



PDC Energy, Inc.
Fourth Quarter 2022 Groundwater Monitoring Summary

January 5, 2023

Former Churchill 5 Wellhead
NENW Section 28 T5N R64W
Remediation # 20066

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Churchill 5 wellhead location.

Site History and Background

On October 10, 2021, groundwater was encountered within the former wellhead excavation at approximately 6 feet below ground surface (bgs) during wellhead decommissioning activities. Analytical results received from the groundwater sample (GW05) collected from the base of the excavation indicated that the benzene concentration was in exceedance of the applicable COGCC Table 915-1 regulatory standards. No impacted soil was identified or removed during decommissioning activities. On August 12, 2022, five monitoring wells (BH01 – BH05) were installed to delineate dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent (Figure 1). Based on groundwater analytical results collected during the initial groundwater monitoring assessment, chloride and sulfate anions and TDS were not sampled during the fourth quarter 2022. The analyte reduction request was included in the third quarter 2022 Supplemental Form 27 (Document No. 403193102) and is pending review.

Groundwater Monitoring Activities

On December 28, 2022, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Five groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B.

Fourth quarter 2022 analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 regulatory standards in all five monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Groundwater analytical results are summarized in Table 1. 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 third quarter 2022 and will remain the selected remediation strategy through the first quarter 2023.

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

BH02		
Compound (µg/L)	9/14/2022	12/28/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	7.39	7.14

BH01		
Compound (µg/L)	9/14/2022	12/28/2022
Benzene	2.5	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	6.93	6.70

BH03		
Compound (µg/L)	9/14/2022	12/28/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	6.76	6.58

BH05		
Compound (µg/L)	9/14/2022	12/28/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	6.85	6.56

BH04		
Compound (µg/L)	9/14/2022	12/28/2022
Benzene	<1.0	<1.0
Toluene	<1.0	<1.0
Ethylbenzene	<1.0	<1.0
Total Xylenes	<2.0	<2.0
Naphthalene	<1.0	<1.0
1,2,4-TMB	<1.0	<1.0
1,3,5-TMB	<1.0	<1.0
Depth to Water (ft. bgs)	7.06	6.77

Legend

- Excavation Extent (Collected via Trimble GPS)
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (4Q22)
- Excavation Groundwater Sample Location (Collected via Trimble GPS)
- Underground Flowline Location (Collected via Trimble GPS)

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. 15 ft. 30 ft.

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

DATE: January 5, 2023
 DESIGNED BY: C. Hamlin
 DRAWN BY: G. Semenza

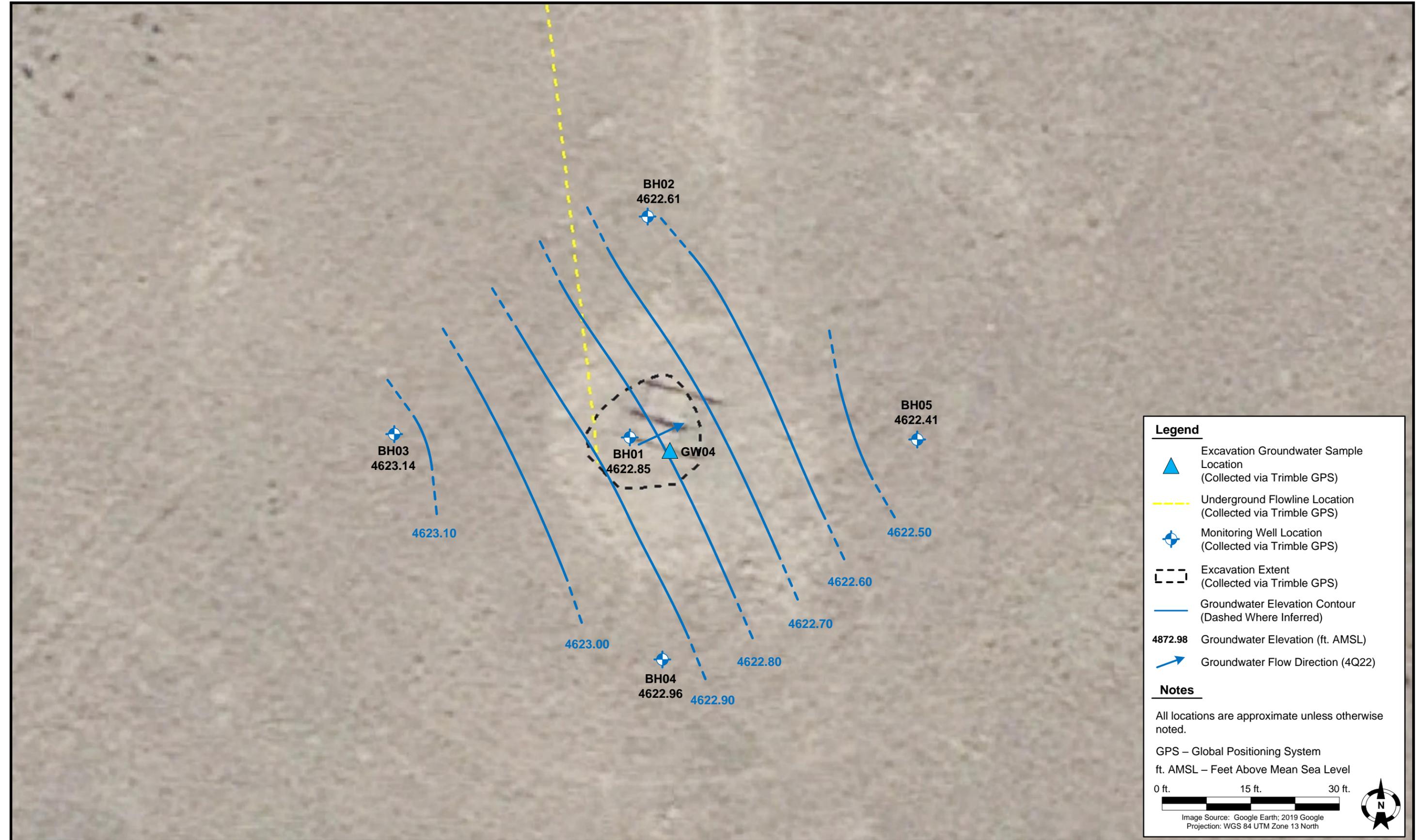


Tasman, Inc.
 6855 W. 119th Ave
 Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Churchill 5 Wellhead
 NENW, Section 28, Township 5 North, Range 64 West
 Weld County, Colorado

GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE 1



DATE: January 23, 2023

DESIGNED BY: C. Hamlin

DRAWN BY: L. Reed



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

PDC Energy, Inc. – DJ Basin
Former Churchill 5 Wellhead
 NENW, Section 28, Township 5 North, Range 64 West
 Weld County, Colorado

**GROUNDWATER
 ELEVATION CONTOUR
 MAP (12/28/2022)**

**FIGURE
 2**

**TABLE 1
FORMER CHURCHILL 5 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	-	-
GW04	10/19/2021	7.1	13	<1.0	11	<1.0	1.3	<1.0	6	NA
BH01	9/14/2022	2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.93	4622.62
BH01	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.70	4622.85
BH02	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.39	4622.36
BH02	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.14	4622.61
BH03	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.76	4622.96
BH03	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.58	4623.14
BH04	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.06	4622.67
BH04	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.77	4622.96
BH05	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.12
BH05	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.56	4622.41

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 COGCC standards

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 04, 2023

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Churchill 5 Wellhead

Work Order #2212552

Enclosed are the results of analyses for samples received by Summit Scientific on 12/28/22 17:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



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

Project: Churchill 5 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/04/23 12:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2212552-01	Water	12/28/22 10:40	12/28/22 17:55
BH02	2212552-02	Water	12/28/22 10:50	12/28/22 17:55
BH03	2212552-03	Water	12/28/22 11:05	12/28/22 17:55
BH04	2212552-04	Water	12/28/22 11:20	12/28/22 17:55
BH05	2212552-05	Water	12/28/22 11:35	12/28/22 17:55

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

2212552

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

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: Churchill 5 Wellhead
 Sampler Name: Robert Aronoff 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	BTEX	Naphthalene	1,2,4 TMB	1,3,5 TMB	Cl	SO4		TDS		
1	BH01	12/28/22	10:40	4			X		X				X	X	X	X	X	X	X			
2	BH02	↓	10:50	↓																		
3	BH03		11:05																			
4	BH04		11:20																			
5	BH05		11:35																			
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 12/28/2022 15:10	Received by: Tasman's Lock Box	Date/Time: 12/28/2022 15:10	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 7.3 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: * Place Inorganics (Cl, SO4, TDS) on hold
Relinquished by: Tasman's Lock Box	Date/Time: 12/28/22 1755	Received by: 	Date/Time: 12/28/22 1755		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2212552

Client: Beitrasman Client Project ID: Churchill Swellhead

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

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

Temp (°C) 7.3 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>over 7 de</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input 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.

DS
Custodian Printed Name 12-28-22 1758
Date/Time



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

Project: Churchill 5 Wellhead
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

BH01
2212552-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/28/22 10:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFL0737	12/30/22	12/31/22	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: **12/28/22 10:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.3	99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.6	102 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Churchill 5 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

BH02
2212552-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/28/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFL0737	12/30/22	12/31/22	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: **12/28/22 10:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.2	99.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.0	97.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.2	98.9 %		21-167		"	"	"	"	

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

Project: Churchill 5 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

BH03
2212552-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/28/22 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFL0737	12/30/22	12/31/22	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: **12/28/22 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.4	101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.7 %		21-167		"	"	"	"	

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

Project: Churchill 5 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

BH04
2212552-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFL0737	12/30/22	12/31/22	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: **12/28/22 11:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	13.4	101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	100 %	21-167		"	"	"	"	

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

Project: Churchill 5 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

BH05
2212552-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/28/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFL0737	12/30/22	12/31/22	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: **12/28/22 11:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.4	101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.6 %		21-167		"	"	"	"	

Summit Scientific

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

Project: Churchill 5 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/04/23 12:19

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 BFL0737 - EPA 5030 Water MS

Blank (BFL0737-BLK1)

Prepared: 12/30/22 Analyzed: 12/31/22

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	13.4		"	13.3		100	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.8	21-167			

LCS (BFL0737-BS1)

Prepared: 12/30/22 Analyzed: 12/31/22

Benzene	38.4	1.0	ug/l	41.7		92.2	51-132			
Toluene	38.2	1.0	"	41.7		91.6	51-138			
Ethylbenzene	41.3	1.0	"	41.7		99.2	58-146			
m,p-Xylene	82.3	2.0	"	83.3		98.8	57-144			
o-Xylene	39.3	1.0	"	41.7		94.2	53-146			
Naphthalene	31.8	1.0	"	41.7		76.3	70-130			
1,2,4-Trimethylbenzene	43.8	1.0	"	41.7		105	70-130			
1,3,5-Trimethylbenzene	45.1	1.0	"	41.7		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.3	23-173			
Surrogate: Toluene-d8	12.9		"	13.3		97.0	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	21-167			

Matrix Spike (BFL0737-MS1)

Source: 2212552-02

Prepared: 12/30/22 Analyzed: 12/31/22

Benzene	38.2	1.0	ug/l	41.7	ND	91.7	34-141			
Toluene	38.3	1.0	"	41.7	ND	91.8	27-151			
Ethylbenzene	40.9	1.0	"	41.7	ND	98.1	29-160			
m,p-Xylene	81.8	2.0	"	83.3	ND	98.2	20-166			
o-Xylene	39.1	1.0	"	41.7	ND	93.9	33-159			
Naphthalene	35.0	1.0	"	41.7	ND	84.1	70-130			
1,2,4-Trimethylbenzene	43.3	1.0	"	41.7	ND	104	70-130			
1,3,5-Trimethylbenzene	44.7	1.0	"	41.7	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.2	21-167			

Summit Scientific

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



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

Project: Churchill 5 Wellhead

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/04/23 12:19

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 BFL0737 - EPA 5030 Water MS

Matrix Spike Dup (BFL0737-MSD1)	Source: 2212552-02			Prepared: 12/30/22 Analyzed: 12/31/22					
Benzene	38.0	1.0	ug/l	41.7	ND	91.2	34-141	0.472	30
Toluene	37.7	1.0	"	41.7	ND	90.5	27-151	1.47	30
Ethylbenzene	40.3	1.0	"	41.7	ND	96.7	29-160	1.38	30
m,p-Xylene	80.2	2.0	"	83.3	ND	96.3	20-166	1.97	30
o-Xylene	38.5	1.0	"	41.7	ND	92.4	33-159	1.57	30
Naphthalene	37.2	1.0	"	41.7	ND	89.4	70-130	6.03	30
1,2,4-Trimethylbenzene	42.2	1.0	"	41.7	ND	101	70-130	2.50	30
1,3,5-Trimethylbenzene	43.5	1.0	"	41.7	ND	104	70-130	2.56	30
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173		
Surrogate: Toluene-d8	13.0		"	13.3		97.5	20-170		
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5	21-167		

Summit Scientific

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

Project: Churchill 5 Wellhead

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/04/23 12:19

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