



**PDC Energy, Inc.**  
Third Quarter 2023 Groundwater Monitoring Summary

July 27, 2023

Former Eckhardt 43-34 Wellhead  
NESE Section 34 T5N R64W  
Remediation # 21647

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Eckhardt 43-34 wellhead.

### Site History and Background

On March 11, 2022, a historic hydrocarbon release was discovered adjacent to the former wellhead during decommissioning activities. Following the discovery, mitigation activities were initiated and approximately 8 cubic yards of impacted material were removed from location. During excavation activities, groundwater was encountered within the excavation at approximately 6.5 feet below ground surface (bgs). On October 10, 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. Per the approved Supplemental Form 27 (Document No. 403221432), chloride and sulfate anions and TDS were removed from the quarterly sampling and analysis plan following the fourth quarter 2022.

### Groundwater Monitoring Activities

On July 14, 2023, 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.

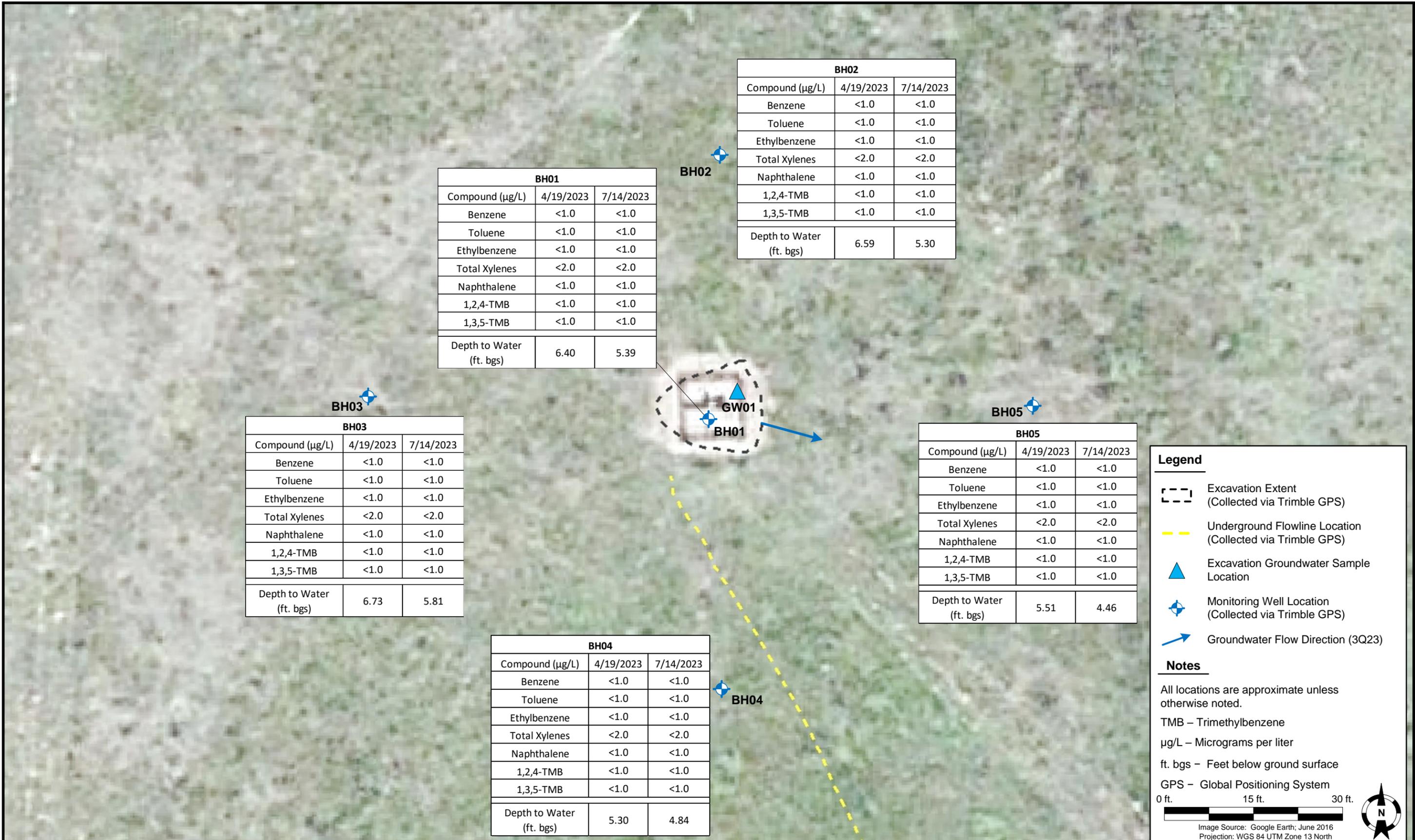
Third quarter 2023 analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 groundwater standards in all five monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation 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 between the fourth quarter 2022 and the third quarter 2023.

During the third quarter 2023, four consecutive quarters of organic compound concentrations in compliance with the applicable COGCC Table 915-1 regulatory standards were achieved. Consequently, PDC is requesting to discontinue groundwater monitoring at this remediation project.

Based on soil analytical results received during March 2023 supplemental site investigation activities, further delineation is necessary to vertically and horizontally define the arsenic and lead exceedances on location. The proposed soil boring locations are illustrated on Figure 3. Site investigation activities will be completed pending landowner negotiations.



BH01		
Compound (µg/L)	4/19/2023	7/14/2023
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)	6.40	5.39

BH02		
Compound (µg/L)	4/19/2023	7/14/2023
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)	6.59	5.30

BH03		
Compound (µg/L)	4/19/2023	7/14/2023
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)	6.73	5.81

BH05		
Compound (µg/L)	4/19/2023	7/14/2023
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)	5.51	4.46

BH04		
Compound (µg/L)	4/19/2023	7/14/2023
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)	5.30	4.84

**Legend**

- Excavation Extent (Collected via Trimble GPS)
- Underground Flowline Location (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (3Q23)

**Notes**

All locations are approximate unless otherwise noted.  
 TMB – Trimethylbenzene  
 µg/L – Micrograms per liter  
 ft. bgs – Feet below ground surface  
 GPS – Global Positioning System  
 0 ft. 15 ft. 30 ft.

Image Source: Google Earth; June 2016  
 Projection: WGS 84 UTM Zone 13 North



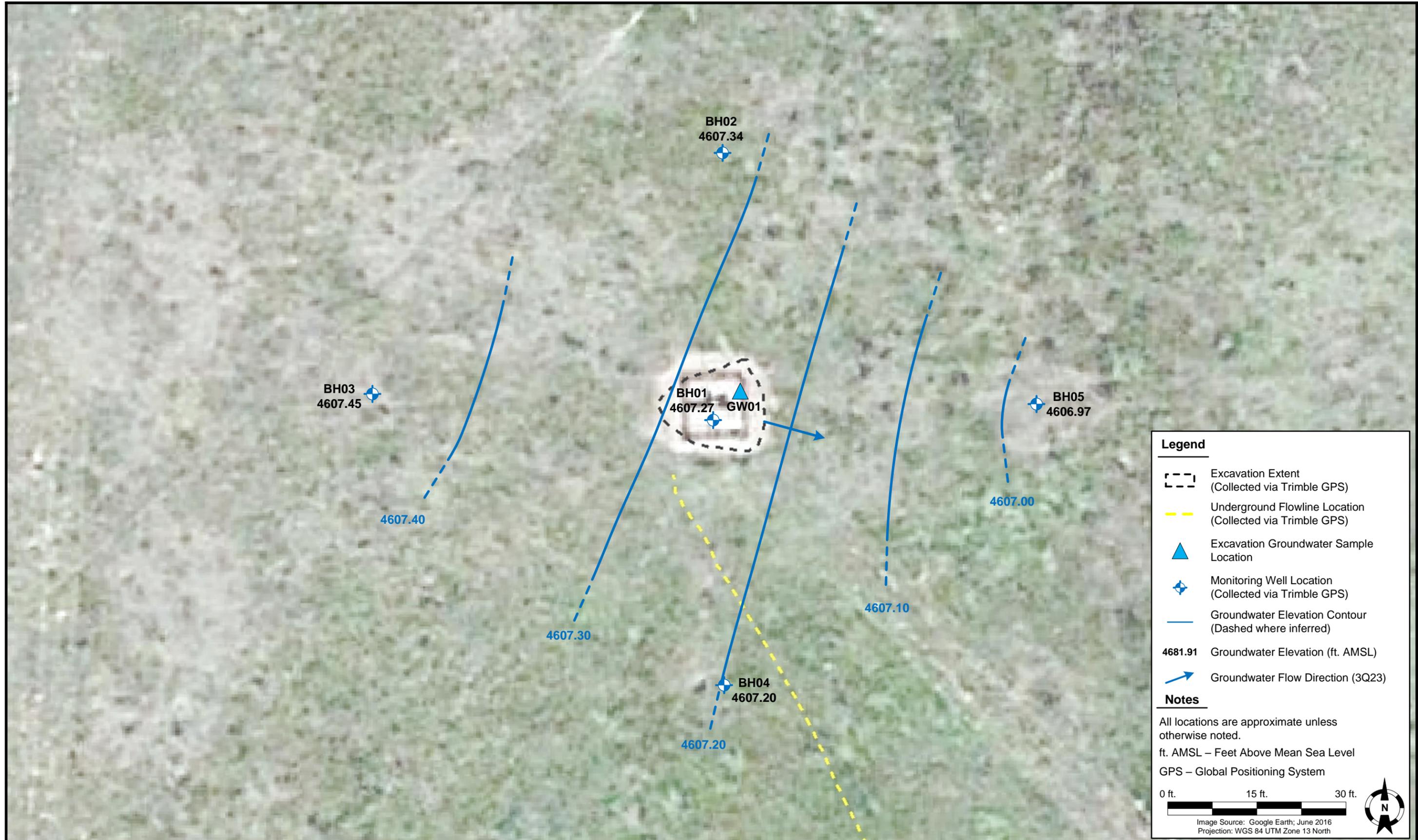
DATE: July 27, 2023  
 DESIGNED BY: C. Hamlin  
 DRAWN BY: G. Semenza

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

**PDC Energy, Inc. – DJ Basin**  
**Former Eckhardt 43-34 Wellhead**  
 NESE, Section 34, Township 5 North, Range 64 West  
 Weld County, Colorado

**GROUNDWATER ANALYTICAL RESULTS MAP**

**FIGURE 1**



**Legend**

- Excavation Extent (Collected via Trimble GPS)
- Underground Flowline Location (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed where inferred)
- 4681.91** Groundwater Elevation (ft. AMSL)
- Groundwater Flow Direction (3Q23)

**Notes**

All locations are approximate unless otherwise noted.  
 ft. AMSL – Feet Above Mean Sea Level  
 GPS – Global Positioning System

0 ft.      15 ft.      30 ft.

Image Source: Google Earth; June 2016  
 Projection: WGS 84 UTM Zone 13 North

DATE: August 7, 2023

DESIGNED BY: C. Hamlin

DRAWN BY: L. Reed

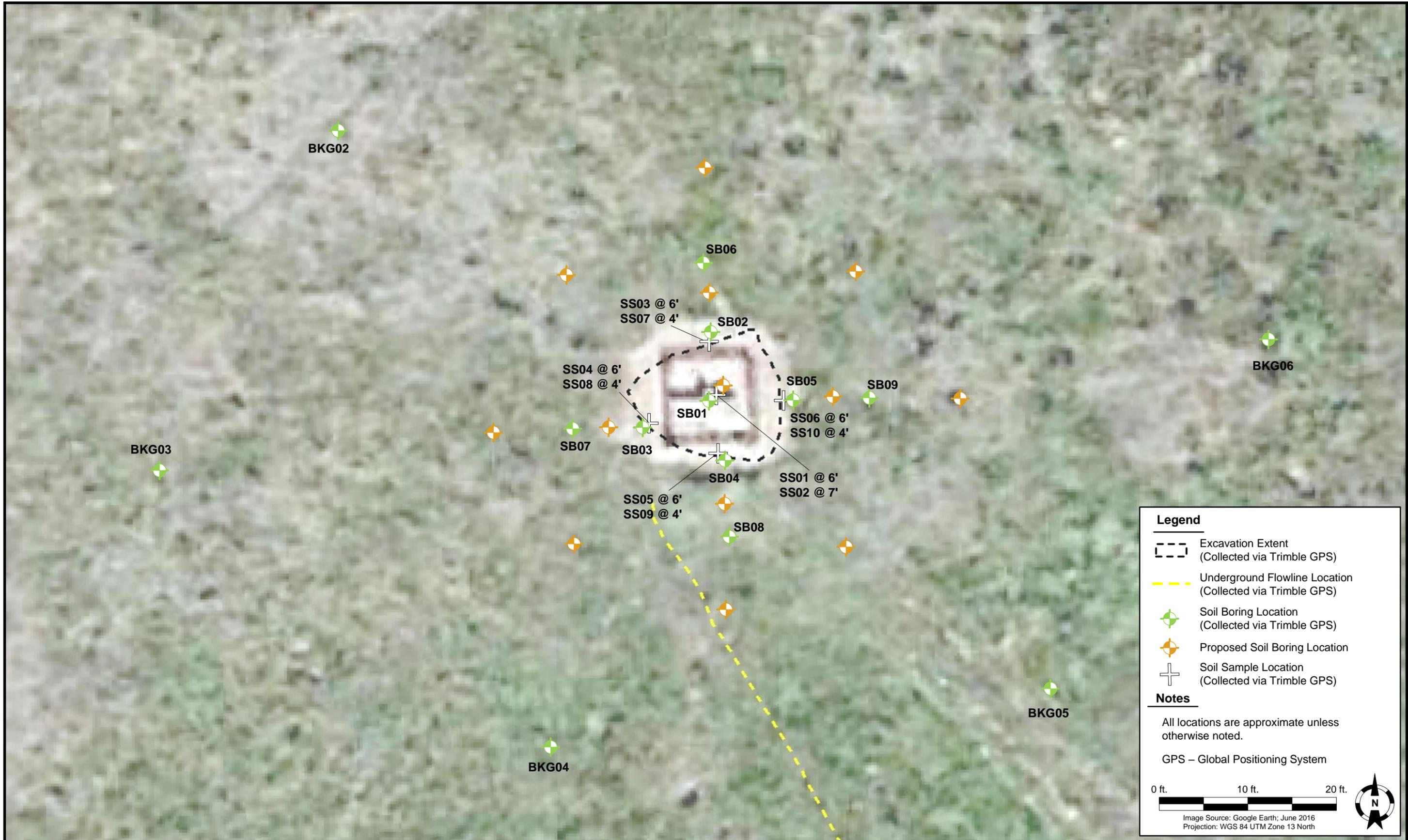


**Tasman, Inc.**  
 6855 W. 119<sup>th</sup> Ave.  
 Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Former Eckhardt 43-34 Wellhead**  
 NESE Section 34, Township 5 North, Range 64 West  
 Weld County, Colorado

**GROUNDWATER  
 ELEVATION CONTOUR  
 MAP (07/14/2023)**

**FIGURE  
 2**



DATE: June 6, 2023

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus

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

**PDC Energy, Inc. – DJ Basin**  
**Former Eckhardt 43-34 Wellhead**  
NESE, Section 34, Township 5 North, Range 64 West  
Weld County, Colorado

**PROPOSED  
SOIL BORING  
LOCATION MAP**

**FIGURE  
3**

**TABLE 1**  
**FORMER ECKHARDT 43-34 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>COGCC 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>	-	-
GW01	3/11/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	~6.5	NA
BH01	10/21/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.10	4603.56
BH01	1/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.84	4604.82
BH01	4/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.40	4606.26
BH01	7/14/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.39	4607.27
BH02	10/21/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.07	4603.57
BH02	1/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.98	4604.66
BH02	4/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.59	4606.05
BH02	7/14/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.30	4607.34
BH03	10/21/2022	Dry - Not Sampled							Dry	Dry
BH03	1/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.25	4605.01
BH03	4/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.73	4606.53
BH03	7/14/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.81	4607.45
BH04	10/21/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	8.20	4603.84
BH04	1/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.83	4605.21
BH04	4/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.30	4606.74
BH04	7/14/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.84	4607.20
BH05	10/21/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.91	4603.52
BH05	1/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.78	4604.65
BH05	4/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.51	4605.92
BH05	7/14/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.46	4606.97

**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

## **ATTACHMENT A**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 24, 2023

Mark Longhurst

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: PDC - Eckhardt 43-34 Wellhead

Work Order #2307277

Enclosed are the results of analyses for samples received by Summit Scientific on 07/14/23 17:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury

President



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

Project: PDC - Eckhardt 43-34 Wellhead

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2307277-01	Water	07/14/23 10:55	07/14/23 17:50
BH02	2307277-02	Water	07/14/23 11:00	07/14/23 17:50
BH03	2307277-03	Water	07/14/23 11:06	07/14/23 17:50
BH04	2307277-04	Water	07/14/23 10:56	07/14/23 17:50
BH05	2307277-05	Water	07/14/23 10:43	07/14/23 17:50

Summit Scientific

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

# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307277	

Client: PDC PDC / Tasman		Project Manager: Mark Longhurst		Send Invoice To:	
Address: 6855 W 119th Ave		E-Mail: mark.longhurst@PDCE.com		Company: PDC Energy	
City/State/Zip: Broomfield / CO / 80220		Project Name: Eckhardt 43-34 Wellhead		Project Name/Location:	
Phone: 303-487-1228		Project Number:		AFE#:	
Sampler Name: Jordan Hestmark, GS				PO/Billing Codes:	
				Contact: Mark Longhurst	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5 - TMB	Boron - HWS	pH, EC, SAR	PAHs		Metals	TDS, SO4, Cl		
1	BH01	7/14/23	1055	3					X					X		X							
2	BH02		1100																				
3	BH03		1106																				
4	BH04		1056																				
5	BH05		1043																				
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: Jordan Hestmark	Date/Time: 7/14/23 1431	Received by: Tasman Lockbox	Date/Time: 7/14/23 1431	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lockbox	Date/Time: 7/14/23 1750	Received by: [Signature]	Date/Time: 7/14/23 1750	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb. <input checked="" type="checkbox"/>	
Temperature Upon Receipt: 7.3	Corrected Temperature: e	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2307277

Client: POC/Trasman Client Project ID: Eckhardt 43-34 wellhead

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

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

Temp (°C)  Thermometer #

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

7/14/23  
Date/Time



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

Project: PDC - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**BH01**  
**2307277-01 (Water)**

**Summit Scientific**

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

Date Sampled: **07/14/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	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: **07/14/23 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	19.4	145 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	15.6	117 %		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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**BH02**  
**2307277-02 (Water)**

**Summit Scientific**

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

Date Sampled: **07/14/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	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: **07/14/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	18.2	137 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.6	94.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	19.3	144 %		21-167		"	"	"	"	

Summit Scientific

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



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

Project: PDC - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**BH03**  
**2307277-03 (Water)**

**Summit Scientific**

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

Date Sampled: **07/14/23 11:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	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: **07/14/23 11:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	18.0	135 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	11.9	89.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	18.2	136 %		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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**BH04**  
**2307277-04 (Water)**

**Summit Scientific**

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

Date Sampled: **07/14/23 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BGG0506	07/17/23	07/18/23	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: **07/14/23 10:56**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	17.7	133 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	11.9	89.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	17.9	135 %	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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**BH05**  
**2307277-05 (Water)**

**Summit Scientific**

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

Date Sampled: **07/14/23 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	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: **07/14/23 10:43**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	17.2	129 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.8	95.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	18.2	136 %		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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

### 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 BGG0506 - EPA 5030 Water MS

##### Blank (BGG0506-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	20.2		"	13.3		151		23-173			
<i>Surrogate: Toluene-d8</i>	11.8		"	13.3		88.7		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	15.0		"	13.3		112		21-167			

##### LCS (BGG0506-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	43.3	1.0	ug/l	50.0		86.5		51-132			
Toluene	45.2	1.0	"	50.0		90.3		51-138			
Ethylbenzene	40.4	1.0	"	50.0		80.9		58-146			
m,p-Xylene	69.2	2.0	"	100		69.2		57-144			
o-Xylene	40.8	1.0	"	50.0		81.6		53-146			
Naphthalene	37.2	1.0	"	50.0		74.4		70-130			
1,2,4-Trimethylbenzene	45.6	1.0	"	50.0		91.1		70-130			
1,3,5-Trimethylbenzene	39.6	1.0	"	50.0		79.3		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	17.5		"	13.3		131		23-173			
<i>Surrogate: Toluene-d8</i>	12.3		"	13.3		92.0		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.6		"	13.3		110		21-167			

##### Matrix Spike (BGG0506-MS1)

Source: 2307260-01

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	24.4	1.0	ug/l	50.0	ND	48.9		34-141			
Toluene	20.1	1.0	"	50.0	ND	40.2		27-151			
Ethylbenzene	41.1	1.0	"	50.0	ND	82.2		29-160			
m,p-Xylene	40.4	2.0	"	100	ND	40.4		20-166			
o-Xylene	21.5	1.0	"	50.0	ND	43.0		33-159			
Naphthalene	39.8	1.0	"	50.0	ND	79.5		70-130			
1,2,4-Trimethylbenzene	45.7	1.0	"	50.0	ND	91.4		70-130			
1,3,5-Trimethylbenzene	39.8	1.0	"	50.0	ND	79.5		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	16.9		"	13.3		127		23-173			
<i>Surrogate: Toluene-d8</i>	12.4		"	13.3		92.8		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.9		"	13.3		112		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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

**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 BGG0506 - EPA 5030 Water MS**

Matrix Spike Dup (BGG0506-MSD1)	Source: 2307260-01			Prepared: 07/17/23 Analyzed: 07/19/23					
Benzene	27.2	1.0	ug/l	50.0	ND	54.4	34-141	10.7	30
Toluene	22.4	1.0	"	50.0	ND	44.8	27-151	10.6	30
Ethylbenzene	43.8	1.0	"	50.0	ND	87.5	29-160	6.29	30
m,p-Xylene	45.5	2.0	"	100	ND	45.5	20-166	12.0	30
o-Xylene	24.4	1.0	"	50.0	ND	48.9	33-159	12.7	30
Naphthalene	46.6	1.0	"	50.0	ND	93.2	70-130	15.9	30
1,2,4-Trimethylbenzene	50.0	1.0	"	50.0	ND	100	70-130	9.05	30
1,3,5-Trimethylbenzene	43.0	1.0	"	50.0	ND	86.1	70-130	7.87	30
Surrogate: 1,2-Dichloroethane-d4	17.4		"	13.3		130	23-173		
Surrogate: Toluene-d8	12.2		"	13.3		91.7	20-170		
Surrogate: 4-Bromofluorobenzene	14.6		"	13.3		109	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 - Eckhardt 43-34 Wellhead

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
07/24/23 08:38

### 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