



PDC Energy, Inc.
Fourth Quarter 2022 Groundwater Monitoring Summary

November 23, 2022

Fagerberg Pad
SWSW Section 12 T6N R66W
Remediation # 24464

This groundwater monitoring summary has been prepared by Tasman, Inc. for the Fagerberg Pad.

Site History and Background

On April 6, 2022, approximately 2 barrels (bbls) of produced water were released from a nipple pin hole leak at the Fagerberg Pad. Following the discovery, mitigation activities were initiated and approximately 40 cubic yards of impacted material were removed from location. During excavation activities, groundwater was encountered within the excavation at approximately 7 feet below ground surface (bgs).

Monitoring Well Installation and Supplemental Site Investigation Activities

On October 7, 2022, seven monitoring wells (BH01 – BH07) were installed to delineate dissolved-phase hydrocarbon impacts surrounding the former excavation extent (Figure 1). Lithologic descriptions and volatile organic compound (VOC) concentrations, measured using a photoionization detector (PID), were recorded for each borehole.

In addition, six background soil borings (BKG02 – BKG07) were advanced to a depth of approximately 6 inches bgs in native material surrounding the facility. Six samples were collected at a depth of approximately 0- 6 inches bgs and were submitted to Summit Scientific Laboratory (Summit) for analysis of electrical conductivity (EC).

Background analytical results indicated that EC concentrations were in compliance with the applicable COGCC Table 915-1 regulatory standards in native soil on site. The monitoring well and background soil boring locations are illustrated on Figure 1. Soil analytical results are summarized in Table 1. The GPS coordinates and field observed VOC concentrations are summarized in Table 2. The laboratory analytical report is included in Attachment A. The boring and well completion logs are included as Attachment B.

Groundwater Monitoring Activities

On October 13, 2022, groundwater monitoring was conducted at all seven monitoring wells (BH01 – BH07). Seven groundwater samples were submitted to Summit for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0, and total dissolved solids (TDS) by Method SM 2540C.

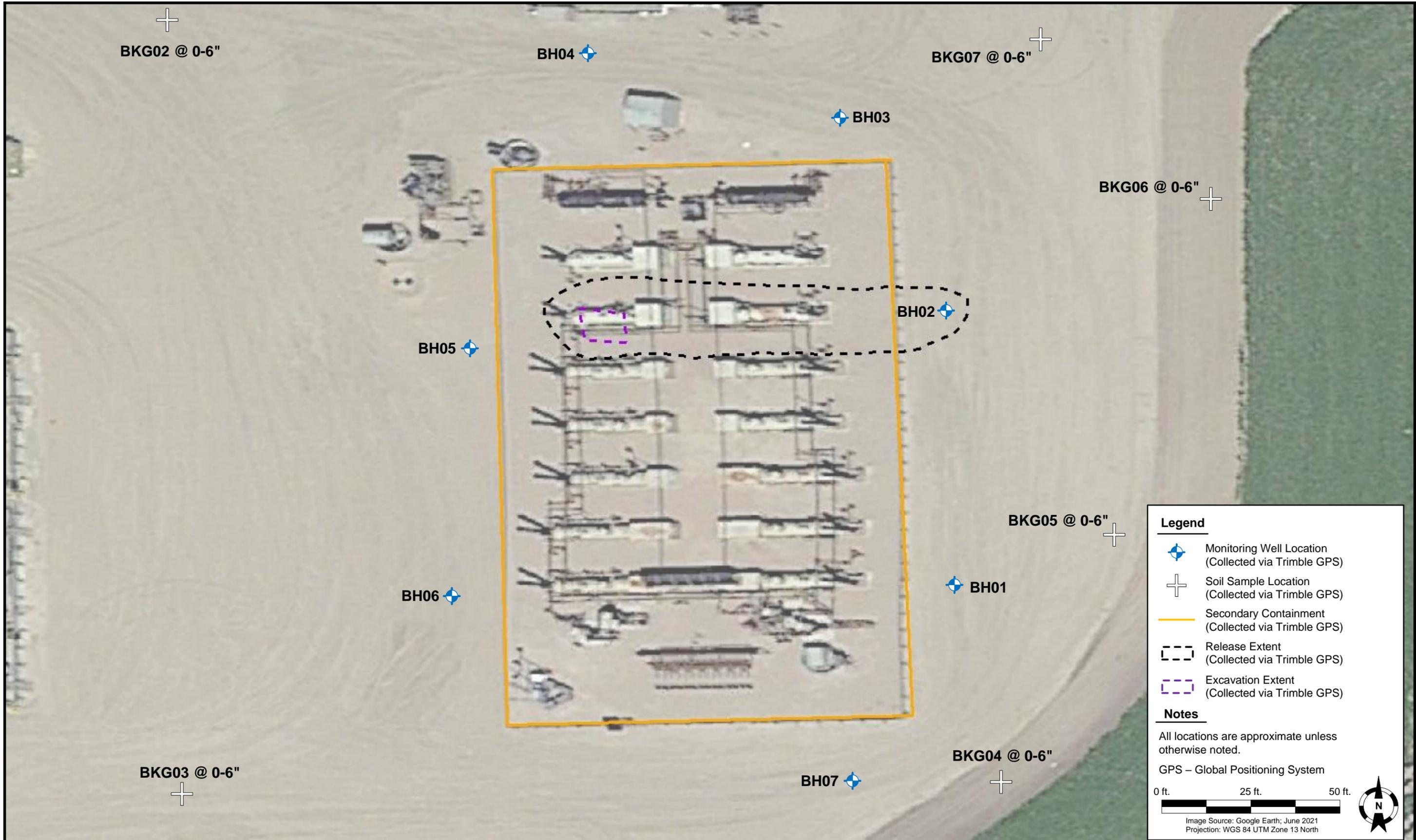
Fourth quarter 2022 analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 regulatory standards in all seven monitoring well locations. Additionally, inorganic parameters were in compliance with the applicable regulatory standards or within 1.25x the background concentrations of the up- and cross-gradient monitoring wells (BH05 and BH06) in all monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figures 2 and 3. Groundwater elevation data is illustrated on Figure 4. Groundwater analytical results are summarized in Tables 3 and 4. The laboratory analytical report is included in Attachment A.

Current Remediation Activities and Path Forward

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

Additionally, based on analytical results received for samples collected during confirmation soil sampling activities in April 2022, further sampling is necessary to vertically and horizontally delineate EC exceedances recorded in soil samples SS07 and SS08, as well as, confirm the absence of hydrocarbon impacts in the vicinity of soil sample SS04. The proposed soil boring locations are illustrated on Figure 5.

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



Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Soil Sample Location (Collected via Trimble GPS)
- Secondary Containment (Collected via Trimble GPS)
- Release Extent (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)

Notes

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

0 ft. 25 ft. 50 ft.

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

DATE:	October 25, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	J. Marcus



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**PDC Energy, Inc. – DJ Basin
Fagerberg Pad**
SWSW, Section 12, Township 6 North, Range 66 West
Weld County, Colorado

**MONITORING WELL
AND SOIL BORING
LOCATION MAP**

**FIGURE
1**

BH04	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	7.97

BH03	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	7.79

BH02	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	8.08

BH05	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	6.73

BH01	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	8.22

BH06	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	6.93

BH07	
Compound (µg/L)	10/13/2022
Benzene	<1.0
Toluene	<1.0
Ethylbenzene	<1.0
Total Xylenes	<2.0
Naphthalene	<1.0
1,2,4-TMB	<1.0
1,3,5-TMB	<1.0
Depth to Water (ft. bgs)	8.10

Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Secondary Containment (Collected via Trimble GPS)
- Release Extent (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Groundwater Flow Direction (4Q22)

Notes

All locations are approximate unless otherwise noted.

TMB – Trimethylbenzene

µg/L – Micrograms per liter

ft. bgs – Feet below ground surface

GPS – Global Positioning System

0 ft. 25 ft. 50 ft.

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

DATE: October 31, 2022

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GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 2

BH04	
Compound (mg/L)	10/13/2022
TDS	1,920
Chloride	83.4
Sulfate	1,710
Depth to Water (ft. bgs)	7.97

BH03	
Compound (mg/L)	10/13/2022
TDS	2,100
Chloride	79.2
Sulfate	1,940
Depth to Water (ft. bgs)	7.79

BH05	
Compound (mg/L)	10/13/2022
TDS	2,050
Chloride	81.2
Sulfate	1,760
Depth to Water (ft. bgs)	6.73

BH02	
Compound (mg/L)	10/13/2022
TDS	2,410
Chloride	71.4
Sulfate	1,690
Depth to Water (ft. bgs)	8.08

BH06	
Compound (mg/L)	10/13/2022
TDS	2,100
Chloride	57.8
Sulfate	1,650
Depth to Water (ft. bgs)	6.93

BH01	
Compound (mg/L)	10/13/2022
TDS	2,050
Chloride	178
Sulfate	1,660
Depth to Water (ft. bgs)	8.22

BH07	
Compound (mg/L)	10/13/2022
TDS	2,360
Chloride	56.2
Sulfate	1,600
Depth to Water (ft. bgs)	8.10

BH04

BH03

BH05

BH02

BH06

BH01

BH07

GW01

Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Secondary Containment (Collected via Trimble GPS)
- Release Extent (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Groundwater Flow Direction (4Q22)

Notes

All locations are approximate unless otherwise noted.

TDS – Total Dissolved Solids
 mg/L – Milligrams per liter
 ft. bgs – Feet below ground surface
 GPS – Global Positioning System

0 ft. 25 ft. 50 ft.

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

DATE: October 31, 2022

DESIGNED BY: C. Hamlin

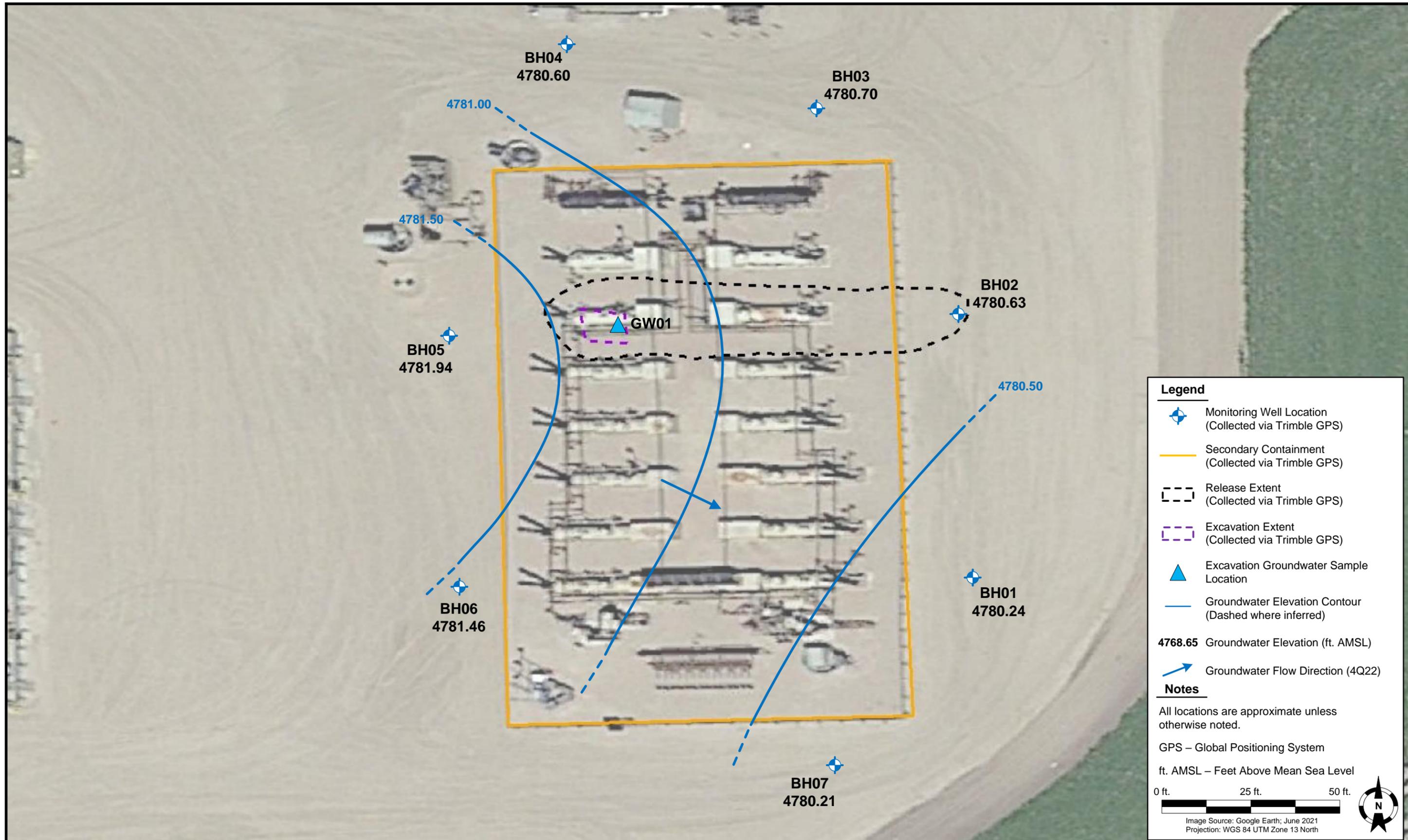
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GROUNDWATER ANALYTICAL RESULTS MAP (INORGANIC PARAMETERS)

FIGURE 3



Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Secondary Containment (Collected via Trimble GPS)
- Release Extent (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Groundwater Elevation Contour (Dashed where inferred)

4768.65 Groundwater Elevation (ft. AMSL)

Groundwater Flow Direction (4Q22)

Notes

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

ft. AMSL – Feet Above Mean Sea Level

0 ft. 25 ft. 50 ft.

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**GROUNDWATER
ELEVATION CONTOUR
MAP (10/13/2022)**

**FIGURE
4**



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**PROPOSED
SOIL BORING LOCATION
MAP**

**FIGURE
5**

**TABLE 1
FAGERBERG PAD
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)	Benz(a) (mg/kg)	Chrysene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Residential SSL ^(1,2)			1.2	490	5.8	58	30	27	2	500	1.1	110	240	180	18	24	-	-	-
Protection of Groundwater SSL ^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.011	9	8.9	1.3	0.006	0.019	-	-	-
Soil Suitability for Reclamation Standard ⁽¹⁾			-	-	-	-	-	-	-	-	-	-	-	-	-	-	<4	<6	2
SS01 @ 0-6"	4/7/2022	0-6 in. bgs	1.0	17	8.1	17	1.3	3.4	4.2	6,800	0.143	0.153	0.0304	0.0860	5.34	9.65	4.58	41.4	2.28
SS02 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	120	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.49	0.247	0.396
SS03 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	0.00520	<0.00500	<0.00500	<0.00500	3.85	0.523	0.877
SS04 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	87.68	<0.00500	0.00698	<0.00500	<0.00500	0.0283	0.0391	1.70	0.493	0.635
SS05 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	1.0	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0103	1.16	0.105	0.532
SS06 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	1.0	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00667	0.154	0.0781	0.368
SS07 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.80	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	4.51	0.184	0.561
SS08 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.69	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.276	0.0623	0.391
SS09 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.64	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.26	0.793	1.35
SS10 @ 0-6"	4/7/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	0.62	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	3.47	1.03	1.50
SS11 @ 2'	4/7/2022	2 ft. bgs	0.033	1.8	0.94	7.7	5.0	1.7	0.89	558	<0.00500	0.0211	0.00774	<0.00500	0.263	0.0714	1.40	0.351	0.422
SS12 @ 0-6"	4/8/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	4.11	0.130	0.629
SS13 @ 0-6"	4/8/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.394	0.0269	0.397
SS14 @ 0-6"	4/8/2022	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.475	0.0218	0.413
SS15 @ 4'	4/8/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.55	0.0627	0.601
SS16 @ 2'	4/14/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.13	0.0932	0.378
SS17 @ 2'	4/14/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.648	0.0648	0.320
SS18 @ 2'	4/14/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.561	0.0501	0.317
SS19 @ 2'	4/14/2022	2 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.671	0.0681	0.346
SS20 @ 4'	4/14/2022	4 ft. bgs	<0.0020	0.0058	<0.0050	0.030	0.015	0.012	<0.0038	1.2	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.641	0.0428	0.514
SS23 @ 7'	4/15/2022	7 ft. bgs	<0.0020	0.0087	<0.0050	0.011	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.51	0.0623	0.372
SS24 @ 4'	4/18/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.03	0.0665	0.495
SS25 @ 7'	4/18/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.35	0.0660	0.425
SS26 @ 4'	4/18/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.13	0.0497	0.611
SS27 @ 7'	4/18/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.08	0.0731	0.429
SS28 @ 4'	4/18/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.826	0.0375	0.466
SS29 @ 7'	4/18/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	1.03	0.0701	0.477
SS30 @ 4'	4/18/2022	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	2.06	0.0421	0.522
SS31 @ 7'	4/18/2022	7 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.00500	0.00614	<0.00500	<0.00500	<0.00500	<0.00500	3.76	0.181	0.465
BKG02 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.17	NA	NA
BKG03 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.78	NA	NA
BKG04 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.153	NA	NA
BKG05 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.110	NA	NA
BKG06 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.243	NA	NA
BKG07 @ 0-6"	10/7/2022	0-6 in. bgs	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.361	NA	NA

TABLE 1
FAGERBERG PAD
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)	Benz(a) (mg/kg)	Chrysene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
Residential SSL^(1,2)			1.2	490	5.8	58	30	27	2	500	1.1	110	240	180	18	24	-	-	-
Protection of Groundwater SSL^(1,2,3)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	0.011	9	8.9	1.3	0.006	0.019	-	-	-

Notes:

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.
4. Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

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

TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

TMB = Trimethylbenzene

Benz(a) = Benzanthracene

M = Methylanthalene

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

NA = Constituent not analyzed

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

 = Sample material excavated and transported off-site for disposal

ft. = Feet

in. = Inches

bgs = Below ground surface

BOLD = Analytical result is in exceedance of applicable standard.

**TABLE 2
FAGERBERG PAD
FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
SS01 @ 0-6"	4/7/2022	0-6 in. bgs	40.502545	-104.733874	1.0	4,608
SS02 @ 0-6"	4/7/2022	0-6 in. bgs	40.502549	-104.733891	1.0	0.0
SS03 @ 0-6"	4/7/2022	0-6 in. bgs	40.502522	-104.733842	1.0	0.0
SS04 @ 0-6"	4/7/2022	0-6 in. bgs	40.502531	-104.733790	1.0	0.0
SS05 @ 0-6"	4/7/2022	0-6 in. bgs	40.502525	-104.733734	1.0	0.0
SS06 @ 0-6"	4/7/2022	0-6 in. bgs	40.502542	-104.733643	1.0	0.0
SS07 @ 0-6"	4/7/2022	0-6 in. bgs	40.502552	-104.733593	1.0	0.0
SS08 @ 0-6"	4/7/2022	0-6 in. bgs	40.502560	-104.733730	1.0	0.0
SS09 @ 0-6"	4/7/2022	0-6 in. bgs	40.502562	-104.733801	1.0	0.0
SS10 @ 0-6"	4/7/2022	0-6 in. bgs	40.502566	-104.733859	1.0	0.0
SS11 @ 2'	4/7/2022	2 ft. bgs	40.502545	-104.733874	1.0	1,750
SS12 @ 0-6"	4/8/2022	0-6 in. bgs	40.502550	-104.733544	1.0	0.0
SS13 @ 0-6"	4/8/2022	0-6 in. bgs	40.502578	-104.733452	1.0	0.0
SS14 @ 0-6"	4/8/2022	0-6 in. bgs	40.502509	-104.733454	1.0	0.0
SS15 @ 4'	4/8/2022	4 ft. bgs	NC	NC	NC	29.5
SS16 @ 2'	4/14/2022	2 ft. bgs	40.502533	-104.733825	1.0	9.6
SS17 @ 2'	4/14/2022	2 ft. bgs	40.502546	-104.733851	1.0	0.9
SS18 @ 2'	4/14/2022	2 ft. bgs	40.502533	-104.733873	1.0	1.0
SS19 @ 2'	4/14/2022	2 ft. bgs	40.502523	-104.733851	1.0	4.5
SS20 @ 4'	4/14/2022	4 ft. bgs	40.502537	-104.733840	1.0	3.3
SS21 @ 2.5'	4/14/2022	2.5 ft. bgs	40.502549	-104.733869	1.0	0.8
SS22 @ 2.5'	4/14/2022	2.5 ft. bgs	40.502525	-104.733867	1.0	0.4
BKG01 @ 2'	4/14/2022	2 ft. bgs	40.502530	-104.733422	1.1	0.3
BKG01 @ 2.5'	4/14/2022	2.5 ft. bgs	40.502530	-104.733422	1.1	0.4
BKG01 @ 4'	4/14/2022	4 ft. bgs	40.502530	-104.733422	1.1	0.2
SS23 @ 7'	4/15/2022	7 ft. bgs	NC	NC	NC	4.7
SS24 @ 4'	4/18/2022	4 ft. bgs	40.502505	-104.733792	1.2	2.2
SS25 @ 7'	4/18/2022	7 ft. bgs	40.502505	-104.733792	1.2	4.1
SS26 @ 4'	4/18/2022	4 ft. bgs	40.502527	-104.733859	1.0	1.8
SS27 @ 7'	4/18/2022	7 ft. bgs	40.502527	-104.733859	1.0	34.8
SS28 @ 4'	4/18/2022	4 ft. bgs	40.502540	-104.733873	1.1	6.1
SS29 @ 7'	4/18/2022	7 ft. bgs	40.502540	-104.733873	1.1	1.9
SS30 @ 4'	4/18/2022	4 ft. bgs	40.502548	-104.733855	1.2	3.7
SS31 @ 7'	4/18/2022	7 ft. bgs	40.502548	-104.733855	1.2	1.5
BKG02 @ 0-6"	10/7/2022	0-6 in. bgs	40.502771	-104.734186	NC	0.0
BKG03 @ 0-6"	10/7/2022	0-6 in. bgs	40.502373	-104.733460	NC	0.0
BKG04 @ 0-6"	10/7/2022	0-6 in. bgs	40.502175	-104.734177	NC	0.0
BKG05 @ 0-6"	10/7/2022	0-6 in. bgs	40.502185	-104.733547	NC	0.0
BKG06 @ 0-6"	10/7/2022	0-6 in. bgs	40.502634	-104.733386	NC	0.0
BKG07 @ 0-6"	10/7/2022	0-6 in. bgs	40.502756	-104.733516	NC	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

NC = Data not collected

 = Source material characterization sample

**TABLE 3
FAGERBERG PAD
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	4/15/2022	120	690	84	700	23	150	56	~8	NA
BH01	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.22	4780.24
BH02	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.08	4780.63
BH03	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.79	4780.70
BH04	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.97	4780.60
BH05	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.73	4781.94
BH06	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.93	4781.46
BH07	10/13/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.10	4780.21

Notes:

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

2. Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

TMB = Trimethylbenzene

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

ft. = Feet

AMSL = Above Mean Sea Level

NA = Not applicable

BOLD = Analytical result in exceedance of applicable standard.

TABLE 4
FAGERBERG PAD
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) <small>(1)</small>		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH01	10/13/2022	2,050	178	1,660	8.22	4780.24
BH02	10/13/2022	2,410	71.4	1,690	8.08	4780.63
BH03	10/13/2022	2,100	79.2	1,940	7.79	4780.70
BH04	10/13/2022	1,920	83.4	1,710	7.97	4780.60
BH05	10/13/2022	2,050	81.2	1,760	6.73	4781.94
BH06	10/13/2022	2,100	57.8	1,650	6.93	4781.46
BH07	10/13/2022	2,360	56.2	1,600	8.10	4780.21

Notes:

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

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

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

ft. = Feet

AMSL = Above Mean Sea Level

BOLD = Analytical result in exceedance of applicable standard, but within 1.25x BCKG concentrations.

 = Up-gradient well locations used for background concentration.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 17, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Fagerberg Pad

Work Order #2210121

Enclosed are the results of analyses for samples received by Summit Scientific on 10/07/22 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: Fagerberg Pad

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/17/22 15:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG02@0-6"	2210121-01	Soil	10/07/22 14:30	10/07/22 15:50
BKG03@0-6"	2210121-02	Soil	10/07/22 14:32	10/07/22 15:50
BKG04@0-6"	2210121-03	Soil	10/07/22 14:34	10/07/22 15:50
BKG05@0-6"	2210121-04	Soil	10/07/22 14:36	10/07/22 15:50
BKG06@0-6"	2210121-05	Soil	10/07/22 14:38	10/07/22 15:50
BKG07@0-6"	2210121-06	Soil	10/07/22 14:40	10/07/22 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.

S₂

Sample Receipt Checklist

S2 Work Order# 2210121

Client: Prof. Frisman Client Project ID: Fagerberg Pad

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

-

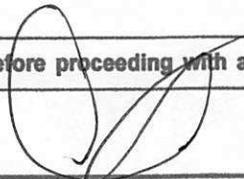
Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

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

10-7-22 19:30
Date/Time



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

Project: Fagerberg Pad

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG02@0-6''
2210121-01 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	1.17	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific

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





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

Project: Fagerberg Pad
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG03@0-6''
2210121-02 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	2.78	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific



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



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

Project: Fagerberg Pad

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG04@0-6''
2210121-03 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:34**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	0.153	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific

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





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

Project: Fagerberg Pad
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG05@0-6''
2210121-04 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:36**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	0.110	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific



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



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

Project: Fagerberg Pad
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG06@0-6''
2210121-05 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:38**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	0.243	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific



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



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

Project: Fagerberg Pad
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

BKG07@0-6''
2210121-06 (Soil)

Summit Scientific

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

Date Sampled: **10/07/22 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	0.361	0.0100	mmhos/cm	1	BFJ0290	10/12/22	10/12/22	EPA 120.1	

Summit Scientific



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



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

Project: Fagerberg Pad

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/17/22 15:04

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		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFJ0290 - General Preparation

Blank (BFJ0290-BLK1)

Prepared & Analyzed: 10/12/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFJ0290-BS1)

Prepared & Analyzed: 10/12/22

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.150 97.1 95-105

Duplicate (BFJ0290-DUP1)

Source: 2209520-19

Prepared & Analyzed: 10/12/22

Specific Conductance (EC) 0.856 0.0100 mmhos/cm 0.886 3.44 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: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/17/22 15:04

Notes and Definitions

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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 21, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Fagerberg Pad

Work Order #2210222

Enclosed are the results of analyses for samples received by Summit Scientific on 10/13/22 17:47. 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: Fagerberg Pad

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2210222-01	Water	10/13/22 12:02	10/13/22 17:47
BH02	2210222-02	Water	10/13/22 12:18	10/13/22 17:47
BH03	2210222-03	Water	10/13/22 10:18	10/13/22 17:47
BH04	2210222-04	Water	10/13/22 11:25	10/13/22 17:47
BH05	2210222-05	Water	10/13/22 11:35	10/13/22 17:47
BH06	2210222-06	Water	10/13/22 10:00	10/13/22 17:47
BH07	2210222-07	Water	10/13/22 11:52	10/13/22 17:47

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

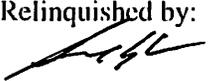
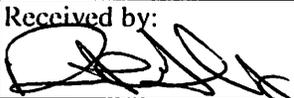
2210222

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: Fagerberg Pad
Sampler Name: S. Anderson, M. Connolly 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)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR		Cl	TDS	SO4	
1	BH01	10/13/22	1202	4	3				X				X		X			X	X	X	pH, EC, SAR by saturated paste	
2	BH02	↓	1218	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
3	BH03	↓	1018	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
4	BH04	↓	1125	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
5	BH05	↓	1135	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
6	BH06	↓	1000	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
7	BH07	↓	1152	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
8																						
9																						
10																						

Relinquished by:  1354 Date/Time: 10/13/22	Received by: Tasman's Lock Box 1354 Date/Time: 10/13/22	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box 1747 Date/Time: 10/13/22	Received by:  1747 Date/Time: 10/13/22	Sample Integrity: Temperature Upon Receipt: <u>6.8</u>	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	Samples Intact: <input checked="" type="checkbox"/> Yes No	

S₂

Sample Receipt Checklist

S2 Work Order# 2210777

Client: Profosman Client Project ID: Fagerberg Pad

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

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

Temp (°C) 6.8 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MCJ
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.

[Signature]
Custodian Printed Name

10.13.22 24:00
Date/Time



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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH01
2210222-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/18/22	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: **10/13/22 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	178	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1660	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 12:02**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2050	10.0		mg/L	1	BFJ0421	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH02
2210222-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/18/22	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: **10/13/22 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	71.4	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1690	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 12:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2410	10.0		mg/L	1	BFJ0421	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH03
2210222-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/18/22	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: **10/13/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	79.2	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1940	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 10:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2100	10.0		mg/L	1	BFJ0420	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH04
2210222-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/19/22	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: **10/13/22 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	83.4	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1710	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 11:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1920	10.0		mg/L	1	BFJ0421	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH05
2210222-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/19/22	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: **10/13/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.1 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	81.2	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1760	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2050	10.0		mg/L	1	BFJ0421	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH06
2210222-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/19/22	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: **10/13/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	57.8	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1650	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2100	10.0		mg/L	1	BFJ0420	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

BH07
2210222-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/13/22 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0408	10/17/22	10/19/22	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: **10/13/22 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **10/13/22 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	56.2	12.0		mg/L	200	BFJ0511	10/20/22	10/21/22	EPA 300.0	
Sulfate	1600	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **10/13/22 11:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2360	10.0		mg/L	1	BFJ0421	10/17/22	10/18/22	SM2540C	

Summit Scientific

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

Project: Fagerberg Pad

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0408 - EPA 5030 Water MS

Blank (BFJ0408-BLK1)

Prepared: 10/17/22 Analyzed: 10/18/22

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.3		"	13.3		99.7	23-173			
<i>Surrogate: Toluene-d8</i>	13.9		"	13.3		104	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.4		"	13.3		100	21-167			

LCS (BFJ0408-BS1)

Prepared: 10/17/22 Analyzed: 10/18/22

Benzene	30.1	1.0	ug/l	33.3		90.3	51-132			
Toluene	33.7	1.0	"	33.3		101	51-138			
Ethylbenzene	44.6	1.0	"	33.3		134	58-146			
m,p-Xylene	89.7	2.0	"	66.7		135	57-144			
o-Xylene	42.0	1.0	"	33.3		126	53-146			
Naphthalene	26.3	1.0	"	33.3		79.0	70-130			
1,2,4-Trimethylbenzene	42.3	1.0	"	33.3		127	70-130			
1,3,5-Trimethylbenzene	39.9	1.0	"	33.3		120	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.3		"	13.3		100	23-173			
<i>Surrogate: Toluene-d8</i>	13.8		"	13.3		103	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.3		"	13.3		99.9	21-167			

Matrix Spike (BFJ0408-MS1)

Source: 2210213-01

Prepared: 10/17/22 Analyzed: 10/18/22

Benzene	30.7	1.0	ug/l	33.3	ND	92.2	34-141			
Toluene	34.2	1.0	"	33.3	ND	103	27-151			
Ethylbenzene	44.4	1.0	"	33.3	ND	133	29-160			
m,p-Xylene	91.7	2.0	"	66.7	ND	138	20-166			
o-Xylene	41.5	1.0	"	33.3	ND	124	33-159			
Naphthalene	32.3	1.0	"	33.3	ND	97.0	70-130			
1,2,4-Trimethylbenzene	33.7	1.0	"	33.3	ND	101	70-130			
1,3,5-Trimethylbenzene	35.4	1.0	"	33.3	ND	106	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.4		"	13.3		100	23-173			
<i>Surrogate: Toluene-d8</i>	13.7		"	13.3		103	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.3		"	13.3		100	21-167			

Summit Scientific

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

Project: Fagerberg Pad

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/21/22 14:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BFJ0408 - EPA 5030 Water MS

Matrix Spike Dup (BFJ0408-MSD1)	Source: 2210213-01			Prepared: 10/17/22 Analyzed: 10/18/22					
Benzene	29.3	1.0	ug/l	33.3	ND	88.0	34-141	4.73	30
Toluene	32.9	1.0	"	33.3	ND	98.7	27-151	3.93	30
Ethylbenzene	43.7	1.0	"	33.3	ND	131	29-160	1.72	30
m,p-Xylene	88.6	2.0	"	66.7	ND	133	20-166	3.43	30
o-Xylene	41.1	1.0	"	33.3	ND	123	33-159	0.871	30
Naphthalene	34.5	1.0	"	33.3	ND	103	70-130	6.41	30
1,2,4-Trimethylbenzene	33.6	1.0	"	33.3	ND	101	70-130	0.327	30
1,3,5-Trimethylbenzene	35.4	1.0	"	33.3	ND	106	70-130	0.254	30
Surrogate: 1,2-Dichloroethane-d4	13.4		"	13.3		100	23-173		
Surrogate: Toluene-d8	13.8		"	13.3		103	20-170		
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.8	21-167		

Summit Scientific

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

Project: Fagerberg Pad

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/21/22 14:59

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BFJ0511 - General Preparation

Blank (BFJ0511-BLK1)

Prepared & Analyzed: 10/20/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BFJ0511-BS1)

Prepared & Analyzed: 10/20/22

Chloride	3.13	0.0600	mg/L	3.00	104	90-110		
Sulfate	15.6	0.300	"	15.0	104	90-110		

Duplicate (BFJ0511-DUP1)

Source: 2210213-01

Prepared: 10/20/22 Analyzed: 10/21/22

Chloride	165	12.0	mg/L		194		16.4	20
Sulfate	343	60.0	"		395		14.1	20

Matrix Spike (BFJ0511-MS1)

Source: 2210213-01

Prepared: 10/20/22 Analyzed: 10/21/22

Chloride	817	12.0	mg/L	600	194	104	80-120	
Sulfate	3470	60.0	"	3000	395	102	80-120	

Summit Scientific

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



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

Project: Fagerberg Pad
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/21/22 14:59

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFJ0420 - General Preparation

Blank (BFJ0420-BLK1)										
					Prepared: 10/17/22 Analyzed: 10/18/22					
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (BFJ0420-DUP1)										
					Source: 2210221-01 Prepared: 10/17/22 Analyzed: 10/18/22					
Total Dissolved Solids	2580	10.0	mg/L		2550			1.29	20	

Batch BFJ0421 - General Preparation

Blank (BFJ0421-BLK1)										
					Prepared: 10/17/22 Analyzed: 10/18/22					
Total Dissolved Solids	ND	10.0	mg/L							
Duplicate (BFJ0421-DUP1)										
					Source: 2210222-01 Prepared: 10/17/22 Analyzed: 10/18/22					
Total Dissolved Solids	2080	10.0	mg/L		2050			1.69	20	

Summit Scientific

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

Project: Fagerberg Pad
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/21/22 14:59

Notes and Definitions

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

Attachment B



Borehole Logging Form

BOREHOLE ID: BH01	SITE NAME: Fagerberg Pad	CLIENT NAME: PDC ENERGY
Date Completed: 10/7/2022	Location: SE of Excavation	
Drilling Company: Tasman	Surface Completion: Flush Mount	DTW: 7' TD: 12'
Type of Drill: Direct Push	Geologist: David Vigil	Project Manager: B.Nelson
Bit Size : 3"	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		HA	100%	0.0		CL	Brown, clay, medium plasticity, dry, no odor	
2					0.0			
3					0.0			
4					0.0			
5					0.0			
6					0.0			
7			DP		0.0		CH	Tan, clay, high plasticity, moist, no odor
8					0.0		SM	Tan, silty sand, fine grained, poorly graded, saturated, no odor
9					0.0			
10					0.1			
11					0.0			
12					0.0			
13						CL	Tan, clay, low plasticity, dry, no odor, iron oxide staining	
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



Borehole Logging Form

BOREHOLE ID: BH02	SITE NAME: Fagerberg Pad	CLIENT NAME: PDC ENERGY
Date Completed: 10/7/2022	Location: E of excavation	
Drilling Company: Tasman	Surface Completion: Flush Mount	DTW: 7' TD: 12'
Type of Drill: Direct Push	Geologist: David Vigil	Project Manager: B.Nelson
Bit Size: 3"	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		HA	100%	0.0		CL	0-6": Brown clay, medium plasticity, dry, no odor	
2					0.0			
3					0.0			
4					0.0			
5					0.0			
6					0.0			
7			DP	100%	0.0		CH	6-7": Tan sandy clay, high plasticity, moist, no odor
8					0.0		SM	7-12": Tan, silty sand, fine grained, poorly graded, saturated, no odor
9					0.0			
10					0.0			
11					0.0			
12					0.0		CL	12": Light brown, clay, low plasticity, dry, no odor
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



TASMAN

Borehole Logging Form

BOREHOLE ID: Bto3 SITE NAME: Fagerberg Pad CLIENT NAME: PDC ENERGY

Date Completed: 10/7/2022 Location: NE of excavation

Drilling Company: Tasman Surface Completion: Flush Mount DTW: 4' TD: 12'

Type of Drill: Direct Push Geologist: David Vigil Project Manager: B. Nelson

Bit Size: 3" Logging Method:

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1	aa	HA	100%	0.0		CL	0-4': Brown clay, medium plasticity, dry, no odor
2	aa			0.0			
3	aa			0.0			
4	aa			0.0			
5	aa			0.0		SM	4-10': Tan, silty sand, fine grained, poorly graded, saturated, no odor
6	aa			0.0			
7	aa	DP	90%	0.0			
8	aa			0.0			
9	aa			0.2			
10	aa			0.2			
11	aa			0.1			
12	aa			0.0		CL	11-12': Light brown clay, low plasticity, dry, no odor
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



TASMAN

Borehole Logging Form

BOREHOLE ID: BH04	SITE NAME: Fagerberg Pad	CLIENT NAME: PDC ENERGY
Date Completed: 10/7/2022	Location: NW of excavation	
Drilling Company: Tasman	Surface Completion: Flush Mount	DTW: 4' TD: 12'
Type of Drill: Direct Push	Geologist: David Vigil	Project Manager: B. Nelson
Bit Size: 3"	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		HA	100%	0.0		CL	0-4': Brown, clay, medium plasticity, dry, no odor	
2					0.0			
3					0.0			
4					0.0			
5					0.0		SM	4-10': Tan, silty sand, fine grained, poorly graded, saturated, no odor
6					0.0			
7			DP	100%	0.0			
8					0.0			
9					0.0			
10					0.0			
11					0.0		CL	10-12': Light brown, clay, low plasticity, dry, no odor, iron oxide staining
12					0.0			
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



Borehole Logging Form

BOREHOLE ID: <u>BH05</u>	SITE NAME: <u>Fagerberg Pad</u>	CLIENT NAME: <u>PDC ENERGY</u>
Date Completed: <u>10/7/2022</u>	Location: <u>Wdf excavation</u>	
Drilling Company: <u>Tasman</u>	Surface Completion: <u>Flush Mount</u>	DTW: <u>6'</u> TD: <u>12'</u>
Type of Drill: <u>Direct Push</u>	Geologist: <u>David Vigil</u>	Project Manager: <u>B.Nelson</u>
Bit Size: <u>3"</u>	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	[Well Completion Diagram]	NA	100%	0.2		CL	0-4': Brown, clay, medium plasticity, dry, no odor	
2				0.4				
3				0.1				
4				0.0				
5				0.0			4-6': As above, moist	
6				0.0				
7			DP	100%	0.0		SM	6-11': Tan, silty sand, fine grained, poorly graded, saturated, no odor
8				80%	0.0			
9					0.0			
10					0.0			
11					0.0			
12					0.0		CL	11-12': Light brown, clay, low plasticity, dry, no odor
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



Borehole Logging Form

BOREHOLE ID: BH06	SITE NAME: Fagerberg Pad	CLIENT NAME: PDC ENERGY
Date Completed: 10/7/2022	Location: SW of excavation	
Drilling Company: Tasman	Surface Completion: Flush Mount	DTW: 4.1' TD: 12'
Type of Drill: Direct Push	Geologist: David Vigil	Project Manager: B. Nelson
Bit Size: 3"	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		HA	100%	0.0		CL	0-4': Brown, clay, medium plasticity, dry, no odor	
2					0.0			
3					0.0			
4					0.0			
5					0.0		SM	4-11': Tan, silty sand, fine grained, poorly graded, saturated, no odor
6					0.0			
7			DP	100%	0.0			
8					0.0			
9					0.0			
10					0.0			
11					0.0			
12					0.0		CL	11-12': Tan, clay, low plasticity, dry, no odor, iron oxide staining
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								



TASMAN

Borehole Logging Form

BOREHOLE ID: <u>BH07</u>	SITE NAME: <u>Fagerberg Pad</u>	CLIENT NAME: <u>PDC ENERGY</u>
Date Completed: <u>10/7/2022</u>	Location: <u>S of excavation</u>	
Drilling Company: <u>Tasman</u>	Surface Completion: <u>Flush Mount</u>	DTW: <u>5'</u> TD: <u>12'</u>
Type of Drill: <u>Direct Push</u>	Geologist: <u>David Vigil</u>	Project Manager: <u>B. Nelson</u>
Bit Size: <u>3"</u>	Logging Method:	

Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1		<u>HA</u>	<u>100%</u>	<u>0.0</u>		<u>CL</u>	<u>0-4': Brown, clay, medium plasticity, dry, no odor</u>	
2				<u>0.0</u>				
3				<u>0.0</u>				
4				<u>0.0</u>				
5				<u>0.0</u>			<u>4-5': As above, moist</u>	
6				<u>0.0</u>			<u>SM</u>	<u>5-7': Brown to tan, silty sand, fine grained, poorly graded, saturated no odor</u>
7			<u>DP</u>	<u>100%</u>	<u>0.0</u>			
8				<u>0.0</u>				<u>7-8': As above, iron oxide staining</u>
9				<u>90%</u>	<u>0.0</u>			<u>8-10': As above, no staining</u>
10					<u>0.0</u>			
11					<u>0.0</u>			
12					<u>0.0</u>		<u>CL</u>	<u>11-12': Light brown, clay, low plasticity, dry, no odor</u>
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								