



PDC Energy, Inc.
First Quarter 2022 Groundwater Monitoring Summary

February 23, 2022

Former Von Feldt #13-12 Wellhead
SWSW Section 12 T6N R65W
Remediation # 19634

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Von Feldt #13-12 Wellhead.

Site History and Background

On September 2, 2021, a historic hydrocarbon release was discovered at the former wellhead during wellhead decommissioning activities. Following the discovery, mitigation activities were initiated and approximately 8 cubic yards of impacted material were removed from the former excavation. During excavation activities, groundwater was encountered within the excavation at approximately 6 feet below ground surface (bgs).

Monitoring Well Installation Activities

On January 21, 2022, five monitoring wells (BH01 – BH05) were installed to confirm the absence of dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent. Lithologic descriptions and volatile organic compound (VOC) concentrations measured using a photoionization detector (PID) were recorded for each monitoring well. Additionally, two background soil borings (BKG02 – BKG03) were advanced in native material to a depth of approximately 7 feet bgs. Ten (10) soil samples were collected from depths ranging from 2.5 feet to 7 feet bgs and were submitted to Summit Scientific Laboratory for analysis of the Table 915-1 Metals Suite.

Analytical results received for background soil samples collected during monitoring well installation activities indicated that arsenic, barium, and selenium concentrations were in exceedance of the applicable COGCC Table 915-1 regulatory standards in both background soil boring locations. Additionally, arsenic, barium, lead, and selenium exceedances observed in soil samples collected from the former wellhead excavation extent are below 1.25x the background concentrations and indicative of native soil conditions. Soil boring locations are illustrated on Figure 1. Background soil analytical results and field summary data are summarized in Tables 1 and 2. The laboratory analytical report is included in Attachment A. The soil boring and well completion logs are included as Attachment B.

Groundwater Monitoring Activities

On January 25, 2022, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Due to poor recharge, inorganic parameter samples were collected on January 28, 2022. Five (5)

groundwater samples were submitted to Summit Scientific Laboratories 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.

First quarter 2022 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standards in all five monitoring well locations. Additionally, the sulfate anion concentration was in exceedance of the applicable COGCC Table 915-1 regulatory standard and above 1.25x the background concentrations of the up-gradient monitoring wells (BH03 and BH04) in monitoring well BH02. Inorganic parameters were in compliance with the applicable regulatory standards or within 1.25x the background concentrations in the remaining 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 first quarter 2022 and will remain the selected remediation strategy through the second quarter 2022.

Second quarter 2022 groundwater sampling will be conducted in April 2022.



DATE:	March 3, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	J. Marcus

**TASMAN**

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

PDC Energy, Inc. – DJ Basin
Former Von Feldt 13-12 Wellhead
SWSW, Section 12, Township 6 North, Range 65 West
Weld County, Colorado

**SOIL BORING
LOCATION MAP**

**FIGURE
1**

BH02	
Compound (µg/L)	1/25/2022
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)	9.51

BH05	
Compound (µg/L)	1/25/2022
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)	9.74

BH03	
Compound (µg/L)	1/25/2022
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)	9.69

BH04	
Compound (µg/L)	1/25/2022
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)	9.56

BH01	
Compound (µg/L)	1/25/2022
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)	9.77

Legend

Underground Flowline Location
(Collected via Trimble GPS)

Excavation Extent
(Collected via Trimble GPS)

Groundwater Sample Location

Monitoring Well Location
(Collected via Trimble GPS)

Groundwater Flow Direction (1Q22)

Notes

All locations are approximate unless otherwise noted.

µg/L – Micrograms per liter

TMB – Trimethylbenzene

ft. bgs – Feet below ground surface

GPS – Global Positioning System

0 ft.10 ft.20 ft.

Image Source: Google Earth; July 2019
Projection: WGS 84 UTM Zone 13 North

DATE: February 23, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: T. Murrel

TASMAN

Tasman, Inc.

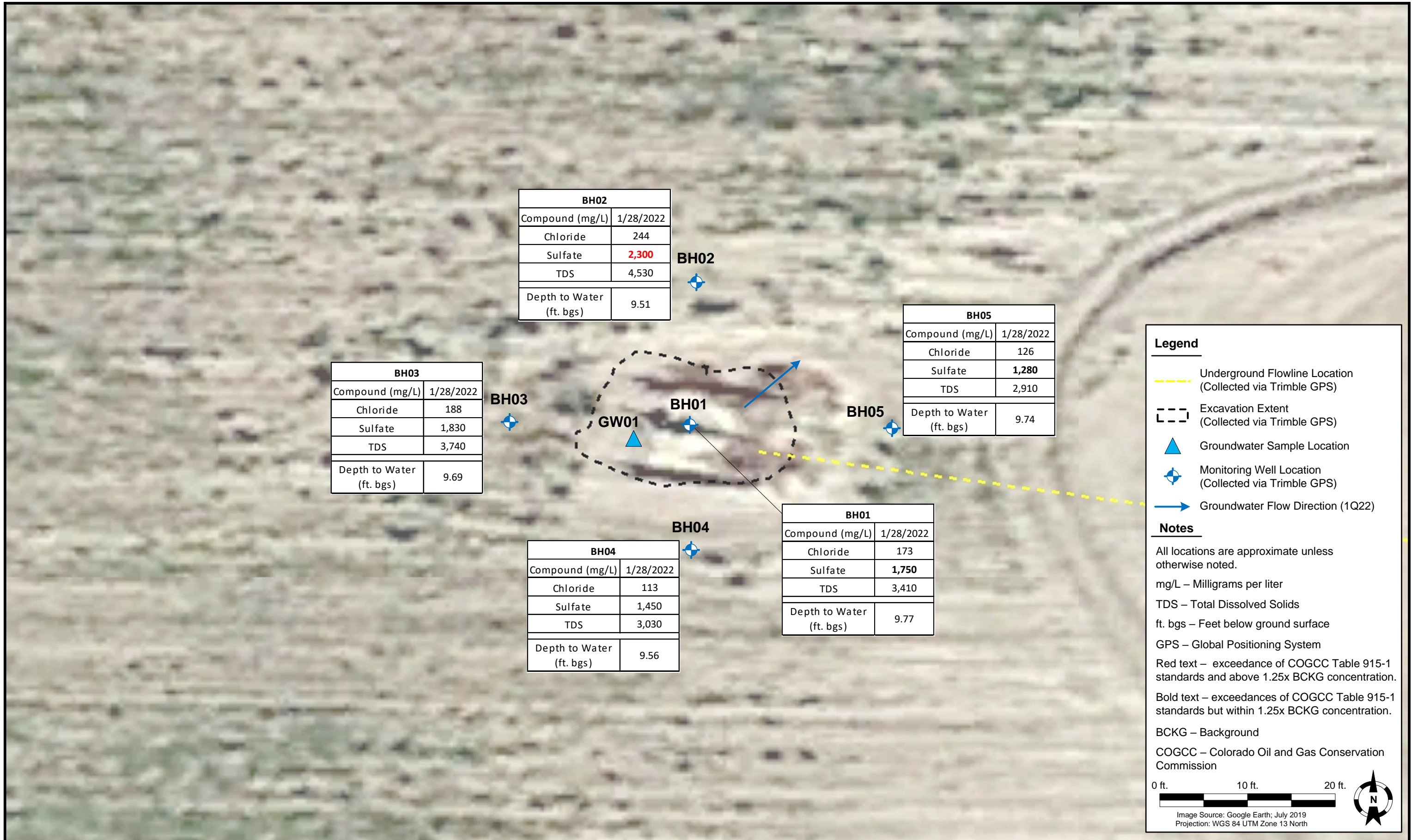
6855 W. 119th Ave.

Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Von Feldt 13-12 Wellhead
SWSW, Section 12, Township 6 North, Range 65 West
Weld County, Colorado

GROUNDWATER
ANALYTICAL RESULTS
MAP

FIGURE
2





DATE:	March 1, 2022
DESIGNED BY:	C. Hamlin
DRAWN BY:	L. Reed



TASMAN
Tasman, Inc.
6855 West 119th Avenue
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Von Feldt #13-12 Wellhead
SWSW, Section 12, Township 6 North, Range 65 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (1/25/2022)**

**FIGURE
4**

TABLE 1
FORMER VON FELDT 13-12 WELLHEAD
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
WH01 @ 6'	9/2/2021	6 ft. bgs	2.25	90.7	<0.247	<0.30 ⁽⁴⁾	2.33	7.06	1.53	0.343	0.0500	9.38
WH01-N @ 5'	9/2/2021	5 ft. bgs	3.92	78.7	<0.224	<0.30 ⁽⁴⁾	12.5	14.2	6.95	0.852	0.0424	39.3
BKG01 @ 5'	9/2/2021	5 ft. bgs	2.26	21.4	<0.227	<0.30 ⁽⁴⁾	2.41	2.73	3.01	0.364	<0.0227	15.2
BKG01 @ 6'	9/2/2021	6 ft. bgs	2.35	33.8	<0.227	<0.30 ⁽⁴⁾	3.55	3.88	4.99	0.454	<0.0227	19.7
BKG02 @ 2.5'	1/21/2022	2.5 ft. bgs	9.71	203	0.245	<0.30 ⁽⁴⁾	13.0	12.2	16.7	2.89	<0.139	60.0
BKG02 @ 3'	1/21/2022	3 ft. bgs	6.91	163	0.244	<0.30 ⁽⁴⁾	9.21	11.2	12.0	2.03	<0.135	37.6
BKG02 @ 5'	1/21/2022	5 ft. bgs	7.81	206	0.196	<0.30 ⁽⁴⁾	11.5	10.8	15.5	2.57	<0.143	50.2
BKG02 @ 6'	1/21/2022	6 ft. bgs	12.4	132	0.315	<0.30 ⁽⁴⁾	14.3	13.6	14.0	2.24	<0.133	52.7
BKG02 @ 7'	1/21/2022	7 ft. bgs	5.59	207	<0.186	<0.30 ⁽⁴⁾	10.4	9.63	7.61	1.42	<0.139	33.9
BKG03 @ 2.5'	1/21/2022	2.5 ft. bgs	8.56	201	0.256	<0.30 ⁽⁴⁾	13.6	12.0	18.0	3.01	<0.138	60.6
BKG03 @ 3'	1/21/2022	3 ft. bgs	8.38	166	0.207	<0.30 ⁽⁴⁾	13.4	11.3	17.7	3.03	<0.143	56.6
BKG03 @ 5'	1/21/2022	5 ft. bgs	14.2	1,260	<0.192	<0.30 ⁽⁴⁾	12.9	9.71	7.54	1.66	<0.144	46.9
BKG03 @ 6'	1/21/2022	6 ft. bgs	6.11	154	0.202	<0.30 ⁽⁴⁾	7.68	8.10	8.64	1.51	<0.138	30.0
BKG03 @ 7'	1/21/2022	7 ft. bgs	1.37	61.1	<0.170	<0.30 ⁽⁴⁾	2.17	6.42	1.46	0.752	<0.128	6.88

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.

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

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 2
FORMER VON FELDT 13-12 WELLHEAD
FIELD DATA SUMMARY TABLE

Sample ID	Date Sampled	Depth	GPS Data ⁽¹⁾ Latitude / Longitude		PDOP Value	VOC Concentration ⁽²⁾ (ppm)
WH01 @ 6'	9/2/2021	6 ft. bgs	40.49530631	-104.618470	1.0	2.8
FLR01 @ 3'	9/2/2021	3 ft. bgs	40.49530826	-104.618433	1.0	0.0
WH01-N @ 5'	9/2/2021	5 ft. bgs	40.49532292	-104.618464	1.1	0.1
WH01-W @ 5'	9/2/2021	5 ft. bgs	40.49531415	-104.618516	1.0	0.0
WH01-S @ 5'	9/2/2021	5 ft. bgs	40.49530069	-104.618457	1.1	0.0
WH01-E @ 5'	9/2/2021	5 ft. bgs	40.49530582	-104.618430	1.1	0.0
WHS01-N @ 0-6"	9/2/2021	0-6 in. bgs	40.49535581	-104.618446	1.0	0.1
WHS01-E @ 0-6"	9/2/2021	0-6 in. bgs	40.49529909	-104.618412	1.1	0.0
WHS01-S @ 0-6"	9/2/2021	0-6 in. bgs	40.49528211	-104.618464	1.0	0.1
WHS01-W @ 0-6"	9/2/2021	0-6 in. bgs	40.49531415	-104.618516	1.0	0.1
BKG01	9/2/2021	5-6 ft. bgs	40.49549568	-104.618052	1.1	0.0
BKG02	1/21/2022	7 ft. bgs	40.49524207	-104.618617	NC	0.1
BKG03	1/21/2022	7 ft. bgs	40.49540195	-104.618631	NC	0.1

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 = Not collected

TABLE 3
FORMER VON FELDT 13-12 WELLHEAD
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	-	-
BH01	1/25/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.77	4708.82
BH02	1/25/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.51	4708.70
BH03	1/25/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.69	4708.87
BH04	1/25/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.56	4708.79
BH05	1/25/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.74	4708.70

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
 - Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
- TMB = Trimethylbenzene
COGCC = Colorado Oil and Gas Conservation Commission
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
AMSL = Above Mean Sea Level

TABLE 4
FORMER VON FELDT 13-12 WELLHEAD
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG	-	-
BH01	1/28/2022	3,410	173	1,750	9.77	4708.82
BH02	1/28/2022	4,530	244	2,300	9.51	4708.70
BH03	1/28/2022	3,740	188	1,830	9.69	4708.87
BH04	1/28/2022	3,030	113	1,450	9.56	4708.79
BH05	1/28/2022	2,910	126	1,280	9.74	4708.70

Notes:

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

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

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

ft. = Feet

AMSL = Above Mean Sea Level

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

 = Up-gradient well location used for background concentration.

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

BOLD = Analytical result is in exceedance of applicable standard and above 1.25x background concentration.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 11, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: Von Feldt 13-12 Wellhead

Work Order #2201244

Enclosed are the results of analyses for samples received by Summit Scientific on 01/21/22 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG02@2.5'	2201244-01	Soil	01/21/22 11:45	01/21/22 17:00
BKG02@3'	2201244-02	Soil	01/21/22 11:50	01/21/22 17:00
BKG02@5'	2201244-03	Soil	01/21/22 11:55	01/21/22 17:00
BKG02@6'	2201244-04	Soil	01/21/22 12:00	01/21/22 17:00
BKG02@7'	2201244-05	Soil	01/21/22 12:05	01/21/22 17:00
BKG03@2.5'	2201244-06	Soil	01/21/22 12:10	01/21/22 17:00
BKG03@3'	2201244-07	Soil	01/21/22 12:15	01/21/22 17:00
BKG03@5'	2201244-08	Soil	01/21/22 12:20	01/21/22 17:00
BKG03@6'	2201244-09	Soil	01/21/22 12:25	01/21/22 17:00
BKG03@7'	2201244-10	Soil	01/21/22 12:30	01/21/22 17:00

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.

2201244

Page 1 of 1

Project Manager: Mark Longhurst
E-Mail: mark.longhurst@PDCE.com

Project Name: Vonfeldt 13-12 Wellhead
Project Number: A1A-

					Preservative				Matrix				Analysis Requested								Special Instructions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	q15-Metals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</

S₂

2201244

Sample Receipt Checklist

S2 Work Order#

Client: PDC/Tasman Client Project ID: Vonfeldt 13-12 WellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Temp (°C)	4.9
-----------	-----

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°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"/>	
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"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<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"/>	
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"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽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.

CS
Custodian Printed Name or Initials

1/21/22
Date/Time



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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG02@2.5'
2201244-01 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG02@3'
2201244-02 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 11:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG02@5'
2201244-03 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 11:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG02@6'
2201244-04 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG02@7'
2201244-05 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG03@2.5'
2201244-06 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG03@3'
2201244-07 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG03@5'
2201244-08 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG03@6'
2201244-09 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

BKG03@7'
2201244-10 (Soil)

Summit Scientific

Hexavalent Chromium by EPA Method 7196

Date Sampled: **01/21/22 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFA0477	01/28/22	01/28/22	EPA 7196A	

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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

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 BFA0477 - 3060A_Mod

Blank (BFA0477-BLK1)

Prepared & Analyzed: 01/28/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFA0477-BS1)

Prepared & Analyzed: 01/28/22

Chromium, Hexavalent 28.0 0.30 mg/kg wet 25.0 112 80-120

Duplicate (BFA0477-DUP1)

Source: 2201244-01

Prepared & Analyzed: 01/28/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFA0477-MS1)

Source: 2201244-01

Prepared & Analyzed: 01/28/22

Chromium, Hexavalent 32.0 0.30 mg/kg dry 30.8 ND 104 75-125

Matrix Spike Dup (BFA0477-MSD1)

Source: 2201244-01

Prepared & Analyzed: 01/28/22

Chromium, Hexavalent 32.6 0.30 mg/kg dry 30.8 ND 106 75-125 1.90 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.



Fremont
Analytical

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Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Summit Scientific
Paul Shrewsbury
4653 Table Mountain Dr
Golden, CO 80403

RE: 2201244
Work Order Number: 2201471

February 09, 2022

Attention Paul Shrewsbury:

Fremont Analytical, Inc. received 10 sample(s) on 1/28/2022 for the analyses presented in the following report.

Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

CC:
Muri Premer

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing
ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing
Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

www.fremontanalytical.com

CLIENT: Summit Scientific
Project: 2201244
Work Order: 2201471

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2201471-001	BKG01@2.5'	01/21/2022 11:45 AM	01/28/2022 11:11 AM
2201471-002	BKG01@3'	01/21/2022 11:50 AM	01/28/2022 11:11 AM
2201471-003	BKG02@5'	01/21/2022 11:55 AM	01/28/2022 11:11 AM
2201471-004	BKG02@6'	01/21/2022 12:00 PM	01/28/2022 11:11 AM
2201471-005	BKG02@7'	01/21/2022 12:05 PM	01/28/2022 11:11 AM
2201471-006	BKG03@2.5'	01/21/2022 12:10 PM	01/28/2022 11:11 AM
2201471-007	BKG03@3'	01/21/2022 12:15 PM	01/28/2022 11:11 AM
2201471-008	BKG03@5'	01/21/2022 12:20 PM	01/28/2022 11:11 AM
2201471-009	BKG03@6'	01/21/2022 12:25 PM	01/28/2022 11:11 AM
2201471-010	BKG03@7'	01/21/2022 12:30 PM	01/28/2022 11:11 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

CLIENT: Summit Scientific**Project:** 2201244

I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

- * - Flagged value is not within established control limits
- B - Analyte detected in the associated Method Blank
- D - Dilution was required
- E - Value above quantitation range
- H - Holding times for preparation or analysis exceeded
- I - Analyte with an internal standard that does not meet established acceptance criteria
- J - Analyte detected below Reporting Limit
- N - Tentatively Identified Compound (TIC)
- Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S - Spike recovery outside accepted recovery limits
- ND - Not detected at the Reporting Limit
- R - High relative percent difference observed

Acronyms:

- %Rec - Percent Recovery
- CCB - Continued Calibration Blank
- CCV - Continued Calibration Verification
- DF - Dilution Factor
- DUP - Sample Duplicate
- HEM - Hexane Extractable Material
- ICV - Initial Calibration Verification
- LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
- MCL - Maximum Contaminant Level
- MB or MBLANK - Method Blank
- MDL - Method Detection Limit
- MS/MSD - Matrix Spike / Matrix Spike Duplicate
- PDS - Post Digestion Spike
- Ref Val - Reference Value
- REP - Sample Replicate
- RL - Reporting Limit
- RPD - Relative Percent Difference
- SD - Serial Dilution
- SGT - Silica Gel Treatment
- SPK - Spike
- Surr - Surrogate



Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific

Project: 2201244

Lab ID: 2201471-001

Client Sample ID: BKG01@2.5'

Collection Date: 1/21/2022 11:45:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	9.71	0.111		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Barium	203	0.554		mg/Kg-dry	1	2/8/2022 1:17:37 PM
Cadmium	0.245	0.185		mg/Kg-dry	1	2/8/2022 1:17:37 PM
Copper	13.0	0.923		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Lead	12.2	0.185		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Nickel	16.7	0.462		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Selenium	2.89	0.185		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Silver	ND	0.139		mg/Kg-dry	1	2/7/2022 3:34:05 PM
Zinc	60.0	1.62		mg/Kg-dry	1	2/7/2022 3:34:05 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	18.6	0.500		wt%	1	2/3/2022 10:10:57 AM
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Lab ID: 2201471-002

Client Sample ID: BKG01@3'

Collection Date: 1/21/2022 11:50:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	6.91	0.108		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Barium	163	0.539		mg/Kg-dry	1	2/8/2022 1:20:18 PM
Cadmium	0.244	0.180		mg/Kg-dry	1	2/8/2022 1:20:18 PM
Copper	9.21	0.899		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Lead	11.2	0.180		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Nickel	12.0	0.450		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Selenium	2.03	0.180		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Silver	ND	0.135		mg/Kg-dry	1	2/7/2022 3:36:44 PM
Zinc	37.6	1.57		mg/Kg-dry	1	2/7/2022 3:36:44 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	17.0	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-003

Client Sample ID: BKG02@5'

Collection Date: 1/21/2022 11:55:00 AM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	7.81	0.115		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Barium	206	0.573		mg/Kg-dry	1	2/8/2022 1:23:00 PM
Cadmium	0.196	0.191		mg/Kg-dry	1	2/8/2022 1:23:00 PM
Copper	11.5	0.955		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Lead	10.8	0.191		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Nickel	15.5	0.478		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Selenium	2.57	0.191		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Silver	ND	0.143		mg/Kg-dry	1	2/7/2022 3:39:23 PM
Zinc	50.2	1.67		mg/Kg-dry	1	2/7/2022 3:39:23 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	17.6	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-004

Client Sample ID: BKG02@6'

Collection Date: 1/21/2022 12:00:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	12.4	0.106		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Barium	132	0.532		mg/Kg-dry	1	2/8/2022 1:25:41 PM
Cadmium	0.315	0.177		mg/Kg-dry	1	2/8/2022 1:25:41 PM
Copper	14.3	0.886		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Lead	13.6	0.177		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Nickel	14.0	0.443		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Selenium	2.24	0.177		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Silver	ND	0.133		mg/Kg-dry	1	2/7/2022 3:42:01 PM
Zinc	52.7	1.55		mg/Kg-dry	1	2/7/2022 3:42:01 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	15.1	0.500		wt%	1	2/3/2022 10:10:57 AM
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Lab ID: 2201471-005

Client Sample ID: BKG02@7'

Collection Date: 1/21/2022 12:05:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	5.59	0.111		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Barium	207	0.557		mg/Kg-dry	1	2/8/2022 1:28:23 PM
Cadmium	ND	0.186		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Copper	10.4	0.929		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Lead	9.63	0.186		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Nickel	7.61	0.464		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Selenium	1.42	0.186		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Silver	ND	0.139		mg/Kg-dry	1	2/7/2022 3:44:40 PM
Zinc	33.9	1.63		mg/Kg-dry	1	2/7/2022 3:44:40 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	18.4	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-006

Client Sample ID: BKG03@2.5'

Collection Date: 1/21/2022 12:10:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	8.56	0.111		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Barium	201	0.553		mg/Kg-dry	1	2/8/2022 1:31:04 PM
Cadmium	0.256	0.184		mg/Kg-dry	1	2/8/2022 1:31:04 PM
Copper	13.6	0.921		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Lead	12.0	0.184		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Nickel	18.0	0.461		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Selenium	3.01	0.184		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Silver	ND	0.138		mg/Kg-dry	1	2/7/2022 3:47:19 PM
Zinc	60.6	1.61		mg/Kg-dry	1	2/7/2022 3:47:19 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	16.5	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-007

Client Sample ID: BKG03@3'

Collection Date: 1/21/2022 12:15:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275 Analyst: EH

Arsenic	8.38	0.114		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Barium	166	0.570		mg/Kg-dry	1	2/8/2022 1:42:28 PM
Cadmium	0.207	0.190		mg/Kg-dry	1	2/8/2022 1:42:28 PM
Copper	13.4	0.951		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Lead	11.3	0.190		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Nickel	17.7	0.475		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Selenium	3.03	0.190		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Silver	ND	0.143		mg/Kg-dry	1	2/7/2022 3:49:58 PM
Zinc	56.6	1.66		mg/Kg-dry	1	2/7/2022 3:49:58 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000 Analyst: ALB

Percent Moisture	17.2	0.500		wt%	1	2/3/2022 10:10:57 AM
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Lab ID: 2201471-008

Client Sample ID: BKG03@5'

Collection Date: 1/21/2022 12:20:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275 Analyst: EH

Arsenic	14.2	0.115		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Barium	1,260	5.77	D	mg/Kg-dry	10	2/8/2022 1:45:09 PM
Cadmium	ND	0.192		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Copper	12.9	0.961		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Lead	9.71	0.192		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Nickel	7.54	0.480		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Selenium	1.66	0.192		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Silver	ND	0.144		mg/Kg-dry	1	2/7/2022 3:52:36 PM
Zinc	46.9	1.68		mg/Kg-dry	1	2/7/2022 3:52:36 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000 Analyst: ALB

Percent Moisture	18.1	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-009

Client Sample ID: BKG03@6'

Collection Date: 1/21/2022 12:25:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	6.11	0.110		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Barium	154	0.552		mg/Kg-dry	1	2/8/2022 1:47:51 PM
Cadmium	0.202	0.184		mg/Kg-dry	1	2/8/2022 1:47:51 PM
Copper	7.68	0.919		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Lead	8.10	0.184		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Nickel	8.64	0.460		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Selenium	1.51	0.184		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Silver	ND	0.138		mg/Kg-dry	1	2/7/2022 4:00:34 PM
Zinc	30.0	1.61		mg/Kg-dry	1	2/7/2022 4:00:34 PM

Sample Moisture (Percent Moisture)

Batch ID: R73000

Analyst: ALB

Percent Moisture	17.0	0.500		wt%	1	2/3/2022 10:10:57 AM
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Analytical Report

Work Order: 2201471
Date Reported: 2/9/2022

CLIENT: Summit Scientific
Project: 2201244

Lab ID: 2201471-010

Client Sample ID: BKG03@7'

Collection Date: 1/21/2022 12:30:00 PM

Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
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Total Metals by EPA Method 6020B

Batch ID: 35275

Analyst: EH

Arsenic	1.37	0.102		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Barium	61.1	0.510		mg/Kg-dry	1	2/8/2022 1:50:32 PM
Cadmium	ND	0.170		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Copper	2.17	0.850		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Lead	6.42	0.170		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Nickel	1.46	0.425		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Selenium	0.752	0.170		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Silver	ND	0.128		mg/Kg-dry	1	2/7/2022 4:03:13 PM
Zinc	6.88	1.49		mg/Kg-dry	1	2/7/2022 4:03:13 PM

Sample Moisture (Percent Moisture)

Batch ID: R73003

Analyst: ALB

Percent Moisture	14.2	0.500		wt%	1	2/3/2022 10:52:36 AM
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Work Order: 2201471
CLIENT: Summit Scientific
Project: 2201244

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: MB-35275		SampType: MBLK		Units: mg/Kg		Prep Date: 2/7/2022			RunNo: 73106		
Client ID: MBLKS		Batch ID: 35275					Analysis Date: 2/7/2022			SeqNo: 1492641	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	ND	0.0952
Barium	ND	0.476
Cadmium	ND	0.159
Copper	ND	0.794
Lead	ND	0.159
Nickel	ND	0.397
Selenium	ND	0.159
Silver	ND	0.119
Zinc	ND	1.39

Sample ID: LCS-35275		SampType: LCS			Units: mg/Kg		Prep Date: 2/7/2022			RunNo: 73106		
Client ID: LCSS		Batch ID: 35275			Analysis Date: 2/7/2022			SeqNo: 1492642				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Arsenic	40.4	0.0976	40.65	0	99.4	80	120
Barium	46.6	0.488	40.65	0	115	80	120
Cadmium	2.20	0.163	2.033	0	108	80	120
Copper	43.1	0.813	40.65	0	106	80	120
Lead	22.8	0.163	20.33	0	112	80	120
Nickel	40.1	0.407	40.65	0	98.6	80	120
Selenium	3.90	0.163	4.065	0	96.0	80	120
Silver	2.14	0.122	2.033	0	105	80	120
Zinc	39.5	1.42	40.65	0	97.2	80	120

Sample ID: 2202113-005AMS		SampType: MS			Units: mg/Kg-dry		Prep Date: 2/7/2022			RunNo: 73106		
Client ID: BATCH		Batch ID: 35275			Analysis Date: 2/7/2022			SeqNo: 1492645				
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	

Arsenic	44.9	0.107	44.50	2.039	96.3	75	125
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Work Order: 2201471
CLIENT: Summit Scientific
Project: 2201244

QC SUMMARY REPORT

Total Metals by EPA Method 6020B

Sample ID: 2202113-005AMS		SampType: MS		Units: mg/Kg-dry		Prep Date: 2/7/2022			RunNo: 73106		
Client ID: BATCH		Batch ID: 35275					Analysis Date: 2/7/2022			SeqNo: 1492645	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	109	0.534	44.50	61.47	107	75	125				
Cadmium	2.39	0.178	2.225	0.06034	105	75	125				
Copper	51.8	0.890	44.50	9.355	95.4	75	125				
Lead	23.0	0.178	22.25	1.857	95.2	75	125				
Nickel	68.3	0.445	44.50	28.00	90.5	75	125				
Selenium	5.32	0.178	4.450	0.8349	101	75	125				
Silver	2.04	0.133	2.225	0	91.8	75	125				
Zinc	60.8	1.56	44.50	20.09	91.4	75	125				

Sample ID: 2202113-005AMSD		SampType: MSD		Units: mg/Kg-dry		Prep Date: 2/7/2022			RunNo: 73106		
Client ID: BATCH		Batch ID: 35275		Analysis Date: 2/7/2022					SeqNo: 1492646		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	47.0	0.104	43.47	2.039	104	75	125	44.90	4.68	20	RS
Barium	134	0.522	43.47	61.47	167	75	125	109.1	20.5	20	
Cadmium	2.50	0.174	2.174	0.06034	112	75	125	2.390	4.67	20	
Copper	56.9	0.869	43.47	9.355	109	75	125	51.81	9.36	20	
Lead	24.3	0.174	21.74	1.857	103	75	125	23.04	5.23	20	
Nickel	72.9	0.435	43.47	28.00	103	75	125	68.27	6.58	20	
Selenium	5.14	0.174	4.347	0.8349	99.0	75	125	5.319	3.48	20	
Silver	2.07	0.130	2.174	0	95.2	75	125	2.043	1.32	20	
Zinc	62.7	1.52	43.47	20.09	98.1	75	125	60.79	3.17	20	

NOTES:

S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.
 R - High RPD observed.

Client Name: **SUMSCI**
 Logged by: **Clare Griggs**

Work Order Number: **2201471**
 Date Received: **1/28/2022 11:11:00 AM**

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
 2. How was the sample delivered? FedEx

Log In

3. Coolers are present? Yes ☒ No ☐ NA ☐
 4. Shipping container/cooler in good condition? Yes ☒ No ☐
 5. Custody Seals present on shipping container/cooler?
 (Refer to comments for Custody Seals not intact) Yes ☐ No ☐ Not Present ☒
 6. Was an attempt made to cool the samples? Yes ☐ No ☒ NA ☐
 7. Were all items received at a temperature of >2°C to 6°C * Unknown prior to receipt. Yes ☐ No ☐ NA ☒
 8. Sample(s) in proper container(s)? Yes ☒ No ☐
 9. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
 10. Are samples properly preserved? Yes ☒ No ☐
 11. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
 12. Is there headspace in the VOA vials? Yes ☐ No ☐ NA ☒
 13. Did all samples containers arrive in good condition(unbroken)? Yes ☒ No ☐
 14. Does paperwork match bottle labels? Yes ☒ No ☐
 15. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
 16. Is it clear what analyses were requested? Yes ☒ No ☐
 17. Were all holding times able to be met? Yes ☒ No ☐

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

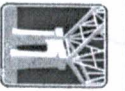
Person Notified:	<input type="text"/>	Date:	<input type="text"/>
By Whom:	<input type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input type="text"/>		
Client Instructions:	<input type="text"/>		

19. Additional remarks:

Item Information

Item #	Temp °C
Sample	9.4

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C



Fremont

Analytical

3600 Fremont Ave. N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 1.25.22

Page: 1 of 1

Project Name:

2201244

Laboratory Project No (Internal):

2201471

Special Remarks:

Client: Summit Scientific

Address: 4653 Table Mountain Drive

City, State, Zip: Golden, CO. 80403

Telephone: 303-277-9310

Fax:

Project No:

Collected by:

Location:

Report To (PM):

PM Email:

mpremer@s2scientific.com, psnewsbury@s2scientific.com

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*
1 BK6010251	1.21.22	1145	S
2 BK601031		1150	S
3 BK602051		1155	S
4 BK602061		1200	S
5 BK602071		1205	S
6 BK6030251		1210	S
7 BK603031		1215	S
8 BK603051		1220	S
9 BK603061		1225	S
10 BK603071		1230	S

915-Metals

Comments

915 Metals: As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

Turn-around Time: ☒ Standard ☐ 3 Day ☐ 2 Day ☐ Next Day ☐ Same Day (specify)

**Metals (Circle): ☐ Nitrate ☐ Nitrite ☐ Chloride ☐ Sulfate ☐ Bromide ☐ O-Phosphate ☐ Fluoride ☐ Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished ☒ Date/Time 1.25.22 1600

Retained ☒ Date/Time 1.25.22 1600

Received ☒ Date/Time 1.28.22 1111

Received ☒ Date/Time 1.28.22 1111

www.fremontanalytical.com



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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/11/22 12:38

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

February 03, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: Von Feldt 13-12 Wellhead

Work Order #2201301

Enclosed are the results of analyses for samples received by Summit Scientific on 01/25/22 15:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2201301-01	Water	01/25/22 13:53	01/25/22 15:36
BH02	2201301-02	Water	01/25/22 13:46	01/25/22 15:36
BH03	2201301-03	Water	01/25/22 13:48	01/25/22 15:36
BH04	2201301-04	Water	01/25/22 13:52	01/25/22 15:36
BH05	2201301-05	Water	01/25/22 13:50	01/25/22 15:36

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.

2201301

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@PDCF.com

City/State/Zip: Broomfield CO 80020

Phone: (303) 487-1228

Project Name: Von Feldt 13-12 wellhead

Sampler Name: Kris Shepherd

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	PEX	Natural	1,2,4TMB	1,3,5TMB		
1	BH01	1/25/22	1353	1			X		X					X	X	X	X	
2	BH02		1346	3			X		X									
3	BH03		1348	3			X		X									
4	BH04		1352	3			X		X									
5	BH05		1350	3			X		X									
6																		
7																		
8																		
9																		
10																		

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours — Sample Integrity: Temperature Upon Receipt: 8.4 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order#

2201301

Client: BOC/Tasman

Client Project ID:

Vonfeldt 13-12 wellheadShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

Matrix (check all that apply):

☐ Air☐ Soil/Solid☒ Water☐ Other:

(Describe)

Temp (°C)

8.4

Thermometer ID: G86A9201901378

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

Additional Comments (if any):

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

Custodian Printed Name or Initials

Date/Time

1.25.22



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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

BH01
2201301-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/22 13:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFA0493	01/31/22	02/01/22	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: **01/25/22 13:53**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

BH02
2201301-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/22 13:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BFA0493	01/31/22	02/01/22	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: **01/25/22 13:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

BH03
2201301-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/22 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0493	01/31/22	02/01/22	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: **01/25/22 13:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		117 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.8 %		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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

BH04
2201301-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/22 13:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0493	01/31/22	02/01/22	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: **01/25/22 13:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		117 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %		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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

BH05
2201301-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/25/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFA0493	01/31/22	02/01/22	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: **01/25/22 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		118 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.5 %		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: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

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 BFA0493 - EPA 5030 Water MS

Blank (BFA0493-BLK1)

Prepared & Analyzed: 01/31/22

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	15.9		"	13.3		120	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.2	21-167			

LCS (BFA0493-BS1)

Prepared & Analyzed: 01/31/22

Benzene	38.3	1.0	ug/l	33.3		115	51-132			
Toluene	38.4	1.0	"	33.3		115	51-138			
Ethylbenzene	39.0	1.0	"	33.3		117	58-146			
m,p-Xylene	76.9	2.0	"	66.7		115	57-144			
o-Xylene	38.4	1.0	"	33.3		115	53-146			
Naphthalene	38.9	1.0	"	33.3		117	70-130			
1,2,4-Trimethylbenzene	32.7	1.0	"	33.3		98.2	70-130			
1,3,5-Trimethylbenzene	41.5	1.0	"	33.3		125	70-130			
Surrogate: 1,2-Dichloroethane-d4	16.3		"	13.3		122	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.5	21-167			

Matrix Spike (BFA0493-MS1)

Source: 2201333-02

Prepared & Analyzed: 01/31/22

Benzene	39.2	1.0	ug/l	33.3	ND	118	34-141			
Toluene	38.7	1.0	"	33.3	ND	116	27-151			
Ethylbenzene	40.0	1.0	"	33.3	ND	120	29-160			
m,p-Xylene	78.7	2.0	"	66.7	ND	118	20-166			
o-Xylene	39.2	1.0	"	33.3	ND	118	33-159			
Naphthalene	41.8	1.0	"	33.3	ND	125	70-130			
1,2,4-Trimethylbenzene	32.9	1.0	"	33.3	ND	98.7	70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3	ND	128	70-130			
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		118	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.8	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: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

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 BFA0493 - EPA 5030 Water MS

Matrix Spike Dup (BFA0493-MSD1)		Source: 2201333-02			Prepared: 01/31/22 Analyzed: 02/01/22					
Benzene	39.3	1.0	ug/l	33.3	ND	118	34-141	0.255	30	
Toluene	39.6	1.0	"	33.3	ND	119	27-151	2.12	30	
Ethylbenzene	40.3	1.0	"	33.3	ND	121	29-160	0.573	30	
m,p-Xylene	79.2	2.0	"	66.7	ND	119	20-166	0.735	30	
o-Xylene	39.6	1.0	"	33.3	ND	119	33-159	1.12	30	
Naphthalene	35.1	1.0	"	33.3	ND	105	70-130	17.6	30	
1,2,4-Trimethylbenzene	33.6	1.0	"	33.3	ND	101	70-130	2.10	30	
1,3,5-Trimethylbenzene	42.7	1.0	"	33.3	ND	128	70-130	0.258	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	16.4		"	13.3		123	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	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: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/03/22 14:31

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

February 04, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

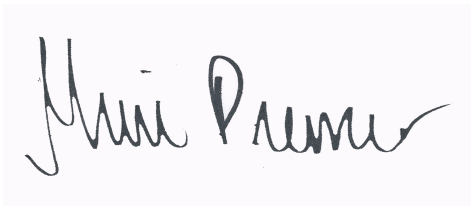
Denver, CO 80203

RE: Von Feldt 13-12 Wellhead

Work Order #2201369

Enclosed are the results of analyses for samples received by Summit Scientific on 01/28/22 15:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2201369-01	Water	01/28/22 14:00	01/28/22 15:45
BH02	2201369-02	Water	01/28/22 13:20	01/28/22 15:45
BH03	2201369-03	Water	01/28/22 12:50	01/28/22 15:45
BH04	2201369-04	Water	01/28/22 12:55	01/28/22 15:45
BH05	2201369-05	Water	01/28/22 13:40	01/28/22 15:45

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.


2201369

303-277-9310

Page 1 of 1


Project Number: 13-12

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	TMBs (1,2,4)&(1,3,5)	PAH - 915	Metals - 915	Cl, SO4, TDS		
1	BH01	1/28/22	1400	1			X		X													pH, EC, SAR by saturated paste
2	BH02	↓	1320	1			X		X													
3	BH03		1250	1			X		X													
4	BH04		1255	1			X		X													
5	BH05		1340	1			X		X													
6																						
7																						
8																						
9																						
10																						

Relinquished by: 
Date/Time: 1/28/22 1545

Received by: Tasman's Lock Box
Date/Time:

Relinquished by: Tasman's Lock Box
Date/Time:

Received by: 
Date/Time: 12822 1545

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: 7.2
Samples Intact: ☒ Yes No

Notes:

S₂

Sample Receipt Checklist

S2 Work Order#

2201369

Client: Poc/Tasman Client Project ID: Van Adt 12-13 DU wellhead

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

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

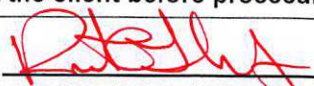
Temp (°C)

7.2

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°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
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"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
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"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽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 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 or Initials
12822
Date/Time



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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

BH01
2201369-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **01/28/22 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	173	12.0	mg/L	200	BFB0007	02/01/22	02/02/22	EPA 300.0	
Sulfate	1750	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **01/28/22 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	3410	10.0	mg/L	1	BFA0505	01/31/22	01/31/22	SM2540C	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

BH02
2201369-02 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **01/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	244	12.0		mg/L	200	BFB0007	02/01/22	02/02/22	EPA 300.0	
Sulfate	2300	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **01/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	4530	10.0		mg/L	1	BFA0505	01/31/22	01/31/22	SM2540C	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

BH03
2201369-03 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **01/28/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	188	12.0		mg/L	200	BFB0007	02/01/22	02/02/22	EPA 300.0	
Sulfate	1830	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **01/28/22 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	3740	10.0		mg/L	1	BFA0505	01/31/22	01/31/22	SM2540C	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

BH04
2201369-04 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **01/28/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	113	12.0		mg/L	200	BFB0007	02/01/22	02/02/22	EPA 300.0	
Sulfate	1450	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **01/28/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	3030	10.0		mg/L	1	BFA0505	01/31/22	01/31/22	SM2540C	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

BH05
2201369-05 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **01/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	126	12.0		mg/L	200	BFB0007	02/01/22	02/02/22	EPA 300.0	
Sulfate	1280	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **01/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	2910	10.0		mg/L	1	BFA0505	01/31/22	01/31/22	SM2540C	

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BFB0007 - General Preparation

Blank (BFB0007-BLK1)

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

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BFB0007-BS1)

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

Chloride	3.17	0.0600	mg/L	3.00	106	90-110
Sulfate	14.4	0.300	"	15.0	95.8	90-110

Duplicate (BFB0007-DUP1)

Source: 2201351-06

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

Chloride	25.6	12.0	mg/L	22.8	11.6	20
Sulfate	151	60.0	"	156	3.25	20

Matrix Spike (BFB0007-MS1)

Source: 2201351-06

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

Chloride	680	12.0	mg/L	600	22.8	110	80-120
Sulfate	3050	60.0	"	3000	156	96.6	80-120

Summit Scientific

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

Project: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BFA0505 - General Preparation

Blank (BFA0505-BLK1)

Prepared & Analyzed: 01/31/22

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BFA0505-DUP1)

Source: 2201369-01

Prepared & Analyzed: 01/31/22

Total Dissolved Solids 3370 10.0 mg/L 3410 1.39 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: Von Feldt 13-12 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/04/22 14:33

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: B401		SITE NAME: Von Feldt 13-12 Wt1		CLIENT NAME: PDC ENERGY			
Date Completed: 1/21/22		Location: Source					
Drilling Company: Tasman		Surface Completion: Riser		DTW: 845' TD: 11'			
Type of Drill: Power Probe 9580		Geologist: Kris Shepherd		Project Manager: B. Nelson			
Bit Size: 2 3/8"		Logging Method:					
Well Const. Material: Diameter: 1"		Screen: Sch 40 PVC Slotted 0.010		Riser: Sch 40 PVC Blank			
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SP	Brown, sand, fine grain, well sorted, moist, no odor
2				0.0			
3				0.1			
4		HA	100%	0.0			-As above, trace fines
5				0.1			-As above, saturated
6				0.2			
7				0.0		SC	Tan to Brown, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor
8				0.0			
9		DP	90%	0.0			
10				0.2		SP	Tan, sand, fine grain, well sorted, saturated, no odor
11				0.0			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH02		SITE NAME: Van Heit 13-12 W-1		CLIENT NAME: PDC ENERGY			
Date Completed: 1/21/22		Location: N of Source					
Drilling Company: Tasman		Surface Completion: Flush		DTW: 8'4.5'		TD: 11'	
Type of Drill: Power Probe 9580		Geologist: Kris Shepherd		Project Manager: B. Nelson			
Bit Size: 2 3/8"		Logging Method:					
Well Const. Material: Diameter: 1"		Screen: Sch 40 PVC Slotted 0.010		Riser: Sch 40 PVC Blank			
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SP	Brown, sand, fine grain, well sorted, moist, no odor
2				0.0			
3		HA	100%	0.0			
4				0.0			
5				0.0			- As above, trace fines - As above, saturated
6				0.0			
7				0.0		SP	Tan, sand, fine grain, well sorted, saturated, no odor
8				0.0			
9		DP	90%	0.0			
10				0.1		SC	Tan to brown, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor
11				0.3			
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							



Borehole Logging Form

BOREHOLE ID: BH03 SITE NAME: Venfeldt 13-12 WH CLIENT NAME: PDC ENERGY

Date Completed: 1/21/22 Location: W of Source

Drilling Company: Tasman Surface Completion: Riser DTWAS' TD: 11'

Type of Drill: Power Probe 9580 Geologist: Mike Connelly / Kris Shepherd Project Manager: B. Nelson

Bit Size: 2 3/8" Logging Method:

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

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SP	Brown, sand, fine grain, well sorted, moist, no odor
2				0.0			
3		HA	100%	0.0			
4				0.0			-As above, trace fines
5				0.0		SW	Brown, sand, fine to medium grain, poorly sorted, saturated, no odor
6				0.0			
7				0.0		SP	Tan, sand, fine grain, well sorted, saturated, no odor
8				0.0		SC	Tan, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor
9		DP	100%	0.1		SP	Tan, sand, fine grain, well sorted, low plasticity, saturated, no odor
10				0.0			
11				0.2			-As above
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

Borehole Logging Form

BOREHOLE ID: BH04		SITE NAME: Vanfebt 13-12 WH		CLIENT NAME: PDC ENERGY	
Date Completed: 1/21/22		Location: S of Source			
Drilling Company: Tasman		Surface Completion: Riser		DTW: 8' 4.5' TD: 7' 11"	
Type of Drill: Power Probe 9580		Geologist: Kate Shepherd		Project Manager: B. Nelson	
Bit Size: 2 3/8		Logging Method:			
Well Const. Material: Diameter: 1" Screen: Sch 40 PVC Slotted 0.010 Riser: Sch 40 PVC Blank					

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SP	Brown sand, fine grain, well sorted, moist, no odor
2				0.0			
3		HA	100%	0.0			
4				0.0			
5				0.1			-As above, trace fines -As above, saturated
6				0.0		SW	Brown sand, fine to medium grain, poorly sorted, saturated, no odor
7				0.0		SC	Tan to Brown, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor
8				0.1		SP	Brown, sand, fine grain, well sorted, saturated, no odor
9		DP	90%				-As above, tan
10				0.0			
11				0.1			
12							
13							
14							
15							
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Borehole Logging Form

BOREHOLE ID: BH05 SITE NAME: Von Welt 13-12 WH CLIENT NAME: PDC ENERGY

Date Completed: 1/21/22 Location: E. of Source

Drilling Company: Tasman Surface Completion: Flush DTW: 8'4.5' TD: 11'

Type of Drill: 9880 Power Probe Geologist: Kris Shepherd Project Manager: B. Nelson

Bit Size: 23/8" Logging Method:

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

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1				0.0		SP	Brown, sand, fine grain, well sorted, moist, no odor
2				0.0			
3		HA	100%	0.0			
4				0.0			
5				0.0			-As above, saturated
6				0.0			-As above, trace fines
7				0.0		SP	Brown, sand, trace fines, fine grain, well sorted, saturated, no odor
8				0.0			
9		DP	80%				
10				0.1			-As above, tan, no trace fines
11				0.0			
12							
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**TASMAN****Borehole Logging Form**

BOREHOLE ID: <u>BK602</u>		SITE NAME: <u>Vonfeldt 13-12 WH</u>		CLIENT NAME: <u>PDC ENERGY</u>			
Date Completed: <u>1/21/22</u>		Location: <u>SW of POC</u>					
Drilling Company: <u>Tasman</u>		Surface Completion: <u>R</u>		DTW: <u>4.5'</u> TD: <u>7'</u>			
Type of Drill: <u>Hand Auger</u>		Geologist: <u>M. Connolly</u>		Project Manager: <u>B. Nelson</u>			
Bit Size: <u>2 3/8"</u>		Logging Method: _____					
Well Const. Material: Diameter: _____		Screen: _____		Riser: _____			
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1	NA			0.0		SP	Brown, Sand, fine grain, well sorted, moist, no odor
2				0.0			
3				0.0	BK602@1.5' (1145)	CL	Brown, clay, medium plasticity, moist, no odor
4		HA	100%	0.1	BK602@3' (1160)		
5				0.0	BK602@5' (1155)		- As above, saturated
6				0.1	BK602@6' (1200)	SC	Brown, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor
7				0.0	BK602@7' (1205)		
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**TASMAN****Borehole Logging Form**

BOREHOLE ID: <u>BK603</u>		SITE NAME: <u>Vanfeldt 13-12 WH</u>		CLIENT NAME: <u>PDC ENERGY</u>			
Date Completed: <u>1/21/22</u>		Location: <u>NW of POC</u>					
Drilling Company: <u>Tasman</u>		Surface Completion: <u>—</u>		DTW: <u>84.5'</u> TD: <u>7'</u>			
Type of Drill: <u>Hard Auger</u>		Geologist: <u>M. Connolly</u>		Project Manager: <u>B. Nelson</u>			
Bit Size: <u>2 3/8"</u>		Logging Method: <u>—</u>					
Well Const. Material: <u>—</u>		Diameter: <u>—</u>		Screen: <u>—</u>			
				Riser: <u>—</u>			
Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description
1	NA			0.0		SP	Brown, sand, fine grain, well sorted, moist, no odor
2				0.0			
3				0.0	BK603@25' (1210)	CL	Brown, clay, medium plasticity, moist, no odor
4		HA	100%	0.1	BK603@3' (1215)		
5				0.0	BK603@5' (1220)		
6			0.0	BK603@6' (1225)	SC	As above, saturated, Brown, clayey sand, fine grain, well sorted, low plasticity, saturated, no odor	
7			0.1	BK603@7' (1230)			
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