-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	46.7	0.200	mg/kg wet	40.0	117	80-120
Cadmium	2.17	0.200	"	2.00	108	80-120
Lead	21.1	0.200	"	20.0	105	80-120

Duplicate (BFK0526-DUP1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	4.65	0.200	mg/kg dry	3.20	37.1	20	QR-03
Cadmium	0.139	0.200	"	0.146	4.45	20	
Lead	9.36	0.200	"	7.54	21.5	20	QR-03

Matrix Spike (BFK0526-MS1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	63.2	0.200	mg/kg dry	46.2	3.20	130	75-125	QM-05
Cadmium	2.55	0.200	"	2.31	0.146	104	75-125	
Lead	33.5	0.200	"	23.1	7.54	112	75-125	

Matrix Spike Dup (BFK0526-MSD1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	62.1	0.200	mg/kg dry	46.2	3.20	127	75-125	1.80	25	QM-05
Cadmium	2.63	0.200	"	2.31	0.146	108	75-125	3.11	25	
Lead	31.0	0.200	"	23.1	7.54	101	75-125	7.86	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

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 BFK0516 - General Preparation

Duplicate (BFK0516-DUP1)		Source: 2210371-01		Prepared: 11/18/22 Analyzed: 11/21/22	
% Solids	98.7		%	99.0	0.281 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:20

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

December 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211165

Enclosed are the results of analyses for samples received by Summit Scientific on 11/09/22 17:15. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS26@5'	2211165-01	Soil	11/09/22 11:30	11/09/22 17:15
SS27@10.5'	2211165-02	Soil	11/09/22 11:35	11/09/22 17:15
SS28@14.5'	2211165-03	Soil	11/09/22 11:40	11/09/22 17:15
SS29@5'	2211165-04	Soil	11/09/22 11:50	11/09/22 17:15
SS30@10.5'	2211165-05	Soil	11/09/22 11:55	11/09/22 17:15
SS31@14.5'	2211165-06	Soil	11/09/22 12:00	11/09/22 17:15

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

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

2211/65

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

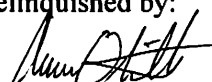
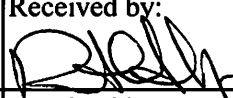
Phone: 303-487-1228

Project Name: Tolens 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	☆		
1	SS26@5'	11/9/22	1130	3			X			X				X	X			X			X	
2	SS27@10.5'		1135																			
3	SS28@14.6'		1140																			
4	SS29@5'		1160																			
5	SS30@10.5'		1155																			
6	SS31@14.5'		1200																			
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 11/9/22 1600	Received by: Tasman Lockbox	Date/Time: 11/9/22 1600	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 8.5 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: A: Fluorene, 1-M, 2-M
Relinquished by: Tasman Lockbox	Date/Time: 11/9/22 1715	Received by: 	Date/Time: 11/9/22 1715		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2211165Client: Rx/Carman

Client Project ID:

Totems 44-24 Tank Battery

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

Airbill #:

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐

Temp (°C)

8.5

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11.9.22



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS26@5'
2211165-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0427	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.39	75.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS26@5'
2211165-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.29	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.326	0.200	"	"	"	"	"	"	
Lead	14.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS27@10.5'
2211165-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0434	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.38	67.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS27@10.5'
2211165-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0221	66.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.48	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	9.16	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS28@14.5'
2211165-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0439	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.00	72.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS28@14.5'
2211165-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	66.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0224	67.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.28	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	8.35	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.3		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS29@5'
2211165-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0443	111 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0416	104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.22	73.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS29@5'
2211165-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0233	69.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0233	69.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.14	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.253	0.200	"	"	"	"	"	"	
Lead	12.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.3		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS30@10.5'
2211165-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0411	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0431	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.5	84.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS30@10.5'
2211165-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0199	59.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.49	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	8.70	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS31@14.5'
2211165-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0256	11/09/22	11/09/22	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: **11/09/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0381	95.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0440	110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0422	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0255	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.4	91.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

SS31@14.5'
2211165-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0258	11/10/22	11/11/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0238	71.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0252	75.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.22	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.249	0.200	"	"	"	"	"	"	
Lead	10.1	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/09/22 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BFK0537	11/20/22	11/21/22	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

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 BFK0256 - EPA 5030 Soil MS

Blank (BFK0256-BLK1)

Prepared: 11/09/22 Analyzed: 11/10/22

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	0.0262		"	0.0400		65.6	50-150			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0371		"	0.0400		92.8	50-150			

LCS (BFK0256-BS1)

Prepared: 11/09/22 Analyzed: 11/10/22

Benzene	0.0881	0.0020	mg/kg	0.100		88.1	70-130			
Toluene	0.0776	0.0050	"	0.100		77.6	70-130			
Ethylbenzene	0.0961	0.0050	"	0.100		96.1	70-130			
m,p-Xylene	0.193	0.010	"	0.200		96.6	70-130			
o-Xylene	0.0881	0.0050	"	0.100		88.1	70-130			
1,2,4-Trimethylbenzene	0.0910	0.0050	"	0.100		91.0	70-130			
1,3,5-Trimethylbenzene	0.0937	0.0050	"	0.100		93.7	70-130			
Naphthalene	0.112	0.0038	"	0.100		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0280		"	0.0400		70.1	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.1	50-150			

Matrix Spike (BFK0256-MS1)

Source: 2211151-01

Prepared: 11/09/22 Analyzed: 11/10/22

Benzene	0.0744	0.0020	mg/kg	0.100	ND	74.4	70-130			
Toluene	0.0708	0.0050	"	0.100	ND	70.8	70-130			
Ethylbenzene	0.0744	0.0050	"	0.100	ND	74.4	70-130			
m,p-Xylene	0.148	0.010	"	0.200	ND	74.0	70-130			
o-Xylene	0.0764	0.0050	"	0.100	ND	76.4	70-130			
1,2,4-Trimethylbenzene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
1,3,5-Trimethylbenzene	0.0812	0.0050	"	0.100	ND	81.2	70-130			
Naphthalene	0.118	0.0038	"	0.100	ND	118	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0355		"	0.0400		88.6	50-150			
Surrogate: Toluene-d8	0.0439		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

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 BFK0256 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0256-MSD1)	Source: 2211151-01			Prepared: 11/09/22 Analyzed: 11/10/22						
Benzene	0.0777	0.0020	mg/kg	0.100	ND	77.7	70-130	4.30	30	
Toluene	0.0751	0.0050	"	0.100	ND	75.1	70-130	5.84	30	
Ethylbenzene	0.0737	0.0050	"	0.100	ND	73.7	70-130	0.972	30	
m,p-Xylene	0.147	0.010	"	0.200	ND	73.7	70-130	0.386	30	
o-Xylene	0.0764	0.0050	"	0.100	ND	76.4	70-130	0.00	30	
1,2,4-Trimethylbenzene	0.0844	0.0050	"	0.100	ND	84.4	70-130	1.87	30	
1,3,5-Trimethylbenzene	0.0818	0.0050	"	0.100	ND	81.8	70-130	0.773	30	
Naphthalene	0.112	0.0038	"	0.100	ND	112	70-130	4.90	30	
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	50-150			
Surrogate: Toluene-d8	0.0448		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		103	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0255 - EPA 3550A

Blank (BFK0255-BLK1)

Prepared: 11/09/22 Analyzed: 11/10/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.2		"	12.5		89.9	30-150			

LCS (BFK0255-BS1)

Prepared: 11/09/22 Analyzed: 11/10/22

C10-C28 (DRO)	539	50	mg/kg	500		108	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		91.4	30-150			

Matrix Spike (BFK0255-MS1)

Source: 2211151-01

Prepared: 11/09/22 Analyzed: 11/10/22

C10-C28 (DRO)	517	50	mg/kg	500	20.2	99.3	70-130			
Surrogate: o-Terphenyl	10.9		"	12.5		86.8	30-150			

Matrix Spike Dup (BFK0255-MSD1)

Source: 2211151-01

Prepared: 11/09/22 Analyzed: 11/10/22

C10-C28 (DRO)	518	50	mg/kg	500	20.2	99.5	70-130	0.192	20	
Surrogate: o-Terphenyl	10.8		"	12.5		86.6	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0258 - EPA 5030 Soil MS

Blank (BFK0258-BLK1)

Prepared & Analyzed: 11/10/22

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	0.0310		"	0.0333		93.1		40-150			
Surrogate: Fluoranthene-d10	0.0324		"	0.0333		97.1		40-150			

LCS (BFK0258-BS1)

Prepared & Analyzed: 11/10/22

Acenaphthene	0.0310	0.00500	mg/kg	0.0333		93.1		31-137			
Anthracene	0.0299	0.00500	"	0.0333		89.7		30-120			
Benzo (a) anthracene	0.0308	0.00500	"	0.0333		92.3		30-120			
Benzo (a) pyrene	0.0297	0.00500	"	0.0333		89.2		30-120			
Benzo (b) fluoranthene	0.0302	0.00500	"	0.0333		90.7		30-120			
Benzo (k) fluoranthene	0.0307	0.00500	"	0.0333		92.1		30-120			
Chrysene	0.0315	0.00500	"	0.0333		94.4		30-120			
Dibenz (a,h) anthracene	0.0266	0.00500	"	0.0333		79.9		30-120			
Fluoranthene	0.0297	0.00500	"	0.0333		89.2		30-120			
Fluorene	0.0316	0.00500	"	0.0333		94.7		30-120			
Indeno (1,2,3-cd) pyrene	0.0274	0.00500	"	0.0333		82.1		30-120			
Pyrene	0.0303	0.00500	"	0.0333		91.0		35-142			
1-Methylnaphthalene	0.0335	0.00500	"	0.0333		100		35-142			
2-Methylnaphthalene	0.0290	0.00500	"	0.0333		87.1		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0302		"	0.0333		90.6		40-150			
Surrogate: Fluoranthene-d10	0.0317		"	0.0333		95.0		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0258 - EPA 5030 Soil MS

Matrix Spike (BKF0258-MS1)

Source: 2211151-01

Prepared & Analyzed: 11/10/22

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	57.0	31-137			
Anthracene	0.0188	0.00500	"	0.0333	ND	56.5	30-120			
Benzo (a) anthracene	0.0191	0.00500	"	0.0333	ND	57.4	30-120			
Benzo (a) pyrene	0.0184	0.00500	"	0.0333	ND	55.3	30-120			
Benzo (b) fluoranthene	0.0188	0.00500	"	0.0333	ND	56.3	30-120			
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120			
Chrysene	0.0195	0.00500	"	0.0333	ND	58.5	30-120			
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120			
Fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120			
Fluorene	0.0179	0.00500	"	0.0333	ND	53.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.5	30-120			
Pyrene	0.0180	0.00500	"	0.0333	ND	53.9	35-142			
1-Methylnaphthalene	0.0229	0.00500	"	0.0333	ND	68.7	15-130			
2-Methylnaphthalene	0.0209	0.00500	"	0.0333	ND	62.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.3	40-150			
Surrogate: Fluoranthene-d10	0.0190		"	0.0333		57.0	40-150			

Matrix Spike Dup (BKF0258-MSD1)

Source: 2211151-01

Prepared & Analyzed: 11/10/22

Acenaphthene	0.0250	0.00500	mg/kg	0.0333	ND	75.1	31-137	27.3	30	
Anthracene	0.0249	0.00500	"	0.0333	ND	74.6	30-120	27.5	30	
Benzo (a) anthracene	0.0255	0.00500	"	0.0333	ND	76.4	30-120	28.4	30	
Benzo (a) pyrene	0.0250	0.00500	"	0.0333	ND	75.0	30-120	30.3	30	QR-02
Benzo (b) fluoranthene	0.0257	0.00500	"	0.0333	ND	77.2	30-120	31.3	30	QR-02
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	31.0	30	QR-02
Chrysene	0.0259	0.00500	"	0.0333	ND	77.6	30-120	28.1	30	
Dibenz (a,h) anthracene	0.0236	0.00500	"	0.0333	ND	70.8	30-120	33.4	30	QR-02
Fluoranthene	0.0268	0.00500	"	0.0333	ND	80.5	30-120	38.6	30	QR-02
Fluorene	0.0249	0.00500	"	0.0333	ND	74.6	30-120	32.4	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0244	0.00500	"	0.0333	ND	73.1	30-120	27.2	30	
Pyrene	0.0245	0.00500	"	0.0333	ND	73.5	35-142	30.8	30	QR-02
1-Methylnaphthalene	0.0325	0.00500	"	0.0333	ND	97.6	15-130	34.8	50	
2-Methylnaphthalene	0.0275	0.00500	"	0.0333	ND	82.5	15-130	27.2	50	
Surrogate: 2-Methylnaphthalene-d10	0.0277		"	0.0333		83.1	40-150			
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.1	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0526 - EPA 3050B

Blank (BFK0526-BLK1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	ND	0.200	mg/kg wet
Cadmium	ND	0.200	"
Lead	ND	0.200	"

LCS (BFK0526-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	46.7	0.200	mg/kg wet	40.0	117	80-120
Cadmium	2.17	0.200	"	2.00	108	80-120
Lead	21.1	0.200	"	20.0	105	80-120

Duplicate (BFK0526-DUP1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	4.65	0.200	mg/kg dry	3.20	37.1	20	QR-03
Cadmium	0.139	0.200	"	0.146	4.45	20	
Lead	9.36	0.200	"	7.54	21.5	20	QR-03

Matrix Spike (BFK0526-MS1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	63.2	0.200	mg/kg dry	46.2	3.20	130	75-125	QM-05
Cadmium	2.55	0.200	"	2.31	0.146	104	75-125	
Lead	33.5	0.200	"	23.1	7.54	112	75-125	

Matrix Spike Dup (BFK0526-MSD1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	62.1	0.200	mg/kg dry	46.2	3.20	127	75-125	1.80	25	QM-05
Cadmium	2.63	0.200	"	2.31	0.146	108	75-125	3.11	25	
Lead	31.0	0.200	"	23.1	7.54	101	75-125	7.86	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

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 BFK0537 - General Preparation

Duplicate (BFK0537-DUP1)		Source: 2211165-01		Prepared: 11/20/22 Analyzed: 11/21/22	
% Solids	83.0		%	83.7	0.771 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:23

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

November 16, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211257

Enclosed are the results of analyses for samples received by Summit Scientific on 11/14/22 17:16. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS32@5'	2211257-01	Soil	11/14/22 10:00	11/14/22 17:16
SS33@10.5'	2211257-02	Soil	11/14/22 10:05	11/14/22 17:16
SS34@14.5'	2211257-03	Soil	11/14/22 10:10	11/14/22 17:16

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.

2211257

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	5532@5'	11/14/22	1000	3			X			X				X	X			X			X	
2	5533@10.5'	1	1005	1			1			1				1	1			1		1		
3	5534@14.5'	1	1010	1			1			1				1	1			1		1		
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: ★: Fluorene, 1-M, 2-M
<i>Aaron Otilar</i>	11/14/22 1050	Tasman Lockbox	11/14/22 1050	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
<i>Tasman Lockbox</i>	11/14/22 1716	<i>[Signature]</i>	11/14/22 1716	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	
					4.9	
				Samples Intact:	(Yes) No	

S₂

Sample Receipt Checklist

S2 Work Order#

2211 257

Client: DOC/TrasmenClient Project ID: Totems 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

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

Matrix (Check all that apply)

Air ☐Soil/Solid ☐Water ☐Other ☐

Temp (°C)

4.9

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"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-14-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS32@5'
2211257-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS32@5'
2211257-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.9 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS33@10.5'
2211257-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		83.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS33@10.5'
2211257-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.5 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS34@14.5'
2211257-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		79.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

SS34@14.5'
2211257-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		73.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.3 %	40-150		"	"	"	"	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

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 BFK0379 - EPA 5030 Soil MS

Blank (BFK0379-BLK1)

Prepared: 11/14/22 Analyzed: 11/15/22

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	0.0413		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150			

LCS (BFK0379-BS1)

Prepared: 11/14/22 Analyzed: 11/15/22

Benzene	0.0868	0.0020	mg/kg	0.100		86.8	70-130			
Toluene	0.115	0.0050	"	0.100		115	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.231	0.010	"	0.200		115	70-130			
o-Xylene	0.106	0.0050	"	0.100		106	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.103	0.0038	"	0.100		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	50-150			

Matrix Spike (BFK0379-MS1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

Benzene	0.0888	0.0020	mg/kg	0.100	ND	88.8	70-130			
Toluene	0.0907	0.0050	"	0.100	ND	90.7	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.229	0.010	"	0.200	ND	115	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
Naphthalene	0.0852	0.0038	"	0.100	ND	85.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

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 BFK0379 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0379-MSD1)		Source: 2211255-01			Prepared: 11/14/22 Analyzed: 11/15/22					
Benzene	0.0862	0.0020	mg/kg	0.100	ND	86.2	70-130	2.98	30	
Toluene	0.0848	0.0050	"	0.100	ND	84.8	70-130	6.70	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	1.35	30	
m,p-Xylene	0.231	0.010	"	0.200	ND	116	70-130	1.04	30	
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130	0.944	30	
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	1.80	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	0.143	30	
Naphthalene	0.0857	0.0038	"	0.100	ND	85.7	70-130	0.562	30	
Surrogate: 1,2-Dichloroethane-d4		0.0408	"	0.0400		102	50-150			
Surrogate: Toluene-d8		0.0414	"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene		0.0415	"	0.0400		104	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0380 - EPA 3550A

Blank (BFK0380-BLK1)

Prepared & Analyzed: 11/14/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.4		"	12.5		90.9	30-150			

LCS (BFK0380-BS1)

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	517	50	mg/kg	500		103	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		91.9	30-150			

Matrix Spike (BFK0380-MS1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	461	50	mg/kg	500	27.4	86.7	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.7	30-150			

Matrix Spike Dup (BFK0380-MSD1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	488	50	mg/kg	500	27.4	92.2	70-130	5.76	20	
Surrogate: o-Terphenyl	13.6		"	12.5		109	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0381 - EPA 5030 Soil MS

Blank (BFK0381-BLK1)

Prepared & Analyzed: 11/15/22

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	0.0448		"	0.0333		134		40-150			
Surrogate: Fluoranthene-d10	0.0355		"	0.0333		106		40-150			

LCS (BFK0381-BS1)

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0372	0.00500	mg/kg	0.0333		112		31-137			
Anthracene	0.0383	0.00500	"	0.0333		115		30-120			
Benzo (a) anthracene	0.0337	0.00500	"	0.0333		101		30-120			
Benzo (a) pyrene	0.0387	0.00500	"	0.0333		116		30-120			
Benzo (b) fluoranthene	0.0383	0.00500	"	0.0333		115		30-120			
Benzo (k) fluoranthene	0.0300	0.00500	"	0.0333		90.1		30-120			
Chrysene	0.0335	0.00500	"	0.0333		101		30-120			
Dibenz (a,h) anthracene	0.0392	0.00500	"	0.0333		118		30-120			
Fluoranthene	0.0361	0.00500	"	0.0333		108		30-120			
Fluorene	0.0371	0.00500	"	0.0333		111		30-120			
Indeno (1,2,3-cd) pyrene	0.0378	0.00500	"	0.0333		113		30-120			
Pyrene	0.0362	0.00500	"	0.0333		109		35-142			
1-Methylnaphthalene	0.0345	0.00500	"	0.0333		103		35-142			
2-Methylnaphthalene	0.0353	0.00500	"	0.0333		106		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0372		"	0.0333		112		40-150			
Surrogate: Fluoranthene-d10	0.0372		"	0.0333		111		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0381 - EPA 5030 Soil MS

Matrix Spike (BFK0381-MS1)

Source: 2211234-01

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0291	0.00500	mg/kg	0.0333	ND	87.3	31-137		
Anthracene	0.0243	0.00500	"	0.0333	ND	72.9	30-120		
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.8	30-120		
Benzo (a) pyrene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120		
Benzo (k) fluoranthene	0.0261	0.00500	"	0.0333	ND	78.4	30-120		
Chrysene	0.0217	0.00500	"	0.0333	ND	65.2	30-120		
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333	ND	76.4	30-120		
Fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120		
Fluorene	0.0282	0.00500	"	0.0333	ND	84.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Pyrene	0.0229	0.00500	"	0.0333	ND	68.6	35-142		
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	70.0	15-130		
2-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0218		"	0.0333		65.4	40-150		
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.7	40-150		

Matrix Spike Dup (BFK0381-MSD1)

Source: 2211234-01

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0278	0.00500	mg/kg	0.0333	ND	83.5	31-137	4.50	30
Anthracene	0.0251	0.00500	"	0.0333	ND	75.4	30-120	3.40	30
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	0.628	30
Benzo (a) pyrene	0.0248	0.00500	"	0.0333	ND	74.4	30-120	1.95	30
Benzo (b) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120	1.26	30
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	1.79	30
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	0.452	30
Dibenz (a,h) anthracene	0.0275	0.00500	"	0.0333	ND	82.4	30-120	7.51	30
Fluoranthene	0.0263	0.00500	"	0.0333	ND	78.8	30-120	6.52	30
Fluorene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	8.55	30
Indeno (1,2,3-cd) pyrene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	5.06	30
Pyrene	0.0229	0.00500	"	0.0333	ND	68.7	35-142	0.134	30
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130	0.652	50
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.2	15-130	3.97	50
Surrogate: 2-Methylnaphthalene-d10	0.0226		"	0.0333		67.8	40-150		
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.7	40-150		

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
11/16/22 11:46

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

December 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211257

Enclosed are the results of analyses for samples received by Summit Scientific on 11/14/22 17:16. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS32@5'	2211257-01	Soil	11/14/22 10:00	11/14/22 17:16
SS33@10.5'	2211257-02	Soil	11/14/22 10:05	11/14/22 17:16
SS34@14.5'	2211257-03	Soil	11/14/22 10:10	11/14/22 17:16

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.

2211257

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

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

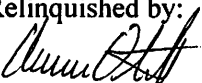
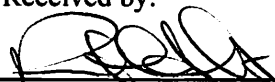
Phone: 303-487-1228

Project Name: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	5532@5'	11/14/22	1000	3			X			X				X	X			X			X	
2	5533@10.5'	1	1005	1			1			1				1	1			1		1		
3	5534@14.5'	1	1010	1			1			1				1	1			1		1		
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 11/14/22 1050	Received by: Tasman Lockbox	Date/Time: 11/14/22 1050	Turn Around Time (Check)	Same Day <u>X</u> 72 hours — 24 hours — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: <u>4.9</u> Samples Intact: (yes) No	Notes: *: Fluorene, 1-M, 2-M
Relinquished by: Tasman Lockbox	Date/Time: 11/14/22 1716	Received by: 	Date/Time: 11/14/22 1716			
Relinquished by:	Date/Time:	Received by:	Date/Time:			
Relinquished by:	Date/Time:	Received by:	Date/Time:			

S₂

Sample Receipt Checklist

S2 Work Order#

2211 257

Client: DOC/TrasmenClient Project ID: Totems 44-24 Tank Battery

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

Airbill #:

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

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☐

Other

☐

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-14-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS32@5'
2211257-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0439	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.9	86.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS32@5'
2211257-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0223	66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0146	43.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.04	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.283	0.200	"	"	"	"	"	"	
Lead	10.9	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/14/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS33@10.5'
2211257-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0414	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0432	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.5	83.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS33@10.5'
2211257-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0257	77.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0178	53.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	29.4	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.571	0.200	"	"	"	"	"	"	
Lead	9.01	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/14/22 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS34@14.5'
2211257-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0379	11/14/22	11/14/22	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: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0420	105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0410	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0440	110 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0380	11/14/22	11/14/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.99	79.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

SS34@14.5'
2211257-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0381	11/15/22	11/16/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0191	57.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.40	0.200	mg/kg dry	1	BFK0526	11/19/22	11/21/22	EPA 6020B	
Cadmium	0.209	0.200	"	"	"	"	"	"	
Lead	9.36	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/14/22 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BFK0537	11/20/22	11/21/22	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

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 BFK0379 - EPA 5030 Soil MS

Blank (BFK0379-BLK1)

Prepared: 11/14/22 Analyzed: 11/15/22

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	0.0413		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0439		"	0.0400		110	50-150			

LCS (BFK0379-BS1)

Prepared: 11/14/22 Analyzed: 11/15/22

Benzene	0.0868	0.0020	mg/kg	0.100		86.8	70-130			
Toluene	0.115	0.0050	"	0.100		115	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.231	0.010	"	0.200		115	70-130			
o-Xylene	0.106	0.0050	"	0.100		106	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.103	0.0038	"	0.100		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0414		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	50-150			

Matrix Spike (BFK0379-MS1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

Benzene	0.0888	0.0020	mg/kg	0.100	ND	88.8	70-130			
Toluene	0.0907	0.0050	"	0.100	ND	90.7	70-130			
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
m,p-Xylene	0.229	0.010	"	0.200	ND	115	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
Naphthalene	0.0852	0.0038	"	0.100	ND	85.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0430		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

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 BFK0379 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0379-MSD1)		Source: 2211255-01			Prepared: 11/14/22 Analyzed: 11/15/22					
Benzene	0.0862	0.0020	mg/kg	0.100	ND	86.2	70-130	2.98	30	
Toluene	0.0848	0.0050	"	0.100	ND	84.8	70-130	6.70	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	1.35	30	
m,p-Xylene	0.231	0.010	"	0.200	ND	116	70-130	1.04	30	
o-Xylene	0.109	0.0050	"	0.100	ND	109	70-130	0.944	30	
1,2,4-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	1.80	30	
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	0.143	30	
Naphthalene	0.0857	0.0038	"	0.100	ND	85.7	70-130	0.562	30	
Surrogate: 1,2-Dichloroethane-d4		0.0408	"	0.0400		102	50-150			
Surrogate: Toluene-d8		0.0414	"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene		0.0415	"	0.0400		104	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0380 - EPA 3550A

Blank (BFK0380-BLK1)

Prepared & Analyzed: 11/14/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.4		"	12.5		90.9	30-150			

LCS (BFK0380-BS1)

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	517	50	mg/kg	500		103	70-130			
Surrogate: o-Terphenyl	11.5		"	12.5		91.9	30-150			

Matrix Spike (BFK0380-MS1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	461	50	mg/kg	500	27.4	86.7	70-130			
Surrogate: o-Terphenyl	10.8		"	12.5		86.7	30-150			

Matrix Spike Dup (BFK0380-MSD1)

Source: 2211255-01

Prepared: 11/14/22 Analyzed: 11/15/22

C10-C28 (DRO)	488	50	mg/kg	500	27.4	92.2	70-130	5.76	20	
Surrogate: o-Terphenyl	13.6		"	12.5		109	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0381 - EPA 5030 Soil MS

Blank (BFK0381-BLK1)

Prepared & Analyzed: 11/15/22

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	0.0448		"	0.0333		134		40-150			
Surrogate: Fluoranthene-d10	0.0355		"	0.0333		106		40-150			

LCS (BFK0381-BS1)

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0372	0.00500	mg/kg	0.0333		112		31-137			
Anthracene	0.0383	0.00500	"	0.0333		115		30-120			
Benzo (a) anthracene	0.0337	0.00500	"	0.0333		101		30-120			
Benzo (a) pyrene	0.0387	0.00500	"	0.0333		116		30-120			
Benzo (b) fluoranthene	0.0383	0.00500	"	0.0333		115		30-120			
Benzo (k) fluoranthene	0.0300	0.00500	"	0.0333		90.1		30-120			
Chrysene	0.0335	0.00500	"	0.0333		101		30-120			
Dibenz (a,h) anthracene	0.0392	0.00500	"	0.0333		118		30-120			
Fluoranthene	0.0361	0.00500	"	0.0333		108		30-120			
Fluorene	0.0371	0.00500	"	0.0333		111		30-120			
Indeno (1,2,3-cd) pyrene	0.0378	0.00500	"	0.0333		113		30-120			
Pyrene	0.0362	0.00500	"	0.0333		109		35-142			
1-Methylnaphthalene	0.0345	0.00500	"	0.0333		103		35-142			
2-Methylnaphthalene	0.0353	0.00500	"	0.0333		106		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0372		"	0.0333		112		40-150			
Surrogate: Fluoranthene-d10	0.0372		"	0.0333		111		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0381 - EPA 5030 Soil MS

Matrix Spike (BKF0381-MS1)

Source: 2211234-01

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0291	0.00500	mg/kg	0.0333	ND	87.3	31-137		
Anthracene	0.0243	0.00500	"	0.0333	ND	72.9	30-120		
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.8	30-120		
Benzo (a) pyrene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Benzo (b) fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120		
Benzo (k) fluoranthene	0.0261	0.00500	"	0.0333	ND	78.4	30-120		
Chrysene	0.0217	0.00500	"	0.0333	ND	65.2	30-120		
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333	ND	76.4	30-120		
Fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120		
Fluorene	0.0282	0.00500	"	0.0333	ND	84.7	30-120		
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333	ND	73.0	30-120		
Pyrene	0.0229	0.00500	"	0.0333	ND	68.6	35-142		
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	70.0	15-130		
2-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0218		"	0.0333		65.4	40-150		
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.7	40-150		

Matrix Spike Dup (BKF0381-MSD1)

Source: 2211234-01

Prepared & Analyzed: 11/15/22

Acenaphthene	0.0278	0.00500	mg/kg	0.0333	ND	83.5	31-137	4.50	30
Anthracene	0.0251	0.00500	"	0.0333	ND	75.4	30-120	3.40	30
Benzo (a) anthracene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	0.628	30
Benzo (a) pyrene	0.0248	0.00500	"	0.0333	ND	74.4	30-120	1.95	30
Benzo (b) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120	1.26	30
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	1.79	30
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	0.452	30
Dibenz (a,h) anthracene	0.0275	0.00500	"	0.0333	ND	82.4	30-120	7.51	30
Fluoranthene	0.0263	0.00500	"	0.0333	ND	78.8	30-120	6.52	30
Fluorene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	8.55	30
Indeno (1,2,3-cd) pyrene	0.0256	0.00500	"	0.0333	ND	76.8	30-120	5.06	30
Pyrene	0.0229	0.00500	"	0.0333	ND	68.7	35-142	0.134	30
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	ND	70.4	15-130	0.652	50
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.2	15-130	3.97	50
Surrogate: 2-Methylnaphthalene-d10	0.0226		"	0.0333		67.8	40-150		
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.7	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0526 - EPA 3050B

Blank (BFK0526-BLK1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFK0526-BS1)

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	46.7	0.200	mg/kg wet	40.0		117	80-120			
Cadmium	2.17	0.200	"	2.00		108	80-120			
Lead	21.1	0.200	"	20.0		105	80-120			

Duplicate (BFK0526-DUP1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	4.65	0.200	mg/kg dry		3.20			37.1	20	QR-03
Cadmium	0.139	0.200	"		0.146			4.45	20	
Lead	9.36	0.200	"		7.54			21.5	20	QR-03

Matrix Spike (BFK0526-MS1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	63.2	0.200	mg/kg dry	46.2	3.20	130	75-125			QM-05
Cadmium	2.55	0.200	"	2.31	0.146	104	75-125			
Lead	33.5	0.200	"	23.1	7.54	112	75-125			

Matrix Spike Dup (BFK0526-MSD1)

Source: 2210493-01

Prepared: 11/19/22 Analyzed: 11/21/22

Arsenic	62.1	0.200	mg/kg dry	46.2	3.20	127	75-125	1.80	25	QM-05
Cadmium	2.63	0.200	"	2.31	0.146	108	75-125	3.11	25	
Lead	31.0	0.200	"	23.1	7.54	101	75-125	7.86	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

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 BFK0537 - General Preparation

Duplicate (BFK0537-DUP1)		Source: 2211165-01		Prepared: 11/20/22 Analyzed: 11/21/22	
% Solids	83.0		%	83.7	0.771 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/08/22 09:25

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

November 23, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211312

Enclosed are the results of analyses for samples received by Summit Scientific on 11/17/22 17:06. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS35@5'	2211312-01	Soil	11/17/22 11:00	11/17/22 17:06
SS36@10.5'	2211312-02	Soil	11/17/22 11:05	11/17/22 17:06
SS37@14.5'	2211312-03	Soil	11/17/22 11:10	11/17/22 17:06
SS38@14.5'	2211312-04	Soil	11/17/22 11:15	11/17/22 17:06
SS39@5'	2211312-05	Soil	11/17/22 13:00	11/17/22 17:06
SS40@10.5'	2211312-06	Soil	11/17/22 13:05	11/17/22 17:06
SS41@14.5'	2211312-07	Soil	11/17/22 13:10	11/17/22 17:06

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.

22/13/12

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	★				
1	SS35e5'	11/17/22	1100	3			X			X				X	X			X						
2	SS36e 10.5'		1105																					
3	SS37e 14.5'		1110																					
4	SS38e 14.5'		1115																					
5	SS39e 5'		1300																					
6	SS40e 10.5'		1305																					
7	SS41e 14.5'		1310																					
8																								
9																								
10																								

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes: ★. Fluorene, 1-M, 2-M
<i>Aaron Otilar</i>	11/17/22 1500	Tasman Lockbox	11/17/22 1500	Same Day	<input checked="" type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	<input type="checkbox"/> Standard	
<i>Tasman Lockbox</i>	11/17/22 1700	<i>[Signature]</i>	11/17/22 1700	48 hours	<input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	71	
				Samples Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2211312Client: PackasmanClient Project ID: Totems 44-24 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)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input 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

Date/Time



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS35@5'
2211312-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		87.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS35@5'
2211312-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.89	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.337	0.200	"	"	"	"	"	"	
Lead	12.6	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.3		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS36@10.5'
2211312-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		84.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS36@10.5'
2211312-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.02	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.361	0.200	"	"	"	"	"	"	
Lead	13.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS37@14.5'
2211312-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		77.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/17/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS37@14.5'
2211312-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.64	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.308	0.200	"	"	"	"	"	"	
Lead	15.4	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.4		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS38@14.5'
2211312-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		74.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS38@14.5'
2211312-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.44	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.313	0.200	"	"	"	"	"	"	
Lead	13.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS39@5'
2211312-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS39@5'
2211312-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		42.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.71	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.361	0.200	"	"	"	"	"	"	
Lead	13.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS40@10.5'
2211312-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		83.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS40@10.5'
2211312-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.78	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	12.9	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFK0537	11/20/22	11/21/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS41@14.5'
2211312-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0478	11/17/22	11/17/22	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: **11/17/22 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0479	11/17/22	11/18/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

SS41@14.5'
2211312-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0481	11/18/22	11/19/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.16	0.200	mg/kg dry	1	BFK0528	11/19/22	11/22/22	EPA 6020B	
Cadmium	0.276	0.200	"	"	"	"	"	"	
Lead	13.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/17/22 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BFK0537	11/20/22	11/21/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

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 BFK0478 - EPA 5030 Soil MS

Blank (BFK0478-BLK1)

Prepared: 11/17/22 Analyzed: 11/18/22

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	0.0314		"	0.0400		78.5	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

LCS (BFK0478-BS1)

Prepared: 11/17/22 Analyzed: 11/18/22

Benzene	0.0733	0.0020	mg/kg	0.0750		97.7	70-130			
Toluene	0.0726	0.0050	"	0.0750		96.8	70-130			
Ethylbenzene	0.0732	0.0050	"	0.0750		97.6	70-130			
m,p-Xylene	0.151	0.010	"	0.150		101	70-130			
o-Xylene	0.0785	0.0050	"	0.0750		105	70-130			
1,2,4-Trimethylbenzene	0.0863	0.0050	"	0.0750		115	70-130			
1,3,5-Trimethylbenzene	0.0845	0.0050	"	0.0750		113	70-130			
Naphthalene	0.0813	0.0038	"	0.0750		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0239		"	0.0400		59.8	50-150			
Surrogate: Toluene-d8	0.0442		"	0.0400		111	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	50-150			

Matrix Spike (BFK0478-MS1)

Source: 2211311-01

Prepared: 11/17/22 Analyzed: 11/18/22

Benzene	0.0714	0.0020	mg/kg	0.0750	ND	95.2	70-130			
Toluene	0.0699	0.0050	"	0.0750	ND	93.2	70-130			
Ethylbenzene	0.0716	0.0050	"	0.0750	ND	95.4	70-130			
m,p-Xylene	0.152	0.010	"	0.150	ND	101	70-130			
o-Xylene	0.0783	0.0050	"	0.0750	ND	104	70-130			
1,2,4-Trimethylbenzene	0.0870	0.0050	"	0.0750	ND	116	70-130			
1,3,5-Trimethylbenzene	0.0837	0.0050	"	0.0750	ND	112	70-130			
Naphthalene	0.0608	0.0038	"	0.0750	ND	81.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0319		"	0.0400		79.7	50-150			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

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 BFK0478 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0478-MSD1)	Source: 2211311-01			Prepared: 11/17/22 Analyzed: 11/18/22						
Benzene	0.0712	0.0020	mg/kg	0.0750	ND	95.0	70-130	0.168	30	
Toluene	0.0706	0.0050	"	0.0750	ND	94.1	70-130	0.939	30	
Ethylbenzene	0.0716	0.0050	"	0.0750	ND	95.4	70-130	0.0419	30	
m,p-Xylene	0.149	0.010	"	0.150	ND	99.6	70-130	1.38	30	
o-Xylene	0.0784	0.0050	"	0.0750	ND	105	70-130	0.115	30	
1,2,4-Trimethylbenzene	0.0879	0.0050	"	0.0750	ND	117	70-130	1.06	30	
1,3,5-Trimethylbenzene	0.0841	0.0050	"	0.0750	ND	112	70-130	0.501	30	
Naphthalene	0.0591	0.0038	"	0.0750	ND	78.8	70-130	2.85	30	
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.0	50-150			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0479 - EPA 3550A

Blank (BFK0479-BLK1)

Prepared: 11/17/22 Analyzed: 11/18/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.3		"	12.5		98.2	30-150			

LCS (BFK0479-BS1)

Prepared: 11/17/22 Analyzed: 11/18/22

C10-C28 (DRO)	460	50	mg/kg	500		92.1	70-130			
Surrogate: o-Terphenyl	14.5		"	12.5		116	30-150			

Matrix Spike (BFK0479-MS1)

Source: 2211311-01

Prepared: 11/17/22 Analyzed: 11/18/22

C10-C28 (DRO)	414	50	mg/kg	500	28.3	77.1	70-130			
Surrogate: o-Terphenyl	13.9		"	12.5		111	30-150			

Matrix Spike Dup (BFK0479-MSD1)

Source: 2211311-01

Prepared: 11/17/22 Analyzed: 11/18/22

C10-C28 (DRO)	424	50	mg/kg	500	28.3	79.1	70-130	2.36	20	
Surrogate: o-Terphenyl	12.9		"	12.5		103	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0481 - EPA 5030 Soil MS

Blank (BFK0481-BLK1)

Prepared & Analyzed: 11/18/22

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	0.0380		"	0.0333		114		40-150			
Surrogate: Fluoranthene-d10	0.0278		"	0.0333		83.4		40-150			

LCS (BFK0481-BS1)

Prepared & Analyzed: 11/18/22

Acenaphthene	0.0394	0.00500	mg/kg	0.0333		118		31-137			
Anthracene	0.0362	0.00500	"	0.0333		109		30-120			
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.6		30-120			
Benzo (a) pyrene	0.0310	0.00500	"	0.0333		92.9		30-120			
Benzo (b) fluoranthene	0.0342	0.00500	"	0.0333		103		30-120			
Benzo (k) fluoranthene	0.0357	0.00500	"	0.0333		107		30-120			
Chrysene	0.0321	0.00500	"	0.0333		96.4		30-120			
Dibenz (a,h) anthracene	0.0286	0.00500	"	0.0333		85.8		30-120			
Fluoranthene	0.0362	0.00500	"	0.0333		109		30-120			
Fluorene	0.0342	0.00500	"	0.0333		102		30-120			
Indeno (1,2,3-cd) pyrene	0.0242	0.00500	"	0.0333		72.7		30-120			
Pyrene	0.0316	0.00500	"	0.0333		94.8		35-142			
1-Methylnaphthalene	0.0296	0.00500	"	0.0333		88.9		35-142			
2-Methylnaphthalene	0.0307	0.00500	"	0.0333		92.1		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0322		"	0.0333		96.6		40-150			
Surrogate: Fluoranthene-d10	0.0367		"	0.0333		110		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0481 - EPA 5030 Soil MS

Matrix Spike (BKF0481-MS1)

Source: 2211248-01

Prepared & Analyzed: 11/18/22

Acenaphthene	0.0271	0.00500	mg/kg	0.0333	ND	81.4	31-137		
Anthracene	0.0229	0.00500	"	0.0333	ND	68.8	30-120		
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120		
Benzo (a) pyrene	0.0205	0.00500	"	0.0333	0.00208	55.3	30-120		
Benzo (b) fluoranthene	0.0227	0.00500	"	0.0333	ND	68.0	30-120		
Benzo (k) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120		
Chrysene	0.0225	0.00500	"	0.0333	ND	67.6	30-120		
Dibenz (a,h) anthracene	0.0195	0.00500	"	0.0333	ND	58.6	30-120		
Fluoranthene	0.0237	0.00500	"	0.0333	ND	71.0	30-120		
Fluorene	0.0232	0.00500	"	0.0333	ND	69.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.9	30-120		
Pyrene	0.0209	0.00500	"	0.0333	ND	62.7	35-142		
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.4	15-130		
2-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.4	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.3	40-150		
Surrogate: Fluoranthene-d10	0.0217		"	0.0333		65.0	40-150		

Matrix Spike Dup (BKF0481-MSD1)

Source: 2211248-01

Prepared & Analyzed: 11/18/22

Acenaphthene	0.0267	0.00500	mg/kg	0.0333	ND	80.2	31-137	1.53	30
Anthracene	0.0219	0.00500	"	0.0333	ND	65.8	30-120	4.53	30
Benzo (a) anthracene	0.0207	0.00500	"	0.0333	ND	62.0	30-120	1.28	30
Benzo (a) pyrene	0.0201	0.00500	"	0.0333	0.00208	54.1	30-120	1.91	30
Benzo (b) fluoranthene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	2.77	30
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.7	30-120	7.06	30
Chrysene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	6.99	30
Dibenz (a,h) anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.24	30
Fluoranthene	0.0225	0.00500	"	0.0333	ND	67.4	30-120	5.30	30
Fluorene	0.0224	0.00500	"	0.0333	ND	67.3	30-120	3.30	30
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333	ND	52.4	30-120	0.840	30
Pyrene	0.0204	0.00500	"	0.0333	ND	61.3	35-142	2.18	30
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130	0.332	50
2-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.3	15-130	3.01	50
Surrogate: 2-Methylnaphthalene-d10	0.0205		"	0.0333		61.4	40-150		
Surrogate: Fluoranthene-d10	0.0210		"	0.0333		63.0	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0528 - EPA 3050B

Blank (BFK0528-BLK1)

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFK0528-BS1)

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	44.4	0.200	mg/kg wet	40.0		111	80-120			
Cadmium	2.23	0.200	"	2.00		111	80-120			
Lead	22.7	0.200	"	20.0		113	80-120			

Duplicate (BFK0528-DUP1)

Source: 2211230-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	1.22	0.200	mg/kg dry		1.18			3.17	20	
Cadmium	0.0865	0.200	"		0.0837			3.36	20	
Lead	4.33	0.200	"		3.95			9.06	20	

Matrix Spike (BFK0528-MS1)

Source: 2211230-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	50.7	0.200	mg/kg dry	40.8	1.18	121	75-125			
Cadmium	2.12	0.200	"	2.04	0.0837	99.8	75-125			
Lead	24.3	0.200	"	20.4	3.95	99.5	75-125			

Matrix Spike Dup (BFK0528-MSD1)

Source: 2211230-01

Prepared: 11/19/22 Analyzed: 11/22/22

Arsenic	57.9	0.200	mg/kg dry	40.8	1.18	139	75-125	13.3	25	QM-05
Cadmium	2.39	0.200	"	2.04	0.0837	113	75-125	12.1	25	
Lead	26.0	0.200	"	20.4	3.95	108	75-125	6.94	25	

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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

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 BFK0537 - General Preparation

Duplicate (BFK0537-DUP1)		Source: 2211165-01		Prepared: 11/20/22 Analyzed: 11/21/22	
% Solids	83.0		%	83.7	0.771 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: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
11/23/22 11:58

Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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

November 28, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211348

Enclosed are the results of analyses for samples received by Summit Scientific on 11/21/22 17:19. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG03@2.5'	2211348-01	Soil	11/21/22 09:44	11/21/22 17:19
BKG03@5'	2211348-02	Soil	11/21/22 09:50	11/21/22 17:19
BKG03@7'	2211348-03	Soil	11/21/22 10:00	11/21/22 17:19
BKG03@10.5'	2211348-04	Soil	11/21/22 10:15	11/21/22 17:19
BKG03@14.5	2211348-05	Soil	11/21/22 10:30	11/21/22 17:19
SS42@14.5'	2211348-06	Soil	11/21/22 10:02	11/21/22 17:19
SS43@14.5'	2211348-07	Soil	11/21/22 10:07	11/21/22 17:19
SS44@5'	2211348-08	Soil	11/21/22 13:49	11/21/22 17:19
SS45@10.5'	2211348-09	Soil	11/21/22 13:55	11/21/22 17:19
SS46@14.5'	2211348-10	Soil	11/21/22 14:00	11/21/22 17:19
SS47@5'	2211348-11	Soil	11/21/22 14:30	11/21/22 17:19
SS48@10.5'	2211348-12	Soil	11/21/22 14:35	11/21/22 17:19
SS49@14.5'	2211348-13	Soil	11/21/22 14:40	11/21/22 17:19

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

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

201348.12

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

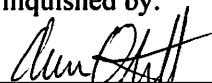
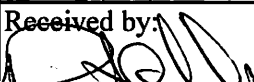
Phone: 303-487-1228

Project Name: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

Project Number: NA

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	+	
1	BK603@2.5'	11/21/22	0944	1			X			X									X		
2	BK603@5'		0950	1															X		
3	BK603@7'		1000	1															X		
4	BK603@10.5'		1015	1															X		
5	BK603@14.5'		1030	1															X		
6	SS42@14.5'		1002	3									X	X			X		X	X	
7	SS43@14.5'		1007	1															X		
8	SS44@5'		1349	1															X		
9	SS45@10.5'		1355	1															X		
10	SS46@14.5'		1400	1															X		

Relinquished by: 	Date/Time: 11/21/22 1630	Received by: Tasman Lockbox	Date/Time: 11/21/22 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 8.0 Samples Intact: <input checked="" type="checkbox"/> Yes No Notes: +: Fluorene, 1-M, 2-M *: Arsenic, Cadmium & Lead BK603@2.5, BK603@5', BK603@7' BK603@10.5 BK603@14.5 For Full 915 Metals]
Relinquished by: Tasman Lockbox	Date/Time: 11/21/22 1719	Received by: 	Date/Time: 11/21/22 1719	
Relinquished by:	Date/Time:	Received by:	Date/Time:	

Summit Scientific

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

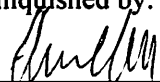
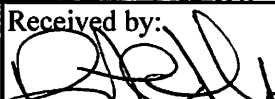
Phone: 303-487-1228

Project Name: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915 *	+		
1	SS47@5'	11/21/22	1430	3			X			X				X	X			X		X	X	
2	SS48@10.5'	1	1435	1			1			1				1	1			1		1	1	
3	SS49@14.5'	1	1440	1			1			1				1	1			1		1	1	
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 11/21/22 1630	Received by: Tasman Lockbox	Date/Time: 11/21/22 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 80 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: +: Fluorene, 1-M, 2-M *: Arsenic, Cadmium Lead
Relinquished by: Tasman Lockbox	Date/Time: 11/21/22 1719	Received by: 	Date/Time: 11/21/22 1719		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2211348Client: Postrasman Client Project ID: Totems 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #:

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

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.0 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"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-21-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

BKG03@2.5'
2211348-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/21/22 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.69	0.237	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Barium	72.7	0.473	"	"	"	"	"	"	
Cadmium	0.345	0.237	"	"	"	"	"	"	
Copper	11.2	0.473	"	"	"	"	"	"	
Lead	12.0	0.237	"	"	"	"	"	"	
Nickel	12.1	0.473	"	"	"	"	"	"	
Selenium	0.832	0.308	"	"	"	"	"	"	
Silver	0.0573	0.0237	"	"	"	"	"	"	
Zinc	38.5	0.473	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/21/22 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0570	11/22/22	11/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 09:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.5		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

BKG03@5'
2211348-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/21/22 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.41	0.237	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Barium	60.1	0.475	"	"	"	"	"	"	
Cadmium	0.292	0.237	"	"	"	"	"	"	
Copper	10.8	0.475	"	"	"	"	"	"	
Lead	9.88	0.237	"	"	"	"	"	"	
Nickel	12.3	0.475	"	"	"	"	"	"	
Selenium	ND	0.309	"	"	"	"	"	"	
Silver	0.0351	0.0237	"	"	"	"	"	"	
Zinc	33.0	0.475	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/21/22 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0570	11/22/22	11/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 09:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.2		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

BKG03@7'
2211348-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/21/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.02	0.229	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Barium	35.5	0.457	"	"	"	"	"	"	
Cadmium	ND	0.229	"	"	"	"	"	"	
Copper	13.0	0.457	"	"	"	"	"	"	
Lead	12.2	0.229	"	"	"	"	"	"	
Nickel	17.3	0.457	"	"	"	"	"	"	
Selenium	ND	0.297	"	"	"	"	"	"	
Silver	ND	0.0229	"	"	"	"	"	"	
Zinc	61.5	0.457	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/21/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0570	11/22/22	11/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 10:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	87.5		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

BKG03@10.5'
2211348-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/21/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.65	0.235	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Barium	41.5	0.470	"	"	"	"	"	"	
Cadmium	0.517	0.235	"	"	"	"	"	"	
Copper	15.1	0.470	"	"	"	"	"	"	
Lead	16.5	0.235	"	"	"	"	"	"	
Nickel	22.7	0.470	"	"	"	"	"	"	
Selenium	0.427	0.305	"	"	"	"	"	"	
Silver	0.0620	0.0235	"	"	"	"	"	"	
Zinc	75.9	0.470	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/21/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0570	11/22/22	11/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 10:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	85.2		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

BKG03@14.5
2211348-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **11/21/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	269	0.235	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Barium	18.8	0.470	"	"	"	"	"	"	
Cadmium	ND	0.235	"	"	"	"	"	"	
Copper	5.56	0.470	"	"	"	"	"	"	
Lead	6.35	0.235	"	"	"	"	"	"	
Nickel	8.28	0.470	"	"	"	"	"	"	
Selenium	ND	0.306	"	"	"	"	"	"	
Silver	ND	0.0235	"	"	"	"	"	"	
Zinc	27.5	0.470	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **11/21/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFK0570	11/22/22	11/22/22	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 10:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	85.0		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS42@14.5'
2211348-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		51.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS42@14.5'
2211348-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/22/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		83.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.39	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.212	0.200	"	"	"	"	"	"	
Lead	7.41	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 10:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS43@14.5'
2211348-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 10:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		73.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS43@14.5'
2211348-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/22/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.93	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.287	0.200	"	"	"	"	"	"	
Lead	10.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 10:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS44@5'
2211348-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		76.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS44@5'
2211348-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		43.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.00	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.384	0.200	"	"	"	"	"	"	
Lead	12.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 13:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS45@10.5'
2211348-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		72.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS45@10.5'
2211348-09 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		72.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	15.1	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.223	0.200	"	"	"	"	"	"	
Lead	8.34	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS46@14.5'
2211348-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		71.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS46@14.5'
2211348-10 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		48.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.24	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	7.26	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS47@5'
2211348-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		69.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS47@5'
2211348-11 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		65.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.04	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.345	0.200	"	"	"	"	"	"	
Lead	10.8	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.7		%	1	BFK0562	11/22/22	11/22/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS48@10.5'
2211348-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		65.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS48@10.5'
2211348-12 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		67.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.43	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	0.371	0.200	"	"	"	"	"	"	
Lead	13.1	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.2		%	1	BFK0562	11/22/22	11/22/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS49@14.5'
2211348-13 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0554	11/21/22	11/21/22	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: **11/21/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		46.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0555	11/21/22	11/21/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

SS49@14.5'
2211348-13 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0558	11/22/22	11/23/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		56.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.75	0.200	mg/kg dry	1	BFK0553	11/21/22	11/22/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/21/22 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BFK0562	11/22/22	11/22/22	Calculation	

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

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 BFK0554 - EPA 5030 Soil MS

Blank (BFK0554-BLK1)

Prepared: 11/21/22 Analyzed: 11/22/22

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	0.0381		"	0.0400		95.2	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0539		"	0.0400		135	50-150			

LCS (BFK0554-BS1)

Prepared: 11/21/22 Analyzed: 11/22/22

Benzene	0.0967	0.0020	mg/kg	0.100		96.7	70-130			
Toluene	0.0776	0.0050	"	0.100		77.6	70-130			
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130			
m,p-Xylene	0.254	0.010	"	0.200		127	70-130			
o-Xylene	0.122	0.0050	"	0.100		122	70-130			
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.100		125	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.100		127	70-130			
Naphthalene	0.101	0.0038	"	0.100		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0329		"	0.0400		82.4	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0593		"	0.0400		148	50-150			

Matrix Spike (BFK0554-MS1)

Source: 2211348-06

Prepared: 11/21/22 Analyzed: 11/22/22

Benzene	0.0962	0.0020	mg/kg	0.100	ND	96.2	70-130			
Toluene	0.0746	0.0050	"	0.100	ND	74.6	70-130			
Ethylbenzene	0.0977	0.0050	"	0.100	ND	97.7	70-130			
m,p-Xylene	0.202	0.010	"	0.200	ND	101	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
Naphthalene	0.0957	0.0038	"	0.100	ND	95.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.3	50-150			
Surrogate: Toluene-d8	0.0426		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0537		"	0.0400		134	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

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 BFK0554 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0554-MSD1)	Source: 2211348-06			Prepared: 11/21/22 Analyzed: 11/22/22						
Benzene	0.0985	0.0020	mg/kg	0.100	ND	98.5	70-130	2.34	30	
Toluene	0.0772	0.0050	"	0.100	ND	77.2	70-130	3.44	30	
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	2.96	30	
m,p-Xylene	0.207	0.010	"	0.200	ND	104	70-130	2.37	30	
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130	0.359	30	
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	0.00	30	
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	0.435	30	
Naphthalene	0.108	0.0038	"	0.100	ND	108	70-130	12.2	30	
Surrogate: 1,2-Dichloroethane-d4	0.0341		"	0.0400		85.3	50-150			
Surrogate: Toluene-d8	0.0426		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0484		"	0.0400		121	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0555 - EPA 3550A

Blank (BFK0555-BLK1)

Prepared & Analyzed: 11/21/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.3		"	12.5		98.8	30-150			

LCS (BFK0555-BS1)

Prepared: 11/21/22 Analyzed: 11/22/22

C10-C28 (DRO)	495	50	mg/kg	500		99.0	70-130			
Surrogate: o-Terphenyl	12.8		"	12.5		102	30-150			

Matrix Spike (BFK0555-MS1)

Source: 2211348-06

Prepared: 11/21/22 Analyzed: 11/22/22

C10-C28 (DRO)	438	50	mg/kg	500	27.1	82.1	70-130			
Surrogate: o-Terphenyl	11.4		"	12.5		90.9	30-150			

Matrix Spike Dup (BFK0555-MSD1)

Source: 2211348-06

Prepared: 11/21/22 Analyzed: 11/22/22

C10-C28 (DRO)	447	50	mg/kg	500	27.1	84.0	70-130	2.08	20	
Surrogate: o-Terphenyl	11.7		"	12.5		93.8	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0558 - EPA 5030 Soil MS

Blank (BFK0558-BLK1)

Prepared & Analyzed: 11/22/22

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	0.0389		"	0.0333		117		40-150			
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.1		40-150			

LCS (BFK0558-BS1)

Prepared & Analyzed: 11/22/22

Acenaphthene	0.0391	0.00500	mg/kg	0.0333		117		31-137			
Anthracene	0.0379	0.00500	"	0.0333		114		30-120			
Benzo (a) anthracene	0.0336	0.00500	"	0.0333		101		30-120			
Benzo (a) pyrene	0.0395	0.00500	"	0.0333		118		30-120			
Benzo (b) fluoranthene	0.0381	0.00500	"	0.0333		114		30-120			
Benzo (k) fluoranthene	0.0399	0.00500	"	0.0333		120		30-120			
Chrysene	0.0328	0.00500	"	0.0333		98.5		30-120			
Dibenz (a,h) anthracene	0.0378	0.00500	"	0.0333		114		30-120			
Fluoranthene	0.0375	0.00500	"	0.0333		112		30-120			
Fluorene	0.0397	0.00500	"	0.0333		119		30-120			
Indeno (1,2,3-cd) pyrene	0.0353	0.00500	"	0.0333		106		30-120			
Pyrene	0.0355	0.00500	"	0.0333		107		35-142			
1-Methylnaphthalene	0.0338	0.00500	"	0.0333		101		35-142			
2-Methylnaphthalene	0.0350	0.00500	"	0.0333		105		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0353		"	0.0333		106		40-150			
Surrogate: Fluoranthene-d10	0.0379		"	0.0333		114		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0558 - EPA 5030 Soil MS

Matrix Spike (BKF0558-MS1)

Source: 2211223-21

Prepared & Analyzed: 11/22/22

Acenaphthene	0.0253	0.00500	mg/kg	0.0333	ND	75.9	31-137		
Anthracene	0.0202	0.00500	"	0.0333	ND	60.5	30-120		
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.5	30-120		
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.2	30-120		
Benzo (b) fluoranthene	0.0240	0.00500	"	0.0333	ND	72.1	30-120		
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333	ND	69.1	30-120		
Chrysene	0.0194	0.00500	"	0.0333	ND	58.1	30-120		
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333	ND	67.7	30-120		
Fluoranthene	0.0200	0.00500	"	0.0333	ND	60.0	30-120		
Fluorene	0.0221	0.00500	"	0.0333	ND	66.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0214	0.00500	"	0.0333	ND	64.1	30-120		
Pyrene	0.0196	0.00500	"	0.0333	ND	58.9	35-142		
1-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.2	15-130		
2-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0201		"	0.0333		60.3	40-150		
Surrogate: Fluoranthene-d10	0.0204		"	0.0333		61.2	40-150		

Matrix Spike Dup (BKF0558-MSD1)

Source: 2211223-21

Prepared & Analyzed: 11/22/22

Acenaphthene	0.0276	0.00500	mg/kg	0.0333	ND	82.9	31-137	8.77	30
Anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	1.97	30
Benzo (a) anthracene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	3.19	30
Benzo (a) pyrene	0.0231	0.00500	"	0.0333	ND	69.2	30-120	2.90	30
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	75.1	30-120	4.08	30
Benzo (k) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.7	30-120	2.33	30
Chrysene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	2.27	30
Dibenz (a,h) anthracene	0.0216	0.00500	"	0.0333	ND	64.8	30-120	4.29	30
Fluoranthene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	15.2	30
Fluorene	0.0249	0.00500	"	0.0333	ND	74.6	30-120	12.0	30
Indeno (1,2,3-cd) pyrene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	2.13	30
Pyrene	0.0219	0.00500	"	0.0333	ND	65.7	35-142	10.8	30
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.1	15-130	3.32	50
2-Methylnaphthalene	0.0197	0.00500	"	0.0333	ND	59.0	15-130	0.258	50
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.6	40-150		
Surrogate: Fluoranthene-d10	0.0247		"	0.0333		74.2	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFK0553 - EPA 3050B

Blank (BFK0553-BLK1)

Prepared: 11/21/22 Analyzed: 11/22/22

Arsenic	ND	0.200	mg/kg wet
Arsenic	ND	0.200	"
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BFK0553-BS1)

Prepared: 11/21/22 Analyzed: 11/22/22

Arsenic	45.9	0.200	mg/kg wet	40.0	115	80-120
Arsenic	45.9	0.200	"	40.0	115	80-120
Barium	36.1	0.400	"	40.0	90.3	80-120
Cadmium	1.84	0.200	"	2.00	91.9	80-120
Cadmium	1.84	0.200	"	2.00	91.9	80-120
Copper	46.6	0.400	"	40.0	116	80-120
Lead	20.5	0.200	"	20.0	103	80-120
Lead	20.5	0.200	"	20.0	103	80-120
Nickel	44.2	0.400	"	40.0	111	80-120
Selenium	4.75	0.260	"	4.00	119	80-120
Silver	1.93	0.0200	"	2.00	96.7	80-120
Zinc	44.5	0.400	"	40.0	111	80-120

Duplicate (BFK0553-DUP1)

Source: 2211348-01

Prepared: 11/21/22 Analyzed: 11/22/22

Arsenic	4.79	0.200	mg/kg dry	5.69	17.3	20
Arsenic	4.79	0.237	"	5.69	17.3	20
Barium	71.3	0.473	"	72.7	1.94	20
Cadmium	0.335	0.200	"	0.345	3.06	20
Cadmium	0.335	0.237	"	0.345	3.06	20
Copper	10.1	0.473	"	11.2	10.6	20
Lead	11.1	0.200	"	12.0	8.05	20
Lead	11.1	0.237	"	12.0	8.05	20
Nickel	10.8	0.473	"	12.1	11.7	20
Selenium	0.757	0.308	"	0.832	9.53	20
Silver	0.0497	0.0237	"	0.0573	14.2	20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BFK0553 - EPA 3050B

Duplicate (BFK0553-DUP1)			Source: 2211348-01		Prepared: 11/21/22 Analyzed: 11/22/22					
Zinc	34.8	0.473	mg/kg dry		38.5			10.2	20	

Matrix Spike (BFK0553-MS1)			Source: 2211348-01		Prepared: 11/21/22 Analyzed: 11/22/22					
Arsenic	60.2	0.200	mg/kg dry	47.3	5.69	115	75-125			
Arsenic	60.2	0.237	"	47.3	5.69	115	75-125			
Barium	206	0.473	"	47.3	72.7	281	75-125			QM-02
Cadmium	2.64	0.200	"	2.37	0.345	97.0	75-125			
Cadmium	2.64	0.237	"	2.37	0.345	97.0	75-125			
Copper	48.2	0.473	"	47.3	11.2	78.2	75-125			
Lead	32.8	0.237	"	23.7	12.0	87.6	75-125			
Lead	32.8	0.200	"	23.7	12.0	87.6	75-125			
Nickel	52.9	0.473	"	47.3	12.1	86.2	75-125			
Selenium	6.51	0.308	"	4.73	0.832	120	75-125			
Silver	2.37	0.0237	"	2.37	0.0573	97.9	75-125			
Zinc	75.8	0.473	"	47.3	38.5	78.7	75-125			

Matrix Spike Dup (BFK0553-MSD1)			Source: 2211348-01		Prepared: 11/21/22 Analyzed: 11/22/22					
Arsenic	57.9	0.200	mg/kg dry	47.3	5.69	110	75-125	3.89	25	
Arsenic	57.9	0.237	"	47.3	5.69	110	75-125	3.89	25	
Barium	163	0.473	"	47.3	72.7	191	75-125	23.1	25	QM-02
Cadmium	2.53	0.237	"	2.37	0.345	92.1	75-125	4.49	25	
Cadmium	2.53	0.200	"	2.37	0.345	92.1	75-125	4.49	25	
Copper	47.8	0.473	"	47.3	11.2	77.4	75-125	0.838	25	
Lead	31.3	0.237	"	23.7	12.0	81.4	75-125	4.59	25	
Lead	31.3	0.200	"	23.7	12.0	81.4	75-125	4.59	25	
Nickel	48.3	0.473	"	47.3	12.1	76.4	75-125	9.11	25	
Selenium	6.23	0.308	"	4.73	0.832	114	75-125	4.35	25	
Silver	2.27	0.0237	"	2.37	0.0573	93.6	75-125	4.34	25	
Zinc	77.2	0.473	"	47.3	38.5	81.7	75-125	1.85	25	

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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BFK0570 - 3060A Mod

Blank (BFK0570-BLK1)

Prepared & Analyzed: 11/22/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFK0570-BS1)

Prepared & Analyzed: 11/22/22

Chromium, Hexavalent 23.8 0.30 mg/kg wet 25.0 95.2 80-120

Duplicate (BFK0570-DUP1)

Source: 2211348-01

Prepared & Analyzed: 11/22/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFK0570-MS1)

Source: 2211348-01

Prepared & Analyzed: 11/22/22

Chromium, Hexavalent 29.6 0.30 mg/kg dry 29.6 ND 100 75-125

Matrix Spike Dup (BFK0570-MSD1)

Source: 2211348-01

Prepared & Analyzed: 11/22/22

Chromium, Hexavalent 30.1 0.30 mg/kg dry 29.6 ND 102 75-125 1.58 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

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 BFK0562 - General Preparation

Duplicate (BFK0562-DUP1)			Source: 2211336-01		Prepared & Analyzed: 11/22/22					
% Solids	94.5		%		94.3			0.227	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/28/22 16:59

Notes and Definitions

QM-02	The RPD and/or percent recovery for this QC sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
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

November 29, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211391

Enclosed are the results of analyses for samples received by Summit Scientific on 11/22/22 17:27. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS50@5'	2211391-01	Soil	11/22/22 10:27	11/22/22 17:27
SS51@10.5'	2211391-02	Soil	11/22/22 10:50	11/22/22 17:27
SS52@14.5'	2211391-03	Soil	11/22/22 11:00	11/22/22 17:27
SS53@14.5'	2211391-04	Soil	11/22/22 11:15	11/22/22 17:27
SS55@2.5'	2211391-05	Soil	11/22/22 13:40	11/22/22 17:27
SS54@2.5'	2211391-06	Soil	11/22/22 13:45	11/22/22 17:27

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

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

2211391

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: Totems 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915	+	
1	SS50e5'	11/22/22	1027	3			X			X				X	X			X		X	
2	SS51e10.5'		1050	1																	
3	SS52e14.5'		1100	1																	
4	SS53e14.5'		1115	1																	
5	SS54e2.5'		1340	1											X	X				samples labeled the same-which is which?	
6	SS55e2.5'		1345	1											X	X					
7																					
8																					
9																					
10																					

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes: + Fluorene, 1-M, 2-M * Arsenic, Lead, Cadmium
<i>Aaron Otilar</i>	11/22/22 1600	<i>Tasman Labbox</i>	11/22/22 1600	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
<i>Tasman Labbox</i>	11/22/22 1727	<i>[Signature]</i>	11/22/22 1727	48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>8.1</u>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

S₂

Sample Receipt Checklist

S2 Work Order# 2211391Client: Bel TasmanClient Project ID: Totems 44-24 Tanks BottomShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #: _____

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

Matrix (Check all that apply)

Air ☐Soil/Solid ☒Water ☐Other ☐

Temp (°C)

8.1

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>arrived</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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

2211391
 Date/Time



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS50@5'
2211391-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0578	11/22/22	11/22/22	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: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.9 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0579	11/22/22	11/22/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS50@5'
2211391-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0583	11/23/22	11/24/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		54.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.09	0.200	mg/kg dry	1	BFK0580	11/22/22	11/23/22	EPA 6020B	
Cadmium	0.325	0.200	"	"	"	"	"	"	
Lead	13.5	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/22/22 10:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.0		%	1	BFK0600	11/23/22	11/23/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS51@10.5'
2211391-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0578	11/22/22	11/22/22	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: **11/22/22 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0579	11/22/22	11/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS51@10.5'
2211391-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0583	11/23/22	11/24/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		53.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.33	0.200	mg/kg dry	1	BFK0580	11/22/22	11/23/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.1	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/22/22 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.4		%	1	BFK0600	11/23/22	11/23/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS52@14.5'
2211391-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0578	11/22/22	11/22/22	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: **11/22/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		93.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0579	11/22/22	11/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS52@14.5'
2211391-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0583	11/23/22	11/24/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		68.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.02	0.200	mg/kg dry	1	BFK0580	11/22/22	11/23/22	EPA 6020B	
Cadmium	0.255	0.200	"	"	"	"	"	"	
Lead	10.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/22/22 11:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BFK0600	11/23/22	11/23/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS53@14.5'
2211391-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0578	11/22/22	11/23/22	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: **11/22/22 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0579	11/22/22	11/23/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS53@14.5'
2211391-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0583	11/23/22	11/24/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		45.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.18	0.200	mg/kg dry	1	BFK0580	11/22/22	11/23/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	12.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BFK0600	11/23/22	11/23/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS55@2.5'
2211391-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.667	0.0100	mg/L	1	BFK0608	11/26/22	11/27/22	EPA 6020B	

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

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	186	0.0601	mg/L dry	1	BFK0577	11/22/22	11/24/22	EPA 6020B	
Magnesium	397	0.0601	"	"	"	"	"	"	
Sodium	2650	0.0601	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	25.2	0.00100	units	1	BFK0632	11/28/22	11/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BFK0600	11/23/22	11/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.78	0.0100	mmhos/cm	1	BFK0594	11/23/22	11/23/22	EPA 120.1	

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

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS55@2.5'
2211391-05 (Soil)

Summit Scientific

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

Date Sampled: **11/22/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.35			pH Units	1	BFK0595	11/23/22	11/23/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS54@2.5'
2211391-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.625	0.0100	mg/L	1	BFK0608	11/26/22	11/27/22	EPA 6020B	

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

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	277	0.0595	mg/L dry	1	BFK0577	11/22/22	11/24/22	EPA 6020B	
Magnesium	319	0.0595	"	"	"	"	"	"	
Sodium	1470	0.0595	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	14.3	0.00100	units	1	BFK0632	11/28/22	11/28/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BFK0600	11/23/22	11/23/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.48	0.0100	mmhos/cm	1	BFK0594	11/23/22	11/23/22	EPA 120.1	

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

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

SS54@2.5'
2211391-06 (Soil)

Summit Scientific

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

Date Sampled: **11/22/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.15			pH Units	1	BFK0595	11/23/22	11/23/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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 BFK0578 - EPA 5030 Soil MS

Blank (BFK0578-BLK1)

Prepared: 11/22/22 Analyzed: 11/23/22

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	0.0362		"	0.0400		90.4	50-150			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	50-150			

LCS (BFK0578-BS1)

Prepared: 11/22/22 Analyzed: 11/23/22

Benzene	0.0733	0.0020	mg/kg	0.100		73.3	70-130			
Toluene	0.0734	0.0050	"	0.100		73.4	70-130			
Ethylbenzene	0.0701	0.0050	"	0.100		70.1	70-130			
m,p-Xylene	0.144	0.010	"	0.200		71.9	70-130			
o-Xylene	0.0712	0.0050	"	0.100		71.2	70-130			
1,2,4-Trimethylbenzene	0.0724	0.0050	"	0.100		72.4	70-130			
1,3,5-Trimethylbenzene	0.0729	0.0050	"	0.100		72.9	70-130			
Naphthalene	0.0813	0.0038	"	0.100		81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.6	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	50-150			

Matrix Spike (BFK0578-MS1)

Source: 2211366-01

Prepared: 11/22/22 Analyzed: 11/23/22

Benzene	0.0869	0.0020	mg/kg	0.100	ND	86.9	70-130			
Toluene	0.0736	0.0050	"	0.100	ND	73.6	70-130			
Ethylbenzene	0.0742	0.0050	"	0.100	ND	74.2	70-130			
m,p-Xylene	0.152	0.010	"	0.200	ND	76.2	70-130			
o-Xylene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
1,2,4-Trimethylbenzene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
1,3,5-Trimethylbenzene	0.0760	0.0050	"	0.100	ND	76.0	70-130			
Naphthalene	0.0956	0.0038	"	0.100	ND	95.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0400		74.6	50-150			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.3	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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 BFK0578 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0578-MSD1)	Source: 2211366-01			Prepared: 11/22/22 Analyzed: 11/23/22						
Benzene	0.0740	0.0020	mg/kg	0.100	ND	74.0	70-130	16.1	30	
Toluene	0.0731	0.0050	"	0.100	ND	73.1	70-130	0.695	30	
Ethylbenzene	0.0706	0.0050	"	0.100	ND	70.6	70-130	4.89	30	
m,p-Xylene	0.146	0.010	"	0.200	ND	73.1	70-130	4.22	30	
o-Xylene	0.0732	0.0050	"	0.100	ND	73.2	70-130	2.55	30	
1,2,4-Trimethylbenzene	0.0748	0.0050	"	0.100	ND	74.8	70-130	0.360	30	
1,3,5-Trimethylbenzene	0.0743	0.0050	"	0.100	ND	74.3	70-130	2.31	30	
Naphthalene	0.0945	0.0038	"	0.100	ND	94.5	70-130	1.07	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.2	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.7	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0579 - EPA 3550A

Blank (BFK0579-BLK1)

Prepared: 11/22/22 Analyzed: 11/23/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.2		"	12.5		97.9	30-150			

LCS (BFK0579-BS1)

Prepared: 11/22/22 Analyzed: 11/23/22

C10-C28 (DRO)	458	50	mg/kg	500		91.7	70-130			
Surrogate: o-Terphenyl	13.3		"	12.5		106	30-150			

Matrix Spike (BFK0579-MS1)

Source: 2211366-01

Prepared: 11/22/22 Analyzed: 11/23/22

C10-C28 (DRO)	420	50	mg/kg	500	44.6	75.1	70-130			
Surrogate: o-Terphenyl	12.6		"	12.5		101	30-150			

Matrix Spike Dup (BFK0579-MSD1)

Source: 2211366-01

Prepared: 11/22/22 Analyzed: 11/23/22

C10-C28 (DRO)	410	50	mg/kg	500	44.6	73.0	70-130	2.61	20	
Surrogate: o-Terphenyl	12.3		"	12.5		98.5	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0583 - EPA 5030 Soil MS

Blank (BFK0583-BLK1)

Prepared & Analyzed: 11/23/22

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	0.0361	"	0.0333	108	40-150
Surrogate: Fluoranthene-d10	0.0283	"	0.0333	84.9	40-150

LCS (BFK0583-BS1)

Prepared & Analyzed: 11/23/22

Acenaphthene	0.0390	0.00500	mg/kg	0.0333	117	31-137
Anthracene	0.0352	0.00500	"	0.0333	106	30-120
Benzo (a) anthracene	0.0278	0.00500	"	0.0333	83.5	30-120
Benzo (a) pyrene	0.0371	0.00500	"	0.0333	111	30-120
Benzo (b) fluoranthene	0.0362	0.00500	"	0.0333	109	30-120
Benzo (k) fluoranthene	0.0359	0.00500	"	0.0333	108	30-120
Chrysene	0.0307	0.00500	"	0.0333	92.2	30-120
Dibenz (a,h) anthracene	0.0269	0.00500	"	0.0333	80.8	30-120
Fluoranthene	0.0378	0.00500	"	0.0333	113	30-120
Fluorene	0.0358	0.00500	"	0.0333	108	30-120
Indeno (1,2,3-cd) pyrene	0.0245	0.00500	"	0.0333	73.5	30-120
Pyrene	0.0298	0.00500	"	0.0333	89.5	35-142
1-Methylnaphthalene	0.0311	0.00500	"	0.0333	93.4	35-142
2-Methylnaphthalene	0.0332	0.00500	"	0.0333	99.7	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0326	"	0.0333	97.9	40-150
Surrogate: Fluoranthene-d10	0.0398	"	0.0333	119	40-150

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0583 - EPA 5030 Soil MS

Matrix Spike (BKF0583-MS1)

Source: 2211391-01

Prepared & Analyzed: 11/23/22

Acenaphthene	0.0161	0.00500	mg/kg	0.0333	ND	48.2	31-137		
Anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120		
Benzo (a) anthracene	0.0133	0.00500	"	0.0333	ND	40.0	30-120		
Benzo (a) pyrene	0.0161	0.00500	"	0.0333	ND	48.3	30-120		
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120		
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120		
Chrysene	0.0138	0.00500	"	0.0333	ND	41.4	30-120		
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	41.9	30-120		
Fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120		
Fluorene	0.0181	0.00500	"	0.0333	ND	54.3	30-120		
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.7	30-120		
Pyrene	0.0139	0.00500	"	0.0333	ND	41.8	35-142		
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.2	15-130		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0145		"	0.0333		43.6	40-150		
Surrogate: Fluoranthene-d10	0.0143		"	0.0333		42.8	40-150		

Matrix Spike Dup (BKF0583-MSD1)

Source: 2211391-01

Prepared & Analyzed: 11/23/22

Acenaphthene	0.0147	0.00500	mg/kg	0.0333	ND	44.2	31-137	8.68	30
Anthracene	0.0138	0.00500	"	0.0333	ND	41.3	30-120	2.89	30
Benzo (a) anthracene	0.0148	0.00500	"	0.0333	ND	44.5	30-120	10.6	30
Benzo (a) pyrene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	14.3	30
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.0	30-120	9.79	30
Benzo (k) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.6	30-120	21.4	30
Chrysene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	7.72	30
Dibenz (a,h) anthracene	0.0172	0.00500	"	0.0333	ND	51.6	30-120	20.7	30
Fluoranthene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	7.70	30
Fluorene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	6.32	30
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.6	30-120	0.226	30
Pyrene	0.0162	0.00500	"	0.0333	ND	48.5	35-142	14.9	30
1-Methylnaphthalene	0.0137	0.00500	"	0.0333	ND	41.1	15-130	7.24	50
2-Methylnaphthalene	0.0150	0.00500	"	0.0333	ND	45.1	15-130	11.0	50
Surrogate: 2-Methylnaphthalene-d10	0.0149		"	0.0333		44.6	40-150		
Surrogate: Fluoranthene-d10	0.0147		"	0.0333		44.1	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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

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

Batch BFK0608 - EPA 3050B

Blank (BFK0608-BLK1)

Prepared & Analyzed: 11/26/22

Boron ND 0.0100 mg/L

LCS (BFK0608-BS1)

Prepared: 11/26/22 Analyzed: 11/27/22

Boron 5.90 0.0100 mg/L 5.00 118 80-120

Duplicate (BFK0608-DUP1)

Source: 2211375-02

Prepared: 11/26/22 Analyzed: 11/27/22

Boron 0.995 0.0100 mg/L 1.04 4.41 20

Matrix Spike (BFK0608-MS1)

Source: 2211375-02

Prepared: 11/26/22 Analyzed: 11/27/22

Boron 5.65 0.0100 mg/L 5.00 1.04 92.3 75-125

Matrix Spike Dup (BFK0608-MSD1)

Source: 2211375-02

Prepared: 11/26/22 Analyzed: 11/27/22

Boron 5.69 0.0100 mg/L 5.00 1.04 93.0 75-125 0.608 25

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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0580 - EPA 3050B

Blank (BFK0580-BLK1)

Prepared: 11/22/22 Analyzed: 11/23/22

Arsenic	ND	0.200	mg/kg wet
Cadmium	ND	0.200	"
Lead	ND	0.200	"

LCS (BFK0580-BS1)

Prepared: 11/22/22 Analyzed: 11/23/22

Arsenic	36.9	0.200	mg/kg wet	40.0	92.2	80-120
Cadmium	1.96	0.200	"	2.00	97.9	80-120
Lead	23.7	0.200	"	20.0	119	80-120

Duplicate (BFK0580-DUP1)

Source: 2211391-01

Prepared: 11/22/22 Analyzed: 11/23/22

Arsenic	5.27	0.200	mg/kg dry	5.09	3.44	20
Cadmium	0.330	0.200	"	0.325	1.38	20
Lead	13.6	0.200	"	13.5	0.672	20

Matrix Spike (BFK0580-MS1)

Source: 2211391-01

Prepared: 11/22/22 Analyzed: 11/23/22

Arsenic	47.4	0.200	mg/kg dry	50.0	5.09	84.6	75-125
Cadmium	2.44	0.200	"	2.50	0.325	84.6	75-125
Lead	35.3	0.200	"	25.0	13.5	87.1	75-125

Matrix Spike Dup (BFK0580-MSD1)

Source: 2211391-01

Prepared: 11/22/22 Analyzed: 11/23/22

Arsenic	48.4	0.200	mg/kg dry	50.0	5.09	86.6	75-125	2.09	25
Cadmium	2.59	0.200	"	2.50	0.325	90.4	75-125	5.81	25
Lead	36.2	0.200	"	25.0	13.5	90.6	75-125	2.45	25

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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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 BFK0577 - General Preparation

Blank (BFK0577-BLK1)

Prepared: 11/22/22 Analyzed: 11/24/22

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

LCS (BFK0577-BS1)

Prepared: 11/22/22 Analyzed: 11/24/22

Calcium	4.32	0.0500	mg/L wet	5.00	86.3	70-130
Magnesium	4.26	0.0500	"	5.00	85.3	70-130
Sodium	4.32	0.0500	"	5.00	86.4	70-130

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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 BFK0600 - General Preparation

Duplicate (BFK0600-DUP1)		Source: 2211391-01		Prepared & Analyzed: 11/23/22						
% Solids	80.1		%		80.0			0.183	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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

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

Batch BFK0594 - General Preparation

Blank (BFK0594-BLK1)

Prepared & Analyzed: 11/23/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0594-BS1)

Prepared & Analyzed: 11/23/22

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.1 95-105

Duplicate (BFK0594-DUP1)

Source: 2211366-05

Prepared & Analyzed: 11/23/22

Specific Conductance (EC) 1.62 0.0100 mmhos/cm 1.64 1.23 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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 BFK0595 - General Preparation

LCS (BFK0595-BS1)

Prepared & Analyzed: 11/23/22

pH	9.11	pH Units	9.18	99.2	95-105
----	------	----------	------	------	--------

Duplicate (BFK0595-DUP1)

Source: 2211366-05

Prepared & Analyzed: 11/23/22

pH	7.70	pH Units	7.70	0.00	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
11/29/22 14:38

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

December 01, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2211451

Enclosed are the results of analyses for samples received by Summit Scientific on 11/28/22 17:15. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS57@5'	2211451-01	Soil	11/28/22 11:37	11/28/22 17:15
SS58@10.5'	2211451-02	Soil	11/28/22 11:40	11/28/22 17:15
SS59@14.5'	2211451-03	Soil	11/28/22 11:57	11/28/22 17:15
SS60@14.5'	2211451-04	Soil	11/28/22 12:05	11/28/22 17:15
SS61@2.5'	2211451-05	Soil	11/28/22 14:20	11/28/22 17:15
SS62@5'	2211451-06	Soil	11/28/22 14:25	11/28/22 17:15
SS63@10.5'	2211451-07	Soil	11/28/22 14:30	11/28/22 17:15
SS64@14.5'	2211451-08	Soil	11/28/22 14:35	11/28/22 17:15

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

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

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

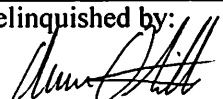
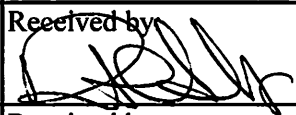
Phone: 303-487-1228

Project Name: Totems 44-24 Tanks Battery

Sampler Name: Aaron Otilar

Project Number: NA

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915 A	+	
1	SS57@5'	11/28/22	1137	3			X			X				X	X			X		X	
2	SS58@10.5'		1140	1																	
3	SS59@14.5'		1157	1																	
4	SS60@14.5'		1205	1																	
5	SS61@2.5'		1420	1											X	X					
6	SS62@5'		1425	3										X	X		X		X	X	
7	SS63@10.5'		1430	1																	
8	SS64@14.5'		1435	1																	
9																					
10																					

Relinquished by: 	Date/Time: 11/28/22 1630	Received by: Tasman Lockbox	Date/Time: 11/28/22 1630	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 79 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes: +: Fluorene, 1-M, 2-M *: Arsenic, Lead, Cadmium
Relinquished by: Tasman Lockbox	Date/Time: 11/28/22 1715	Received by: 	Date/Time: 11/28/22 1715		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2211451Client: Ppc/AsmanClient Project ID: Totems 44-24 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)

79

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"/>	on Ice
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11-28-22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS57@5'
2211451-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS57@5'
2211451-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.66	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	0.492	0.200	"	"	"	"	"	"	
Lead	15.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.3		%	1	BFK0658	11/29/22	11/29/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS58@10.5'
2211451-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS58@10.5'
2211451-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.14	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	12.5	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.1		%	1	BFK0658	11/29/22	11/29/22	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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS59@14.5'
2211451-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS59@14.5'
2211451-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.11	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	8.03	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 11:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	1	BFK0658	11/29/22	11/29/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS60@14.5'
2211451-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS60@14.5'
2211451-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		78.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.88	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	9.95	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	BFK0658	11/29/22	11/29/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS61@2.5'
2211451-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.364	0.0100	mg/L	1	BFK0659	11/29/22	11/30/22	EPA 6020B	

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

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.5	0.0598	mg/L dry	1	BFK0638	11/28/22	12/01/22	EPA 6020B	
Magnesium	91.9	0.0598	"	"	"	"	"	"	
Sodium	978	0.0598	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	19.2	0.00100	units	1	BFL0022	12/01/22	12/01/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BFK0658	11/29/22	11/29/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.99	0.0100	mmhos/cm	1	BFK0656	11/29/22	11/29/22	EPA 120.1	

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

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS61@2.5'
2211451-05 (Soil)

Summit Scientific

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

Date Sampled: **11/28/22 14:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.40			pH Units	1	BFK0657	11/29/22	11/29/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS62@5'
2211451-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		89.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS62@5'
2211451-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		60.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.15	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	0.334	0.200	"	"	"	"	"	"	
Lead	15.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.4		%	1	BFK0658	11/29/22	11/29/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS63@10.5'
2211451-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS63@10.5'
2211451-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		59.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.703	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	10.6	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	1	BFK0658	11/29/22	11/29/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS64@14.5'
2211451-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0650	11/28/22	11/28/22	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: **11/28/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0651	11/28/22	11/28/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		84.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

SS64@14.5'
2211451-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFK0660	11/29/22	11/30/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		86.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.957	0.200	mg/kg dry	1	BFK0662	11/29/22	11/30/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	9.89	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/28/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BFK0658	11/29/22	11/29/22	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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 BFK0650 - EPA 5030 Soil MS

Blank (BFK0650-BLK1)

Prepared & Analyzed: 11/28/22

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	0.0403		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	50-150			

LCS (BFK0650-BS1)

Prepared: 11/28/22 Analyzed: 11/29/22

Benzene	0.154	0.0020	mg/kg	0.150		102	70-130			
Toluene	0.148	0.0050	"	0.150		98.7	70-130			
Ethylbenzene	0.134	0.0050	"	0.150		89.0	70-130			
m,p-Xylene	0.273	0.010	"	0.300		90.8	70-130			
o-Xylene	0.144	0.0050	"	0.150		96.0	70-130			
1,2,4-Trimethylbenzene	0.141	0.0050	"	0.150		93.9	70-130			
1,3,5-Trimethylbenzene	0.138	0.0050	"	0.150		92.2	70-130			
Naphthalene	0.136	0.0038	"	0.150		90.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	50-150			

Matrix Spike (BFK0650-MS1)

Source: 2211451-01

Prepared: 11/28/22 Analyzed: 11/29/22

Benzene	0.152	0.0020	mg/kg	0.150	ND	102	70-130			
Toluene	0.145	0.0050	"	0.150	ND	96.6	70-130			
Ethylbenzene	0.125	0.0050	"	0.150	ND	83.1	70-130			
m,p-Xylene	0.251	0.010	"	0.300	ND	83.6	70-130			
o-Xylene	0.134	0.0050	"	0.150	ND	89.0	70-130			
1,2,4-Trimethylbenzene	0.128	0.0050	"	0.150	ND	85.3	70-130			
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.150	ND	84.0	70-130			
Naphthalene	0.128	0.0038	"	0.150	ND	85.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0434		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		97.9	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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 BFK0650 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0650-MSD1)		Source: 2211451-01			Prepared: 11/28/22 Analyzed: 11/29/22					
Benzene	0.144	0.0020	mg/kg	0.150	ND	95.9	70-130	5.79	30	
Toluene	0.138	0.0050	"	0.150	ND	92.2	70-130	4.62	30	
Ethylbenzene	0.120	0.0050	"	0.150	ND	80.1	70-130	3.63	30	
m,p-Xylene	0.242	0.010	"	0.300	ND	80.5	70-130	3.73	30	
o-Xylene	0.129	0.0050	"	0.150	ND	85.7	70-130	3.78	30	
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.150	ND	81.6	70-130	4.41	30	
1,3,5-Trimethylbenzene	0.119	0.0050	"	0.150	ND	79.6	70-130	5.43	30	
Naphthalene	0.122	0.0038	"	0.150	ND	81.1	70-130	5.19	30	
Surrogate: 1,2-Dichloroethane-d4		0.0431	"	0.0400		108	50-150			
Surrogate: Toluene-d8		0.0411	"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene		0.0395	"	0.0400		98.8	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0651 - EPA 3550A

Blank (BFK0651-BLK1)

Prepared & Analyzed: 11/28/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	11.6		"	12.5		92.4	30-150			

LCS (BFK0651-BS1)

Prepared: 11/28/22 Analyzed: 11/29/22

C10-C28 (DRO)	493	50	mg/kg	500		98.5	70-130			
Surrogate: o-Terphenyl	11.7		"	12.5		93.3	30-150			

Matrix Spike (BFK0651-MS1)

Source: 2211451-01

Prepared: 11/28/22 Analyzed: 11/29/22

C10-C28 (DRO)	407	50	mg/kg	500	27.4	75.9	70-130			
Surrogate: o-Terphenyl	12.1		"	12.5		96.7	30-150			

Matrix Spike Dup (BFK0651-MSD1)

Source: 2211451-01

Prepared: 11/28/22 Analyzed: 11/29/22

C10-C28 (DRO)	403	50	mg/kg	500	27.4	75.1	70-130	1.07	20	
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0660 - EPA 5030 Soil MS

LCS (BKF0660-BS1)

Prepared & Analyzed: 11/29/22

Acenaphthene	0.0357	0.00500	mg/kg	0.0333		107	31-137
Anthracene	0.0345	0.00500	"	0.0333		103	30-120
Benzo (a) anthracene	0.0281	0.00500	"	0.0333		84.4	30-120
Benzo (a) pyrene	0.0287	0.00500	"	0.0333		86.2	30-120
Benzo (b) fluoranthene	0.0297	0.00500	"	0.0333		89.2	30-120
Benzo (k) fluoranthene	0.0388	0.00500	"	0.0333		116	30-120
Chrysene	0.0336	0.00500	"	0.0333		101	30-120
Dibenz (a,h) anthracene	0.0305	0.00500	"	0.0333		91.4	30-120
Fluoranthene	0.0365	0.00500	"	0.0333		109	30-120
Fluorene	0.0332	0.00500	"	0.0333		99.7	30-120
Indeno (1,2,3-cd) pyrene	0.0336	0.00500	"	0.0333		101	30-120
Pyrene	0.0325	0.00500	"	0.0333		97.4	35-142
1-Methylnaphthalene	0.0313	0.00500	"	0.0333		93.8	35-142
2-Methylnaphthalene	0.0322	0.00500	"	0.0333		96.5	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0311		"	0.0333		93.3	40-150
Surrogate: Fluoranthene-d10	0.0266		"	0.0333		79.8	40-150

Matrix Spike (BKF0660-MS1)

Source: 2211451-01

Prepared & Analyzed: 11/29/22

Acenaphthene	0.0285	0.00500	mg/kg	0.0333	ND	85.4	31-137
Anthracene	0.0251	0.00500	"	0.0333	ND	75.4	30-120
Benzo (a) anthracene	0.0222	0.00500	"	0.0333	ND	66.5	30-120
Benzo (a) pyrene	0.0217	0.00500	"	0.0333	ND	65.1	30-120
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.6	30-120
Benzo (k) fluoranthene	0.0283	0.00500	"	0.0333	ND	84.9	30-120
Chrysene	0.0247	0.00500	"	0.0333	ND	74.0	30-120
Dibenz (a,h) anthracene	0.0242	0.00500	"	0.0333	ND	72.7	30-120
Fluoranthene	0.0262	0.00500	"	0.0333	ND	78.6	30-120
Fluorene	0.0228	0.00500	"	0.0333	ND	68.4	30-120
Indeno (1,2,3-cd) pyrene	0.0260	0.00500	"	0.0333	ND	78.0	30-120
Pyrene	0.0247	0.00500	"	0.0333	ND	74.2	35-142
1-Methylnaphthalene	0.0234	0.00500	"	0.0333	ND	70.1	15-130
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.7	40-150
Surrogate: Fluoranthene-d10	0.0249		"	0.0333		74.8	40-150

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0660 - EPA 5030 Soil MS

Matrix Spike Dup (BKF0660-MSD1)		Source: 2211451-01			Prepared & Analyzed: 11/29/22					
Acenaphthene	0.0206	0.00500	mg/kg	0.0333	ND	61.9	31-137	31.8	30	QR-02
Anthracene	0.0200	0.00500	"	0.0333	ND	59.9	30-120	23.0	30	
Benzo (a) anthracene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	21.4	30	
Benzo (a) pyrene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	26.3	30	
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	27.7	30	
Benzo (k) fluoranthene	0.0210	0.00500	"	0.0333	ND	63.1	30-120	29.3	30	
Chrysene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	22.1	30	
Dibenz (a,h) anthracene	0.0201	0.00500	"	0.0333	ND	60.4	30-120	18.5	30	
Fluoranthene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	24.0	30	
Fluorene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	17.7	30	
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333	ND	60.3	30-120	25.6	30	
Pyrene	0.0192	0.00500	"	0.0333	ND	57.7	35-142	25.0	30	
1-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.5	15-130	9.85	50	
2-Methylnaphthalene	0.0219	0.00500	"	0.0333	ND	65.7	15-130	1.01	50	
Surrogate: 2-Methylnaphthalene-d10	0.0204		"	0.0333		61.2	40-150			
Surrogate: Fluoranthene-d10	0.0190		"	0.0333		56.9	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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

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

Batch BFK0659 - EPA 3050B

Blank (BFK0659-BLK1)

Prepared: 11/29/22 Analyzed: 11/30/22

Boron ND 0.0100 mg/L

LCS (BFK0659-BS1)

Prepared: 11/29/22 Analyzed: 11/30/22

Boron 4.66 0.0100 mg/L 5.00 93.2 80-120

Duplicate (BFK0659-DUP1)

Source: 2211406-01

Prepared: 11/29/22 Analyzed: 11/30/22

Boron 0.0488 0.0100 mg/L 0.0552 12.3 20

Matrix Spike (BFK0659-MS1)

Source: 2211406-01

Prepared: 11/29/22 Analyzed: 11/30/22

Boron 5.94 0.0100 mg/L 5.00 0.0552 118 75-125

Matrix Spike Dup (BFK0659-MSD1)

Source: 2211406-01

Prepared: 11/29/22 Analyzed: 11/30/22

Boron 4.71 0.0100 mg/L 5.00 0.0552 93.1 75-125 23.2 25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFK0662 - EPA 3050B

Blank (BFK0662-BLK1)

Prepared: 11/29/22 Analyzed: 11/30/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFK0662-BS1)

Prepared: 11/29/22 Analyzed: 11/30/22

Arsenic	39.2	0.200	mg/kg wet	40.0		98.1	80-120			
Cadmium	1.99	0.200	"	2.00		99.3	80-120			
Lead	23.5	0.200	"	20.0		117	80-120			

Duplicate (BFK0662-DUP1)

Source: 2211256-02

Prepared: 11/29/22 Analyzed: 11/30/22

Arsenic	3.09	0.200	mg/kg dry		2.42			24.5	20	QR-03
Cadmium	0.270	0.200	"		0.264			2.19	20	
Lead	11.8	0.200	"		12.2			2.89	20	

Matrix Spike (BFK0662-MS1)

Source: 2211256-02

Prepared: 11/29/22 Analyzed: 11/30/22

Arsenic	46.5	0.200	mg/kg dry	48.8	2.42	90.5	75-125			
Cadmium	2.41	0.200	"	2.44	0.264	88.0	75-125			
Lead	31.9	0.200	"	24.4	12.2	80.9	75-125			

Matrix Spike Dup (BFK0662-MSD1)

Source: 2211256-02

Prepared: 11/29/22 Analyzed: 11/30/22

Arsenic	47.4	0.200	mg/kg dry	48.8	2.42	92.2	75-125	1.80	25	
Cadmium	2.52	0.200	"	2.44	0.264	92.5	75-125	4.49	25	
Lead	33.7	0.200	"	24.4	12.2	88.5	75-125	5.68	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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 BFK0638 - General Preparation

Blank (BFK0638-BLK1)

Prepared: 11/28/22 Analyzed: 12/01/22

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

LCS (BFK0638-BS1)

Prepared: 11/28/22 Analyzed: 12/01/22

Calcium	4.29	0.0500	mg/L wet	5.00	85.8	70-130
Magnesium	4.42	0.0500	"	5.00	88.5	70-130
Sodium	4.37	0.0500	"	5.00	87.4	70-130

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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 BFK0658 - General Preparation

Duplicate (BFK0658-DUP1)		Source: 2211256-02		Prepared & Analyzed: 11/29/22						
% Solids	83.0		%		82.0			1.20		20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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

Summit Scientific

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

Batch BFK0656 - General Preparation

Blank (BFK0656-BLK1)

Prepared & Analyzed: 11/29/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0656-BS1)

Prepared & Analyzed: 11/29/22

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BFK0656-DUP1)

Source: 2211372-02

Prepared & Analyzed: 11/29/22

Specific Conductance (EC) 2.01 0.0100 mmhos/cm 2.12 5.42 20

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

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 BFK0657 - General Preparation

LCS (BFK0657-BS1)

Prepared & Analyzed: 11/29/22

pH	9.06	pH Units	9.18	98.7	95-105
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Duplicate (BFK0657-DUP1)

Source: 2211372-02

Prepared & Analyzed: 11/29/22

pH	9.22	pH Units	9.27	0.541	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/01/22 13:18

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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 80401

303.277.9310

December 02, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order # 2211493

Enclosed are the results of analyses for samples received by Summit Scientific on 11/30/22 17:46. 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS65@2.5'	2211493-01	Soil	11/30/22 14:30	11/30/22 17:46
SS66@5'	2211493-02	Soil	11/30/22 14:35	11/30/22 17:46
SS67@10.5'	2211493-03	Soil	11/30/22 14:40	11/30/22 17:46
SS68@14.5'	2211493-04	Soil	11/30/22 14:45	11/30/22 17:46
SS69@14.5'	2211493-05	Soil	11/30/22 14:50	11/30/22 17:46

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.

2211493

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

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: Totems 44-24 Tanks Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMB's(1,2,4)&(1,3,5)	PAH - 915	Metals - 915			
1	SS65 @ 2.5'	11/30/22	1430	1			X			X						X	X					
2	SS66 @ 5'		1435	3										X	X			X		X		
3	SS67 @ 10.5'		1440	1																		
4	SS68 @ 14.5'		1445	1																		
5	SS69 @ 14.5'		1450	1																		
6																						
7																						
8																						
9																						
10																						

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
<i>Aaron Otilar</i>	11/30/22 1640	<i>Tasman Lockbox</i>	11/30/22 1640	Same Day	<input checked="" type="checkbox"/> 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	<input type="checkbox"/> Standard	
<i>Tasman Lockbox</i>	11/30/22 1746	<i>[Signature]</i>	11/30/22 1746	48 hours	<input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	<i>t: Fluorene, 1-M, 2-M</i> <i>* Arsenic, Cadmium, Lead</i>
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	7.4	

S₂

Sample Receipt Checklist

S2 Work Order# 2211493Client: Doc/Tasman Client Project ID: Totems 44-24 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"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 7.4Thermometer # 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>Ch. 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

11.30.22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS65@2.5'
2211493-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.588	0.0100		mg/L	1	BFL0021	12/01/22	12/02/22	EPA 6020B	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	122	0.0592		mg/L dry	1	BFK0706	11/30/22	12/02/22	EPA 6020B	
Magnesium	80.0	0.0592		"	"	"	"	"	"	
Sodium	548	0.0592		"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.47	0.00100		units	1	BFL0052	12/02/22	12/02/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.5			%	1	BFL0030	12/01/22	12/01/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.02	0.0100		mmhos/cm	1	BFL0014	12/01/22	12/01/22	EPA 120.1	

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

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS65@2.5'
2211493-01 (Soil)

Summit Scientific

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.11			pH Units	1	BFL0015	12/01/22	12/01/22	EPA 9045D	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS66@5'
2211493-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0708	11/30/22	11/30/22	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: **11/30/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0709	11/30/22	11/30/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		91.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS66@5'
2211493-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500		mg/kg	1	BFL0001	12/01/22	12/02/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.38	0.200		mg/kg dry	1	BFL0013	12/01/22	12/01/22	EPA 6020B	
Cadmium	0.297	0.200		"	"	"	"	"	"	
Lead	11.2	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/30/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.3			%	1	BFL0030	12/01/22	12/01/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS67@10.5'
2211493-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0708	11/30/22	11/30/22	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: **11/30/22 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0709	11/30/22	11/30/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS67@10.5'
2211493-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500		mg/kg	1	BFL0001	12/01/22	12/02/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.65	0.200		mg/kg dry	1	BFL0013	12/01/22	12/01/22	EPA 6020B	
Cadmium	0.357	0.200		"	"	"	"	"	"	
Lead	10.2	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/30/22 14:40**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.7			%	1	BFL0030	12/01/22	12/01/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS68@14.5'
2211493-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0708	11/30/22	11/30/22	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: **11/30/22 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0709	11/30/22	11/30/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		93.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS68@14.5'
2211493-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500		mg/kg	1	BFL0001	12/01/22	12/02/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.7 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.778	0.200		mg/kg dry	1	BFL0013	12/01/22	12/01/22	EPA 6020B	
Cadmium	ND	0.200		"	"	"	"	"	"	
Lead	8.11	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/30/22 14:45**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.4			%	1	BFL0030	12/01/22	12/01/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS69@14.5'
2211493-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0708	11/30/22	11/30/22	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: **11/30/22 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0709	11/30/22	12/01/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		91.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

SS69@14.5'
2211493-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500		mg/kg	1	BFL0001	12/01/22	12/02/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.82	0.200		mg/kg dry	1	BFL0013	12/01/22	12/01/22	EPA 6020B	
Cadmium	ND	0.200		"	"	"	"	"	"	
Lead	6.94	0.200		"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/30/22 14:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.6			%	1	BFL0030	12/01/22	12/01/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFK0708 - EPA 5030 Soil MS

Blank (BFK0708-BLK1)

Prepared: 11/30/22 Analyzed: 12/01/22

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	0.0405		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		105	50-150			

LCS (BFK0708-BS1)

Prepared: 11/30/22 Analyzed: 12/01/22

Benzene	0.0932	0.0020	mg/kg	0.125		74.5	70-130			
Toluene	0.120	0.0050	"	0.125		95.9	70-130			
Ethylbenzene	0.140	0.0050	"	0.125		112	70-130			
m,p-Xylene	0.281	0.010	"	0.250		112	70-130			
o-Xylene	0.134	0.0050	"	0.125		107	70-130			
1,2,4-Trimethylbenzene	0.154	0.0050	"	0.125		123	70-130			
1,3,5-Trimethylbenzene	0.155	0.0050	"	0.125		124	70-130			
Naphthalene	0.132	0.0038	"	0.125		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.4	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

Matrix Spike (BFK0708-MS1)

Source: 2211492-01

Prepared: 11/30/22 Analyzed: 12/01/22

Benzene	0.0913	0.0020	mg/kg	0.125	ND	73.1	70-130			
Toluene	0.118	0.0050	"	0.125	ND	94.8	70-130			
Ethylbenzene	0.139	0.0050	"	0.125	ND	111	70-130			
m,p-Xylene	0.275	0.010	"	0.250	ND	110	70-130			
o-Xylene	0.135	0.0050	"	0.125	ND	108	70-130			
1,2,4-Trimethylbenzene	0.152	0.0050	"	0.125	ND	122	70-130			
1,3,5-Trimethylbenzene	0.157	0.0050	"	0.125	ND	125	70-130			
Naphthalene	0.143	0.0038	"	0.125	ND	114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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

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

Batch BFK0708 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0708-MSD1)		Source: 2211492-01			Prepared: 11/30/22 Analyzed: 12/01/22					
Benzene	0.0937	0.0020	mg/kg	0.125	ND	74.9	70-130	2.53	30	
Toluene	0.124	0.0050	"	0.125	ND	98.9	70-130	4.19	30	
Ethylbenzene	0.141	0.0050	"	0.125	ND	113	70-130	1.46	30	
m,p-Xylene	0.278	0.010	"	0.250	ND	111	70-130	1.04	30	
o-Xylene	0.135	0.0050	"	0.125	ND	108	70-130	0.201	30	
1,2,4-Trimethylbenzene	0.155	0.0050	"	0.125	ND	124	70-130	1.72	30	
1,3,5-Trimethylbenzene	0.158	0.0050	"	0.125	ND	126	70-130	0.592	30	
Naphthalene	0.147	0.0038	"	0.125	ND	118	70-130	3.04	30	
Surrogate: 1,2-Dichloroethane-d4		0.0420	"	0.0400		105	50-150			
Surrogate: Toluene-d8		0.0424	"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene		0.0398	"	0.0400		99.5	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFK0709 - EPA 3550A

Blank (BFK0709-BLK1)

Prepared: 11/30/22 Analyzed: 12/01/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.0		"	12.5		96.3	30-150			

LCS (BFK0709-BS1)

Prepared: 11/30/22 Analyzed: 12/01/22

C10-C28 (DRO)	485	50	mg/kg	500		96.9	70-130			
Surrogate: o-Terphenyl	11.9		"	12.5		95.1	30-150			

Matrix Spike (BFK0709-MS1)

Source: 2211492-01

Prepared: 11/30/22 Analyzed: 12/01/22

C10-C28 (DRO)	495	50	mg/kg	500	ND	99.1	70-130			
Surrogate: o-Terphenyl	11.9		"	12.5		94.8	30-150			

Matrix Spike Dup (BFK0709-MSD1)

Source: 2211492-01

Prepared: 11/30/22 Analyzed: 12/01/22

C10-C28 (DRO)	504	50	mg/kg	500	ND	101	70-130	1.77	20	
Surrogate: o-Terphenyl	12.2		"	12.5		97.7	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0001 - EPA 5030 Soil MS

Blank (BFL0001-BLK1)

Prepared & Analyzed: 12/01/22

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	0.0355		"	0.0333		107	40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		79.0	40-150			

LCS (BFL0001-BS1)

Prepared & Analyzed: 12/01/22

Acenaphthene	0.0351	0.00500	mg/kg	0.0333		105	31-137			
Anthracene	0.0339	0.00500	"	0.0333		102	30-120			
Benzo (a) anthracene	0.0305	0.00500	"	0.0333		91.4	30-120			
Benzo (a) pyrene	0.0301	0.00500	"	0.0333		90.3	30-120			
Benzo (b) fluoranthene	0.0357	0.00500	"	0.0333		107	30-120			
Benzo (k) fluoranthene	0.0353	0.00500	"	0.0333		106	30-120			
Chrysene	0.0310	0.00500	"	0.0333		93.0	30-120			
Dibenz (a,h) anthracene	0.0347	0.00500	"	0.0333		104	30-120			
Fluoranthene	0.0362	0.00500	"	0.0333		109	30-120			
Fluorene	0.0369	0.00500	"	0.0333		111	30-120			
Indeno (1,2,3-cd) pyrene	0.0321	0.00500	"	0.0333		96.2	30-120			
Pyrene	0.0320	0.00500	"	0.0333		96.1	35-142			
1-Methylnaphthalene	0.0300	0.00500	"	0.0333		89.9	35-142			
2-Methylnaphthalene	0.0303	0.00500	"	0.0333		90.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0314		"	0.0333		94.2	40-150			
Surrogate: Fluoranthene-d10	0.0375		"	0.0333		112	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0001 - EPA 5030 Soil MS

Matrix Spike (BFL0001-MS1)

Source: 2211483-01

Prepared & Analyzed: 12/01/22

Acenaphthene	0.0226	0.00500	mg/kg	0.0333	ND	67.8	31-137		
Anthracene	0.0225	0.00500	"	0.0333	ND	67.5	30-120		
Benzo (a) anthracene	0.0221	0.00500	"	0.0333	0.000503	64.7	30-120		
Benzo (a) pyrene	0.0220	0.00500	"	0.0333	ND	66.1	30-120		
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120		
Benzo (k) fluoranthene	0.0247	0.00500	"	0.0333	ND	74.2	30-120		
Chrysene	0.0215	0.00500	"	0.0333	ND	64.4	30-120		
Dibenz (a,h) anthracene	0.0241	0.00500	"	0.0333	ND	72.3	30-120		
Fluoranthene	0.0296	0.00500	"	0.0333	ND	88.8	30-120		
Fluorene	0.0237	0.00500	"	0.0333	ND	71.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	ND	66.0	30-120		
Pyrene	0.0239	0.00500	"	0.0333	ND	71.6	35-142		
1-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.1	15-130		
2-Methylnaphthalene	0.0243	0.00500	"	0.0333	ND	72.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0215		"	0.0333		64.5	40-150		
Surrogate: Fluoranthene-d10	0.0262		"	0.0333		78.6	40-150		

Matrix Spike Dup (BFL0001-MSD1)

Source: 2211483-01

Prepared & Analyzed: 12/01/22

Acenaphthene	0.0221	0.00500	mg/kg	0.0333	ND	66.4	31-137	2.05	30
Anthracene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	3.47	30
Benzo (a) anthracene	0.0215	0.00500	"	0.0333	0.000503	63.0	30-120	2.65	30
Benzo (a) pyrene	0.0213	0.00500	"	0.0333	ND	64.0	30-120	3.19	30
Benzo (b) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.5	30-120	3.26	30
Benzo (k) fluoranthene	0.0236	0.00500	"	0.0333	ND	70.9	30-120	4.47	30
Chrysene	0.0213	0.00500	"	0.0333	ND	63.9	30-120	0.811	30
Dibenz (a,h) anthracene	0.0230	0.00500	"	0.0333	ND	68.9	30-120	4.81	30
Fluoranthene	0.0242	0.00500	"	0.0333	ND	72.7	30-120	20.0	30
Fluorene	0.0258	0.00500	"	0.0333	ND	77.3	30-120	8.32	30
Indeno (1,2,3-cd) pyrene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	3.82	30
Pyrene	0.0244	0.00500	"	0.0333	ND	73.1	35-142	2.00	30
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130	2.72	50
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.1	15-130	17.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0200		"	0.0333		59.9	40-150		
Surrogate: Fluoranthene-d10	0.0223		"	0.0333		66.9	40-150		

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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

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

Batch BFL0021 - EPA 3050B

Blank (BFL0021-BLK1)

Prepared: 12/01/22 Analyzed: 12/02/22

Boron ND 0.0100 mg/L

LCS (BFL0021-BS1)

Prepared: 12/01/22 Analyzed: 12/02/22

Boron 5.50 0.0100 mg/L 5.00 110 80-120

Duplicate (BFL0021-DUP1)

Source: 2211462-21

Prepared: 12/01/22 Analyzed: 12/02/22

Boron 0.331 0.0100 mg/L 0.321 2.87 20

Matrix Spike (BFL0021-MS1)

Source: 2211462-21

Prepared: 12/01/22 Analyzed: 12/02/22

Boron 6.02 0.0100 mg/L 5.00 0.321 114 75-125

Matrix Spike Dup (BFL0021-MSD1)

Source: 2211462-21

Prepared: 12/01/22 Analyzed: 12/02/22

Boron 5.92 0.0100 mg/L 5.00 0.321 112 75-125 1.80 25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFL0013 - EPA 3050B

Blank (BFL0013-BLK1)

Prepared & Analyzed: 12/01/22

Arsenic	ND	0.200	mg/kg wet
Cadmium	ND	0.200	"
Lead	ND	0.200	"

LCS (BFL0013-BS1)

Prepared & Analyzed: 12/01/22

Arsenic	35.2	0.200	mg/kg wet	40.0	88.0	80-120
Cadmium	1.94	0.200	"	2.00	97.0	80-120
Lead	18.1	0.200	"	20.0	90.7	80-120

Duplicate (BFL0013-DUP1)

Source: 2211491-01

Prepared & Analyzed: 12/01/22

Arsenic	1.93	0.200	mg/kg dry	1.82	6.19	20
Cadmium	0.0669	0.200	"	0.0661	1.19	20
Lead	3.76	0.200	"	3.75	0.272	20

Matrix Spike (BFL0013-MS1)

Source: 2211491-01

Prepared & Analyzed: 12/01/22

Arsenic	42.4	0.200	mg/kg dry	45.2	1.82	89.9	75-125
Cadmium	2.57	0.200	"	2.26	0.0661	111	75-125
Lead	26.3	0.200	"	22.6	3.75	99.8	75-125

Matrix Spike Dup (BFL0013-MSD1)

Source: 2211491-01

Prepared & Analyzed: 12/01/22

Arsenic	44.3	0.200	mg/kg dry	45.2	1.82	94.1	75-125	4.41	25
Cadmium	2.46	0.200	"	2.26	0.0661	106	75-125	4.12	25
Lead	25.2	0.200	"	22.6	3.75	95.1	75-125	4.14	25

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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

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

Batch BFK0706 - General Preparation

Blank (BFK0706-BLK1)

Prepared: 11/30/22 Analyzed: 12/02/22

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

LCS (BFK0706-BS1)

Prepared: 11/30/22 Analyzed: 12/02/22

Calcium	4.25	0.0500	mg/L wet	5.00	85.0	70-130
Magnesium	4.13	0.0500	"	5.00	82.5	70-130
Sodium	3.83	0.0500	"	5.00	76.7	70-130

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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 BFL0030 - General Preparation

Duplicate (BFL0030-DUP1)

Source: 2211491-01

Prepared & Analyzed: 12/01/22

% Solids	90.0	%	88.5	1.65	20
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Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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

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

Batch BFL0014 - General Preparation

Blank (BFL0014-BLK1)

Prepared & Analyzed: 12/01/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFL0014-BS1)

Prepared & Analyzed: 12/01/22

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.7 95-105

Duplicate (BFL0014-DUP1)

Source: 2211424-04

Prepared & Analyzed: 12/01/22

Specific Conductance (EC) 2.87 0.0100 mmhos/cm 2.95 2.92 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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/02/22 12:10

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

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

Batch BFL0015 - General Preparation

LCS (BFL0015-BS1)

Prepared & Analyzed: 12/01/22

pH	9.23	pH Units	9.18	101	95-105
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Duplicate (BFL0015-DUP1)

Source: 2211424-04

Prepared & Analyzed: 12/01/22

pH	7.37	pH Units	7.33	0.544	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: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

12/02/22 12:10

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

December 05, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2212019

Enclosed are the results of analyses for samples received by Summit Scientific on 12/01/22 17:50. 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: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS70@14.5'	2212019-01	Soil	12/01/22 09:15	12/01/22 17:50
SS71@14.5'	2212019-02	Soil	12/01/22 09:40	12/01/22 17:50
SS72@5'	2212019-03	Soil	12/01/22 14:10	12/01/22 17:50
SS73@10.5'	2212019-04	Soil	12/01/22 14:20	12/01/22 17:50
SS74@14.5'	2212019-05	Soil	12/01/22 14:38	12/01/22 17:50

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

22/2019

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

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

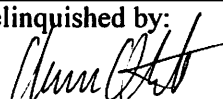
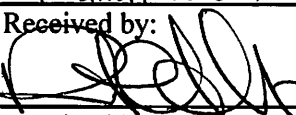
Phone: 303-487-1228

Project Name: Tolens 44-24 Tank Battery

Sampler Name: Aaron Otilar

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)	pH, EC, SAR	Boron -HWS	TMBs(1,2,4)&(1,3,5)	PAH - 915	Metals - 915 4+		
1	SS70 @ 14.5'	12/1/22	0915	3			X			X				X	X			X		X	
2	SS71 @ 14.5'		0940																		
3	SS72 @ 5'		1410																		
4	SS73 @ 10.5'		1420																		
5	SS74 @ 14.5'		1438																		
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 12/1/22 1617	Received by: Tasman Lockbox	Date/Time: 12/1/22 1617	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours — 24 hours — Standard — 48 hours — Sample Integrity: Temperature Upon Receipt: 8.1 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes: +: Fluorene, 1-M, 2-M #: Arsenic, Cadmium, Lead
Relinquished by: Tasman Lockbox	Date/Time: 12/1/22 1750	Received by: 	Date/Time: 12/1/22 1750		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

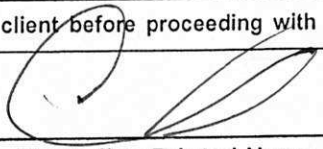
Sample Receipt Checklist

S2 Work Order# 2212019Client: POC/casman Client Project ID: Totems 44-24 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) 8.1Thermometer # 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"/>	on ICE
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

12.1.22
 Date/Time



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS70@14.5'
2212019-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFL0034	12/01/22	12/01/22	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: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0035	"	12/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		91.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS70@14.5'
2212019-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0039	12/02/22	12/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		76.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.30	0.200	mg/kg dry	1	BFL0037	12/01/22	12/03/22	EPA 6020B	
Cadmium	0.397	0.200	"	"	"	"	"	"	
Lead	15.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/01/22 09:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BFL0064	12/02/22	12/03/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS71@14.5'
2212019-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFL0034	12/01/22	12/02/22	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: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0035	"	12/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		82.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS71@14.5'
2212019-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0039	12/02/22	12/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		80.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		63.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.03	0.200	mg/kg dry	1	BFL0037	12/01/22	12/03/22	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Lead	11.2	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/01/22 09:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BFL0064	12/02/22	12/03/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS72@5'
2212019-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFL0034	12/01/22	12/02/22	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: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0035	"	12/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		62.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS72@5'
2212019-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0039	12/02/22	12/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		70.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.98	0.200	mg/kg dry	1	BFL0037	12/01/22	12/03/22	EPA 6020B	
Cadmium	0.507	0.200	"	"	"	"	"	"	
Lead	14.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/01/22 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.3		%	1	BFL0064	12/02/22	12/03/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS73@10.5'
2212019-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFL0034	12/01/22	12/02/22	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: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		81.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0035	"	12/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		70.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS73@10.5'
2212019-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0039	12/02/22	12/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		76.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.25	0.200	mg/kg dry	1	BFL0037	12/01/22	12/03/22	EPA 6020B	
Cadmium	0.556	0.200	"	"	"	"	"	"	
Lead	15.7	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/01/22 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.4		%	1	BFL0064	12/02/22	12/03/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS74@14.5'
2212019-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0034	12/01/22	12/02/22	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: **12/01/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		82.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.0 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0035	"	12/02/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		99.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

SS74@14.5'
2212019-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0039	12/02/22	12/03/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		57.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.89	0.200	mg/kg dry	1	BFL0037	12/01/22	12/03/22	EPA 6020B	
Cadmium	0.355	0.200	"	"	"	"	"	"	
Lead	12.3	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/01/22 14:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BFL0064	12/02/22	12/03/22	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: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

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 BFL0034 - EPA 5030 Soil MS

Blank (BFL0034-BLK1)

Prepared: 12/01/22 Analyzed: 12/02/22

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	0.0309		"	0.0400		77.2	50-150			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0352		"	0.0400		88.1	50-150			

LCS (BFL0034-BS1)

Prepared: 12/01/22 Analyzed: 12/02/22

Benzene	0.0681	0.0020	mg/kg	0.0750		90.8	70-130			
Toluene	0.0735	0.0050	"	0.0750		98.0	70-130			
Ethylbenzene	0.0679	0.0050	"	0.0750		90.6	70-130			
m,p-Xylene	0.141	0.010	"	0.150		93.8	70-130			
o-Xylene	0.0713	0.0050	"	0.0750		95.1	70-130			
1,2,4-Trimethylbenzene	0.0740	0.0050	"	0.0750		98.7	70-130			
1,3,5-Trimethylbenzene	0.0728	0.0050	"	0.0750		97.1	70-130			
Naphthalene	0.0950	0.0038	"	0.0750		127	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0335		"	0.0400		83.8	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.0	50-150			

Matrix Spike (BFL0034-MS1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/02/22

Benzene	0.0733	0.0020	mg/kg	0.0750	ND	97.8	70-130			
Toluene	0.0779	0.0050	"	0.0750	ND	104	70-130			
Ethylbenzene	0.0695	0.0050	"	0.0750	ND	92.7	70-130			
m,p-Xylene	0.144	0.010	"	0.150	ND	96.1	70-130			
o-Xylene	0.0732	0.0050	"	0.0750	ND	97.6	70-130			
1,2,4-Trimethylbenzene	0.0770	0.0050	"	0.0750	ND	103	70-130			
1,3,5-Trimethylbenzene	0.0741	0.0050	"	0.0750	ND	98.8	70-130			
Naphthalene	0.0881	0.0038	"	0.0750	ND	117	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0400		85.1	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

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 BFL0034 - EPA 5030 Soil MS

Matrix Spike Dup (BFL0034-MSD1)	Source: 2212017-01			Prepared: 12/01/22 Analyzed: 12/02/22						
Benzene	0.0683	0.0020	mg/kg	0.0750	ND	91.1	70-130	7.07	30	
Toluene	0.0750	0.0050	"	0.0750	ND	100	70-130	3.81	30	
Ethylbenzene	0.0664	0.0050	"	0.0750	ND	88.6	70-130	4.50	30	
m,p-Xylene	0.139	0.010	"	0.150	ND	92.6	70-130	3.71	30	
o-Xylene	0.0715	0.0050	"	0.0750	ND	95.3	70-130	2.32	30	
1,2,4-Trimethylbenzene	0.0760	0.0050	"	0.0750	ND	101	70-130	1.26	30	
1,3,5-Trimethylbenzene	0.0734	0.0050	"	0.0750	ND	97.9	70-130	0.976	30	
Naphthalene	0.0800	0.0038	"	0.0750	ND	107	70-130	9.64	30	
Surrogate: 1,2-Dichloroethane-d4	0.0353		"	0.0400		88.4	50-150			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFL0035 - EPA 3550A

Blank (BFL0035-BLK1)

Prepared: 12/01/22 Analyzed: 12/02/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.0		"	12.5		112	30-150			

LCS (BFL0035-BS1)

Prepared: 12/01/22 Analyzed: 12/02/22

C10-C28 (DRO)	446	50	mg/kg	500		89.3	70-130			
Surrogate: o-Terphenyl	12.1		"	12.5		97.1	30-150			

Matrix Spike (BFL0035-MS1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/02/22

C10-C28 (DRO)	434	50	mg/kg	500	30.2	80.7	70-130			
Surrogate: o-Terphenyl	11.0		"	12.5		88.2	30-150			

Matrix Spike Dup (BFL0035-MSD1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/02/22

C10-C28 (DRO)	456	50	mg/kg	500	30.2	85.2	70-130	5.02	20	
Surrogate: o-Terphenyl	12.1		"	12.5		97.1	30-150			

Summit Scientific

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



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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0039 - EPA 5030 Soil MS

Blank (BFL0039-BLK1)

Prepared: 12/02/22 Analyzed: 12/03/22

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	0.0380		"	0.0333		114		40-150			
Surrogate: Fluoranthene-d10	0.0291		"	0.0333		87.2		40-150			

LCS (BFL0039-BS1)

Prepared: 12/02/22 Analyzed: 12/03/22

Acenaphthene	0.0400	0.00500	mg/kg	0.0333		120		31-137			
Anthracene	0.0369	0.00500	"	0.0333		111		30-120			
Benzo (a) anthracene	0.0280	0.00500	"	0.0333		83.9		30-120			
Benzo (a) pyrene	0.0312	0.00500	"	0.0333		93.5		30-120			
Benzo (b) fluoranthene	0.0348	0.00500	"	0.0333		104		30-120			
Benzo (k) fluoranthene	0.0377	0.00500	"	0.0333		113		30-120			
Chrysene	0.0320	0.00500	"	0.0333		96.1		30-120			
Dibenz (a,h) anthracene	0.0367	0.00500	"	0.0333		110		30-120			
Fluoranthene	0.0382	0.00500	"	0.0333		115		30-120			
Fluorene	0.0384	0.00500	"	0.0333		115		30-120			
Indeno (1,2,3-cd) pyrene	0.0351	0.00500	"	0.0333		105		30-120			
Pyrene	0.0303	0.00500	"	0.0333		90.9		35-142			
1-Methylnaphthalene	0.0314	0.00500	"	0.0333		94.3		35-142			
2-Methylnaphthalene	0.0332	0.00500	"	0.0333		99.7		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0326		"	0.0333		97.9		40-150			
Surrogate: Fluoranthene-d10	0.0368		"	0.0333		110		40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0039 - EPA 5030 Soil MS

Matrix Spike (BFL0039-MS1)

Source: 2212017-01

Prepared: 12/02/22 Analyzed: 12/03/22

Acenaphthene	0.0263	0.00500	mg/kg	0.0333	ND	79.0	31-137		
Anthracene	0.0254	0.00500	"	0.0333	ND	76.2	30-120		
Benzo (a) anthracene	0.0229	0.00500	"	0.0333	ND	68.7	30-120		
Benzo (a) pyrene	0.0245	0.00500	"	0.0333	ND	73.4	30-120		
Benzo (b) fluoranthene	0.0279	0.00500	"	0.0333	ND	83.7	30-120		
Benzo (k) fluoranthene	0.0268	0.00500	"	0.0333	ND	80.5	30-120		
Chrysene	0.0232	0.00500	"	0.0333	ND	69.6	30-120		
Dibenz (a,h) anthracene	0.0259	0.00500	"	0.0333	ND	77.6	30-120		
Fluoranthene	0.0291	0.00500	"	0.0333	ND	87.3	30-120		
Fluorene	0.0252	0.00500	"	0.0333	ND	75.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0210	0.00500	"	0.0333	ND	63.1	30-120		
Pyrene	0.0259	0.00500	"	0.0333	0.000537	76.1	35-142		
1-Methylnaphthalene	0.0237	0.00500	"	0.0333	ND	71.1	15-130		
2-Methylnaphthalene	0.0238	0.00500	"	0.0333	ND	71.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0246		"	0.0333		73.7	40-150		
Surrogate: Fluoranthene-d10	0.0283		"	0.0333		84.9	40-150		

Matrix Spike Dup (BFL0039-MSD1)

Source: 2212017-01

Prepared: 12/02/22 Analyzed: 12/03/22

Acenaphthene	0.0274	0.00500	mg/kg	0.0333	ND	82.3	31-137	4.04	30
Anthracene	0.0262	0.00500	"	0.0333	ND	78.5	30-120	3.00	30
Benzo (a) anthracene	0.0272	0.00500	"	0.0333	ND	81.7	30-120	17.3	30
Benzo (a) pyrene	0.0297	0.00500	"	0.0333	ND	89.2	30-120	19.5	30
Benzo (b) fluoranthene	0.0347	0.00500	"	0.0333	ND	104	30-120	21.6	30
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333	ND	85.7	30-120	6.20	30
Chrysene	0.0270	0.00500	"	0.0333	ND	81.0	30-120	15.1	30
Dibenz (a,h) anthracene	0.0280	0.00500	"	0.0333	ND	83.9	30-120	7.83	30
Fluoranthene	0.0394	0.00500	"	0.0333	ND	118	30-120	30.2	30
Fluorene	0.0258	0.00500	"	0.0333	ND	77.3	30-120	2.14	30
Indeno (1,2,3-cd) pyrene	0.0263	0.00500	"	0.0333	ND	79.0	30-120	22.3	30
Pyrene	0.0329	0.00500	"	0.0333	0.000537	97.2	35-142	24.0	30
1-Methylnaphthalene	0.0226	0.00500	"	0.0333	ND	67.7	15-130	4.92	50
2-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.2	15-130	2.36	50
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.6	40-150		
Surrogate: Fluoranthene-d10	0.0276		"	0.0333		82.8	40-150		

QR-02

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFL0037 - EPA 3050B

Blank (BFL0037-BLK1)

Prepared: 12/01/22 Analyzed: 12/03/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFL0037-BS1)

Prepared: 12/01/22 Analyzed: 12/03/22

Arsenic	40.2	0.200	mg/kg wet	40.0		100	80-120			
Cadmium	2.28	0.200	"	2.00		114	80-120			
Lead	23.3	0.200	"	20.0		116	80-120			

Duplicate (BFL0037-DUP1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/03/22

Arsenic	1.10	0.200	mg/kg dry		1.01			8.88	20	
Cadmium	0.0655	0.200	"		0.0647			1.27	20	
Lead	3.88	0.200	"		3.98			2.32	20	

Matrix Spike (BFL0037-MS1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/03/22

Arsenic	44.6	0.200	mg/kg dry	41.5	1.01	105	75-125			
Cadmium	2.16	0.200	"	2.07	0.0647	101	75-125			
Lead	24.1	0.200	"	20.7	3.98	97.0	75-125			

Matrix Spike Dup (BFL0037-MSD1)

Source: 2212017-01

Prepared: 12/01/22 Analyzed: 12/03/22

Arsenic	43.9	0.200	mg/kg dry	41.5	1.01	103	75-125	1.71	25	
Cadmium	2.27	0.200	"	2.07	0.0647	106	75-125	4.86	25	
Lead	25.6	0.200	"	20.7	3.98	104	75-125	5.91	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

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 BFL0064 - General Preparation

Duplicate (BFL0064-DUP1)

Source: 2212018-01

Prepared: 12/02/22 Analyzed: 12/03/22

% Solids	86.3	%	86.8	0.513	20
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Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/05/22 16:09

Notes and Definitions

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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

December 07, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Totems 44-24 Tank Battery

Work Order #2212039

Enclosed are the results of analyses for samples received by Summit Scientific on 12/02/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Sheely", is displayed within a light gray rectangular box.

Scott Sheely For Paul Shrewsbury
President



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS75@5'	2212039-01	Soil	12/02/22 09:09	12/02/22 16:00
SS76@10.5'	2212039-02	Soil	12/02/22 09:10	12/02/22 16:00
SS77@14.5'	2212039-03	Soil	12/02/22 09:11	12/02/22 16:00
SS78@5'	2212039-04	Soil	12/02/22 09:33	12/02/22 16:00
SS79@10.5'	2212039-05	Soil	12/02/22 09:34	12/02/22 16:00
SS80@14.5'	2212039-06	Soil	12/02/22 09:35	12/02/22 16:00

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.

2212039

Summit Scientific

S₂

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

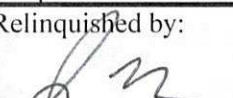
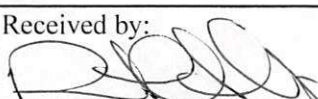
Phone: 303-487-1228

Project Name: Totems 44-24 Tank Battery

Sampler Name: J. Marcus

Project Number: 12

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)	pH, EC, SAR	Boron - HWS	TMBS (124 + 135)		Metals	+	
1	5575 @ 5'	12/2/22	0909	3			X			X				X	X			X	X	X	
2	5576 @ 10.5'		0910	1																	
3	5577 @ 14.5'		0911	1																	
4	5578 @ 5'		0933	1																	
5	5579 @ 10.5'		0934	1																	
6	5580 @ 14.5'		0935	1																	
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 12/2/22 1430	Received by: Tasman's Lock Box	Date/Time: 12/2/22 1430	Turn Around Time (Check)	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 12/2/22 1535	Received by: Sample drop Box	Date/Time: 12/2/22 1535	Same Day <input checked="" type="checkbox"/> 72 hours —	* arsenic, cadmium lead + Fluorene, 1-M, 2-M
Relinquished by: Sample drop Box	Date/Time: 12/2/22 1600	Received by: 	Date/Time: 12/2/22 1600	24 hours — Standard —	
				48 hours —	
				Sample Integrity:	
				Temperature Upon Receipt: 8.6	
				Samples Intact: Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 22/2039Client: Reichsman Client Project ID: Totems 44-24 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☐ Other ☐Temp (°C) 8.0Thermometer # 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"/>	on ice
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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 type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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

Date/Time

12.2.22



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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS75@5'
2212039-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0434	108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0432	108 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.6	109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS75@5'
2212039-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/05/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0251	75.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0182	54.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	26.2	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.400	0.200	"	"	"	"	"	"	
Lead	13.3	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.4		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS76@10.5'
2212039-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0284	71.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.6	109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS76@10.5'
2212039-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/05/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0278	83.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.09	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.268	0.200	"	"	"	"	"	"	
Lead	10.8	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS77@14.5'
2212039-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0280	70.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.5	108 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS77@14.5'
2212039-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/05/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0253	75.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.93	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.307	0.200	"	"	"	"	"	"	
Lead	15.8	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS78@5'
2212039-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0326	81.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0428	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0430	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.0	112 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS78@5'
2212039-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/06/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.94	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.332	0.200	"	"	"	"	"	"	
Lead	12.8	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.6		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS79@10.5'
2212039-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0332	83.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0428	107 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.2	106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS79@10.5'
2212039-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/06/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0278	83.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.58	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.468	0.200	"	"	"	"	"	"	
Lead	15.0	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS80@14.5'
2212039-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFL0077	12/02/22	12/04/22	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: **12/02/22 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0355	88.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0427	107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0423	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFL0078	12/02/22	12/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	13.3	106 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

SS80@14.5'
2212039-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Fluorene	ND	0.00500	mg/kg	1	BFL0096	12/05/22	12/06/22	EPA 8270D SIM	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0286	85.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.17	0.200	mg/kg dry	1	BFL0075	12/02/22	12/03/22	EPA 6020B	
Cadmium	0.401	0.200	"	"	"	"	"	"	
Lead	8.61	0.200	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/22 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8		%	1	BFL0092	12/04/22	12/04/22	Calculation	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFL0077 - EPA 5030 Soil MS

Blank (BFL0077-BLK1)

Prepared: 12/02/22 Analyzed: 12/03/22

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	0.0369		"	0.0400		92.2	50-150			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0436		"	0.0400		109	50-150			

LCS (BFL0077-BS1)

Prepared: 12/02/22 Analyzed: 12/04/22

Benzene	0.133	0.0020	mg/kg	0.150		88.6	70-130			
Toluene	0.141	0.0050	"	0.150		93.9	70-130			
Ethylbenzene	0.157	0.0050	"	0.150		104	70-130			
m,p-Xylene	0.305	0.010	"	0.300		102	70-130			
o-Xylene	0.143	0.0050	"	0.150		95.1	70-130			
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.150		81.5	70-130			
1,3,5-Trimethylbenzene	0.140	0.0050	"	0.150		93.5	70-130			
Naphthalene	0.130	0.0038	"	0.150		86.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0400		87.2	50-150			

Matrix Spike (BFL0077-MS1)

Source: 2212039-02

Prepared: 12/02/22 Analyzed: 12/04/22

Benzene	0.130	0.0020	mg/kg	0.150	ND	86.8	70-130			
Toluene	0.146	0.0050	"	0.150	ND	97.0	70-130			
Ethylbenzene	0.146	0.0050	"	0.150	ND	97.5	70-130			
m,p-Xylene	0.293	0.010	"	0.300	ND	97.7	70-130			
o-Xylene	0.142	0.0050	"	0.150	ND	94.8	70-130			
1,2,4-Trimethylbenzene	0.164	0.0050	"	0.150	ND	109	70-130			
1,3,5-Trimethylbenzene	0.162	0.0050	"	0.150	ND	108	70-130			
Naphthalene	0.127	0.0038	"	0.150	ND	84.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0549		"	0.0400		137	50-150			
Surrogate: Toluene-d8	0.0448		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		101	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

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 BFL0077 - EPA 5030 Soil MS

Matrix Spike Dup (BFL0077-MSD1)	Source: 2212039-02			Prepared: 12/02/22 Analyzed: 12/04/22						
Benzene	0.129	0.0020	mg/kg	0.150	ND	86.1	70-130	0.763	30	
Toluene	0.145	0.0050	"	0.150	ND	96.6	70-130	0.413	30	
Ethylbenzene	0.147	0.0050	"	0.150	ND	98.0	70-130	0.532	30	
m,p-Xylene	0.297	0.010	"	0.300	ND	98.8	70-130	1.20	30	
o-Xylene	0.145	0.0050	"	0.150	ND	96.5	70-130	1.82	30	
1,2,4-Trimethylbenzene	0.169	0.0050	"	0.150	ND	113	70-130	2.99	30	
1,3,5-Trimethylbenzene	0.168	0.0050	"	0.150	ND	112	70-130	3.60	30	
Naphthalene	0.124	0.0038	"	0.150	ND	82.4	70-130	2.59	30	
Surrogate: 1,2-Dichloroethane-d4	0.0544		"	0.0400		136	50-150			
Surrogate: Toluene-d8	0.0447		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	50-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BFL0078 - EPA 3550A

Blank (BFL0078-BLK1)

Prepared: 12/02/22 Analyzed: 12/03/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

LCS (BFL0078-BS1)

Prepared: 12/02/22 Analyzed: 12/03/22

C10-C28 (DRO)	494	50	mg/kg	500		98.8	70-130			
Surrogate: o-Terphenyl	13.6		"	12.5		109	30-150			

Matrix Spike (BFL0078-MS1)

Source: 2212039-01

Prepared: 12/02/22 Analyzed: 12/03/22

C10-C28 (DRO)	432	50	mg/kg	500	ND	86.3	70-130			
Surrogate: o-Terphenyl	13.0		"	12.5		104	30-150			

Matrix Spike Dup (BFL0078-MSD1)

Source: 2212039-01

Prepared: 12/02/22 Analyzed: 12/03/22

C10-C28 (DRO)	434	50	mg/kg	500	ND	86.7	70-130	0.448	20	
Surrogate: o-Terphenyl	13.1		"	12.5		105	30-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0096 - EPA 5030 Soil MS

Blank (BFL0096-BLK1)

Prepared & Analyzed: 12/05/22

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	0.0358		"	0.0333		107	40-150			
Surrogate: Fluoranthene-d10	0.0277		"	0.0333		83.1	40-150			

LCS (BFL0096-BS1)

Prepared & Analyzed: 12/05/22

Acenaphthene	0.0365	0.00500	mg/kg	0.0333		110	31-137			
Anthracene	0.0331	0.00500	"	0.0333		99.4	30-120			
Benzo (a) anthracene	0.0286	0.00500	"	0.0333		85.8	30-120			
Benzo (a) pyrene	0.0294	0.00500	"	0.0333		88.2	30-120			
Benzo (b) fluoranthene	0.0314	0.00500	"	0.0333		94.2	30-120			
Benzo (k) fluoranthene	0.0380	0.00500	"	0.0333		114	30-120			
Chrysene	0.0319	0.00500	"	0.0333		95.7	30-120			
Dibenz (a,h) anthracene	0.0297	0.00500	"	0.0333		89.0	30-120			
Fluoranthene	0.0347	0.00500	"	0.0333		104	30-120			
Fluorene	0.0336	0.00500	"	0.0333		101	30-120			
Indeno (1,2,3-cd) pyrene	0.0267	0.00500	"	0.0333		80.1	30-120			
Pyrene	0.0326	0.00500	"	0.0333		97.7	35-142			
1-Methylnaphthalene	0.0311	0.00500	"	0.0333		93.2	35-142			
2-Methylnaphthalene	0.0320	0.00500	"	0.0333		96.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0331		"	0.0333		99.2	40-150			
Surrogate: Fluoranthene-d10	0.0349		"	0.0333		105	40-150			

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFL0096 - EPA 5030 Soil MS

Matrix Spike (BFL0096-MS1)

Source: 2212039-01

Prepared & Analyzed: 12/05/22

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.9	31-137		
Anthracene	0.0157	0.00500	"	0.0333	ND	47.2	30-120		
Benzo (a) anthracene	0.0159	0.00500	"	0.0333	ND	47.7	30-120		
Benzo (a) pyrene	0.0136	0.00500	"	0.0333	ND	40.8	30-120		
Benzo (b) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120		
Benzo (k) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.2	30-120		
Chrysene	0.0172	0.00500	"	0.0333	ND	51.7	30-120		
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120		
Fluoranthene	0.0174	0.00500	"	0.0333	ND	52.3	30-120		
Fluorene	0.0147	0.00500	"	0.0333	ND	44.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0158	0.00500	"	0.0333	ND	47.5	30-120		
Pyrene	0.0193	0.00500	"	0.0333	ND	57.9	35-142		
1-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.7	15-130		
2-Methylnaphthalene	0.0178	0.00500	"	0.0333	ND	53.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0175		"	0.0333		52.4	40-150		
Surrogate: Fluoranthene-d10	0.0159		"	0.0333		47.7	40-150		

Matrix Spike Dup (BFL0096-MSD1)

Source: 2212039-01

Prepared & Analyzed: 12/05/22

Acenaphthene	0.0231	0.00500	mg/kg	0.0333	ND	69.4	31-137	23.4	30
Anthracene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	12.8	30
Benzo (a) anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	5.17	30
Benzo (a) pyrene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	9.77	30
Benzo (b) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	8.94	30
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.7	30-120	2.61	30
Chrysene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	9.47	30
Dibenz (a,h) anthracene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	7.83	30
Fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120	19.2	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	34.5	30
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.8	30-120	8.73	30
Pyrene	0.0174	0.00500	"	0.0333	ND	52.1	35-142	10.5	30
1-Methylnaphthalene	0.0158	0.00500	"	0.0333	ND	47.4	15-130	6.60	50
2-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.3	15-130	2.21	50
Surrogate: 2-Methylnaphthalene-d10	0.0160		"	0.0333		48.1	40-150		
Surrogate: Fluoranthene-d10	0.0135		"	0.0333		40.5	40-150		

QR-02

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BFL0075 - EPA 3050B

Blank (BFL0075-BLK1)

Prepared: 12/02/22 Analyzed: 12/03/22

Arsenic	ND	0.200	mg/kg wet							
Cadmium	ND	0.200	"							
Lead	ND	0.200	"							

LCS (BFL0075-BS1)

Prepared: 12/02/22 Analyzed: 12/03/22

Arsenic	43.7	0.200	mg/kg wet	40.0		109	80-120			
Cadmium	1.96	0.200	"	2.00		98.1	80-120			
Lead	21.6	0.200	"	20.0		108	80-120			

Duplicate (BFL0075-DUP1)

Source: 2212039-01

Prepared: 12/02/22 Analyzed: 12/03/22

Arsenic	27.3	0.200	mg/kg dry		26.2			4.30	20	
Cadmium	0.412	0.200	"		0.400			3.15	20	
Lead	13.5	0.200	"		13.3			1.08	20	

Matrix Spike (BFL0075-MS1)

Source: 2212039-01

Prepared: 12/02/22 Analyzed: 12/03/22

Arsenic	69.5	0.200	mg/kg dry	49.1	26.2	88.1	75-125			
Cadmium	2.49	0.200	"	2.46	0.400	85.2	75-125			
Lead	31.3	0.200	"	24.6	13.3	73.1	75-125			QM-05

Matrix Spike Dup (BFL0075-MSD1)

Source: 2212039-01

Prepared: 12/02/22 Analyzed: 12/03/22

Arsenic	72.1	0.200	mg/kg dry	49.1	26.2	93.6	75-125	3.77	25	
Cadmium	3.05	0.200	"	2.46	0.400	108	75-125	20.2	25	
Lead	37.7	0.200	"	24.6	13.3	99.3	75-125	18.7	25	

Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

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 BFL0092 - General Preparation

Duplicate (BFL0092-DUP1)

Source: 2211294-05

Prepared & Analyzed: 12/04/22

% Solids	83.7	%	83.9	0.177	20
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Summit Scientific

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

Project: Totems 44-24 Tank Battery

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
12/07/22 10:54

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
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