



## **PDC Energy, Inc.**

### **Second Quarter 2024 Groundwater Monitoring Summary**

July 1, 2024

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 ECMC 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). Per the approved Supplemental Form 27 (Document No. 403540311), total dissolved solids (TDS), chloride, and sulfate were removed from the quarterly sampling and analysis plan following the third quarter 2023.

#### **Groundwater Monitoring Activities**

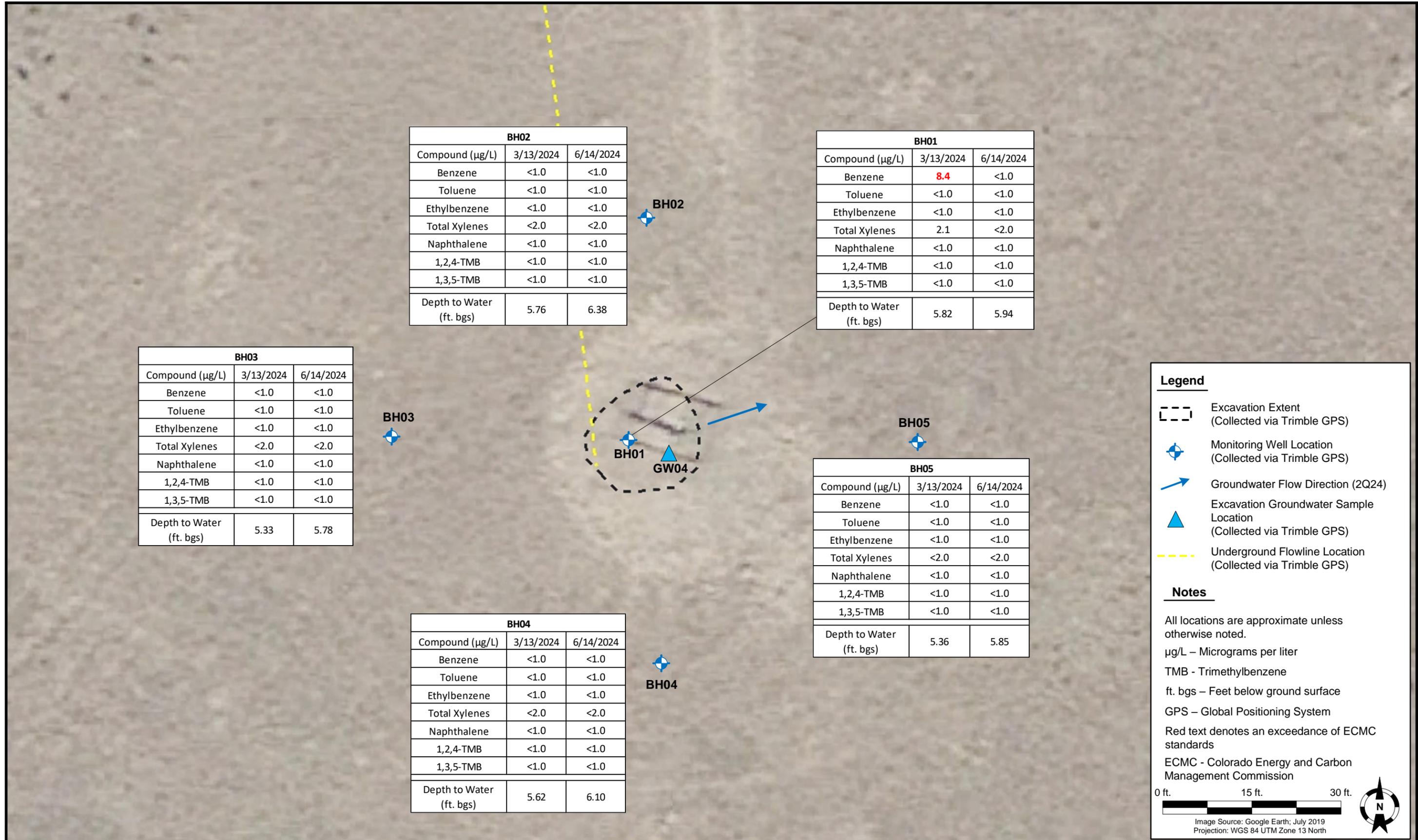
On June 14, 2024, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Five groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB by EPA Method 8260B in accordance with Table 915-1 standards.

Second quarter 2024 analytical results indicated that organic compound concentrations were in compliance with the applicable 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 third quarter 2024.

Third quarter 2024 groundwater sampling will be conducted in September 2024.



DATE: July 1, 2024

DESIGNED BY: C. Hamlin

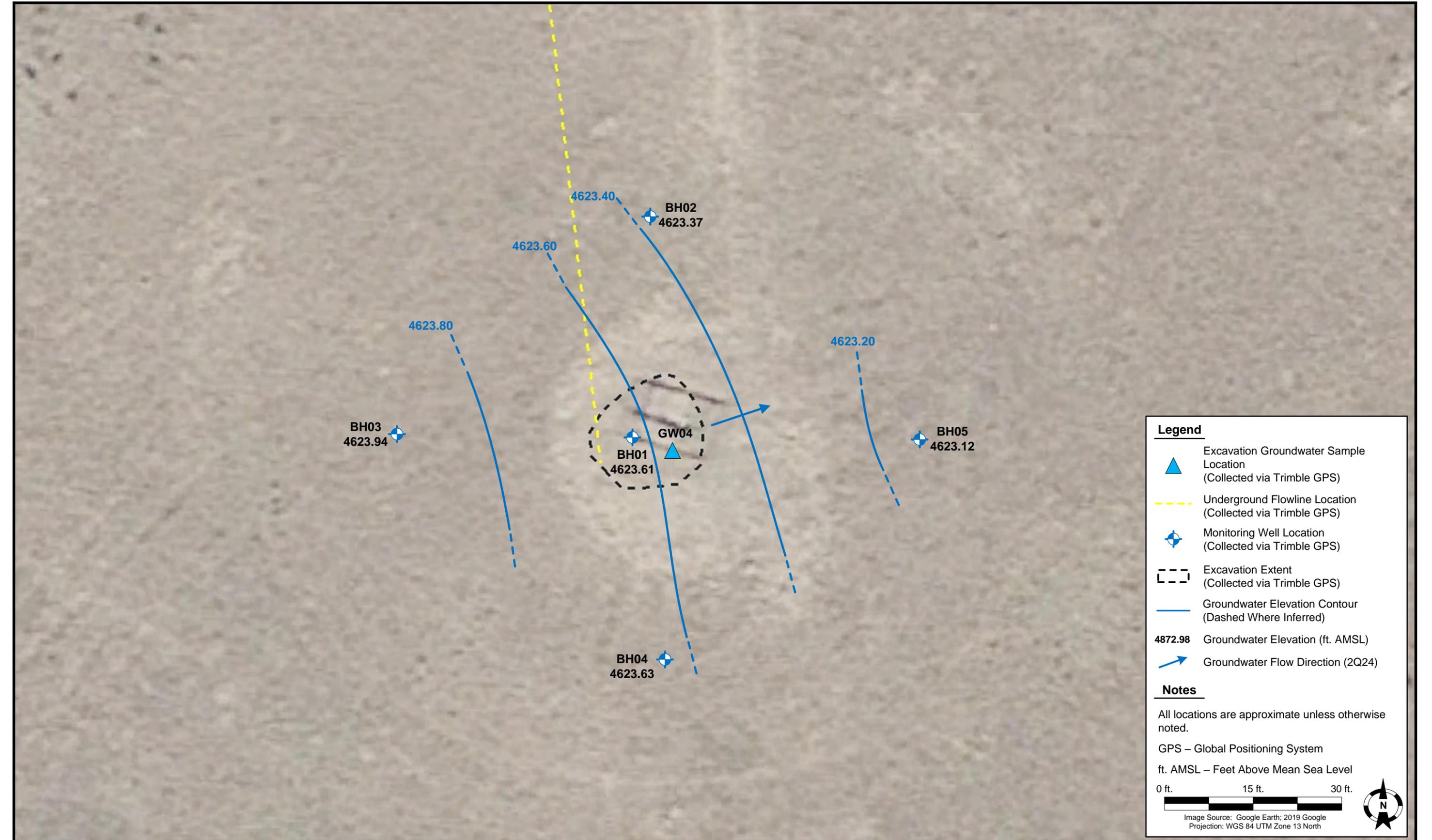
DRAWN BY: L. Moran



**PDC Energy, Inc. (69175) – DJ Basin**  
**Former Churchill 5 Wellhead**  
 NENW, Section 28, Township 5 North, Range 64 West  
 Weld County, Colorado

**GROUNDWATER**  
**ANALYTICAL RESULTS**  
**MAP**

**FIGURE**  
**1**



**Legend**

- Excavation Groundwater Sample Location (Collected via Trimble GPS)
- Underground Flowline Location (Collected via Trimble GPS)
- Monitoring Well Location (Collected via Trimble GPS)
- Excavation Extent (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed Where Inferred)
- 4872.98** Groundwater Elevation (ft. AMSL)
- Groundwater Flow Direction (2Q24)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

ft. AMSL – Feet Above Mean Sea Level

0 ft.      15 ft.      30 ft.

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



DATE:	July 24, 2024
DESIGNED BY:	B. Nelson
DRAWN BY:	J. Clonts



**Tasman, Inc.**  
6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

**PDC Energy, Inc. (69175) – DJ Basin**  
**Former Churchill 5 Wellhead**  
NENW, Section 28, Township 5 North, Range 64 West  
Weld County, Colorado

**GROUNDWATER  
ELEVATION CONTOUR  
MAP (06/14/2024)**

**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 <sup>(2)</sup> (ft.)	Groundwater Elevation (ft. AMSL)
<b>ECMC Table 915-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>-</b>	<b>-</b>
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
BH01	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.43	4623.12
BH01	6/1/2023	18	44	<1.0	6.6	<1.0	<1.0	<1.0	4.04	4625.51
BH01	9/5/2023	1.8	4.5	<1.0	<2.0	<1.0	<1.0	<1.0	5.34	4624.21
BH01	12/28/2023	44	<1.0	<1.0	5.5	<1.0	<1.0	<1.0	5.59	4623.96
BH01	3/13/2024	8.4	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	5.59	4623.73
BH01	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.94	4623.61
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
BH02	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.90
BH02	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.45	4625.30
BH02	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.61	4624.14
BH02	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.38	4623.37
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
BH03	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.25	4623.47
BH03	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.87	4625.85
BH03	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.17	4624.55
BH03	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.13	4624.59
BH03	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.33	4624.39
BH03	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.78	4623.94
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
BH04	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.50	4623.23
BH04	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.16	4625.57
BH04	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.52	4624.21
BH04	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.48	4624.25
BH04	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.62	4624.11
BH04	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.10	4623.63
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
BH05	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.30	4622.67
BH05	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.94	4625.03
BH05	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.28	4623.69
BH05	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.22	4623.75
BH05	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.36	4623.61
BH05	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.85	4623.12

**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 <sup>(2)</sup> (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (µg/L) <sup>(1)</sup>		5	560	700	1,400	140	67	67	-	-

**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

ECMC = Energy and Carbon Management 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 ECMC standards

## Attachment A

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 27, 2024

Karen Olson

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Churchill 5 Wellhead

Work Order #2406218

Enclosed are the results of analyses for samples received by Summit Scientific on 06/14/24 18:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2406218-01	Water	06/14/24 10:30	06/14/24 18:13
BH02	2406218-02	Water	06/14/24 10:21	06/14/24 18:13
BH03	2406218-03	Water	06/14/24 10:20	06/14/24 18:13
BH04	2406218-04	Water	06/14/24 10:10	06/14/24 18:13
BH05	2406218-05	Water	06/14/24 10:09	06/14/24 18:13

Summit Scientific

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

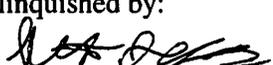
# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page   of 1
2406218	

<b>Send Data To:</b>		<b>Send Invoice To:</b>
Client: PDC / Tasman	Project Manager: Karen Olson	Company: PDC Energy
Address: 6855 W 119th Ave	E-Mail: karen.olson@chevron.com	Project Name/Location:
City/State/Zip: Broomfield / CO / 80220		AFE#:
Phone: 303-487-1228	Project Name: Churchill S Wellhead	PO/Billing Codes:
Sampler Name: Sylvie B.	Project Number:	Contact: Karen Olson

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	1,2,4 & 1,3,5-TMB	TDS, Cl, SO4			
1	BH01	6-14-24	1030	3	X				X				X	X				
2	BH02	↓	1021	↓	↓				↓				↓	↓				
3	BH03	↓	1020	↓	↓				↓				↓	↓				
4	BH04	↓	1010	↓	↓				↓				↓	↓				
5	BH05	↓	1009	↓	↓				↓				↓	↓				
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by: 	Date/Time: 1500 6-14-24	Received by: Tasman Lock Box	Date/Time: 6-14-24 1500	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: 	Date/Time: 1513 6/14/24	Received by: 	Date/Time: 1813 6/14/24	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 89	Corrected Temperature: 	IR gun #:			HNO3 lot #:	

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2406218

Client: Procterman Client Project ID: Churchill's wellhead

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

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

Temp (°C) 8.9 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

6/14/24  
Date/Time



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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**BH01**  
**2406218-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/14/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0485	06/17/24	06/18/24	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: **06/14/24 10:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.3	92.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.8	96.1 %		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.



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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**BH02**  
**2406218-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/14/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0485	06/17/24	06/18/24	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: **06/14/24 10:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.3	92.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.6	94.1 %		21-167		"	"	"	"	

Summit Scientific

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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**BH03**  
**2406218-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/14/24 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0485	06/17/24	06/18/24	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: **06/14/24 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.2	91.9 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.6	94.4 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**BH04**  
**2406218-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/14/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0485	06/17/24	06/18/24	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: **06/14/24 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.3	92.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.3	92.6 %		21-167		"	"	"	"	

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

Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

**BH05**  
**2406218-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **06/14/24 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BHF0485	06/17/24	06/18/24	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: **06/14/24 10:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.4	93.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.1	98.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.4	92.9 %		21-167		"	"	"	"	

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Project: PDC - Churchill 5 Wellhead

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Project Manager: Karen Olson

**Reported:**  
06/27/24 12:00

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BHF0485 - EPA 5030 Water MS

##### Blank (BHF0485-BLK1)

Prepared & Analyzed: 06/17/24

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	13.0		"	13.3		97.4		23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.9		20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7		21-167			

##### LCS (BHF0485-BS1)

Prepared & Analyzed: 06/17/24

Benzene	37.6	1.0	ug/l	33.3		113		51-132			
Toluene	38.3	1.0	"	33.3		115		51-138			
Ethylbenzene	40.1	1.0	"	33.3		120		58-146			
m,p-Xylene	76.6	2.0	"	66.7		115		57-144			
o-Xylene	37.1	1.0	"	33.3		111		53-146			
Naphthalene	35.7	1.0	"	33.3		107		70-130			
1,2,4-Trimethylbenzene	37.1	1.0	"	33.3		111		70-130			
1,3,5-Trimethylbenzene	36.7	1.0	"	33.3		110		70-130			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		97.1		23-173			
Surrogate: Toluene-d8	13.3		"	13.3		100		20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3		21-167			

##### Matrix Spike (BHF0485-MS1)

Source: 2406218-01

Prepared: 06/17/24 Analyzed: 06/18/24

Benzene	39.1	1.0	ug/l	33.3	1.03	114		34-141			
Toluene	37.9	1.0	"	33.3	ND	114		27-151			
Ethylbenzene	40.5	1.0	"	33.3	ND	122		29-160			
m,p-Xylene	76.9	2.0	"	66.7	ND	115		20-166			
o-Xylene	36.6	1.0	"	33.3	ND	110		33-159			
Naphthalene	26.4	1.0	"	33.3	ND	79.1		70-130			
1,2,4-Trimethylbenzene	35.4	1.0	"	33.3	ND	106		70-130			
1,3,5-Trimethylbenzene	35.7	1.0	"	33.3	ND	107		70-130			
Surrogate: 1,2-Dichloroethane-d4	11.6		"	13.3		87.3		23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101		20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		96.2		21-167			

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06/27/24 12:00

**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 BHF0485 - EPA 5030 Water MS**

Matrix Spike Dup (BHF0485-MSD1)	Source: 2406218-01			Prepared: 06/17/24 Analyzed: 06/18/24						
Benzene	39.1	1.0	ug/l	33.3	1.03	114	34-141	0.0256	30	
Toluene	38.7	1.0	"	33.3	ND	116	27-151	1.96	30	
Ethylbenzene	40.6	1.0	"	33.3	ND	122	29-160	0.0493	30	
m,p-Xylene	77.4	2.0	"	66.7	ND	116	20-166	0.557	30	
o-Xylene	37.2	1.0	"	33.3	ND	111	33-159	1.38	30	
Naphthalene	27.6	1.0	"	33.3	ND	82.7	70-130	4.41	30	
1,2,4-Trimethylbenzene	35.8	1.0	"	33.3	ND	107	70-130	1.01	30	
1,3,5-Trimethylbenzene	36.0	1.0	"	33.3	ND	108	70-130	0.949	30	
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.3		91.3	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.8	21-167			

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Project: PDC - Churchill 5 Wellhead

Project Number: [none]  
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**Reported:**  
06/27/24 12:00

### 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