

**PDC Energy, Inc.**  
**Second Quarter 2022 Groundwater Monitoring Summary**

May 6, 2022

Eberle 13-32 CHZ Facility  
NESE Section 32 T1N R66W  
Remediation # 15999

This groundwater monitoring summary has been prepared by Tasman, Inc. for the Eberle 13-32 CHZ Facility.

### **Site History and Background**

Per the agreement between Synergy Oil and Gas and the City of Brighton on January 28, 2014, on-going groundwater monitoring would be conducted at the Eberle 13-32 CHZ Facility to monitor and protect groundwater following oil and gas exploration activities. This location was acquired by PDC Energy in January 2020 and on October 19, 2020, three monitoring wells (BH01 – BH03) were installed to confirm the absence of dissolved-phase hydrocarbon impacts and conduct on-going groundwater monitoring. Based on the absence of dissolved-phase hydrocarbon impacts and the agreement with the Colorado Oil and Gas Commission (COGCC), the groundwater monitoring frequency was reduced to a semi-annual basis following the fourth quarter 2021 groundwater monitoring event.

### **Groundwater Monitoring Activities**

On April 1, 2022, groundwater monitoring was conducted at all three monitoring wells (BH01 – BH03). Three 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, total dissolved solids (TDS) by Method SM 2540C, and chloride and sulfate anions by EPA Method 300.0.

Second quarter 2022 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 standards in all three monitoring well locations. In addition, inorganic parameters were above the applicable regulatory standards and above 1.25x the background concentration of the up-gradient monitoring well (BH01) monitoring wells BH02 and BH03. Sample locations and corresponding analytical results are illustrated on Figures 1 and 2. Groundwater elevation data is illustrated on Figure 3. Analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included in Attachment A.

## Path Forward

Per the Condition of Approval (COA) issued by the State and City of Brighton, groundwater monitoring will continue on a semi-annual basis to assess and confirm the absence of dissolved-phase impacts at the Eberle 13-32 CHZ production facility.

Fourth quarter 2022 groundwater sampling will be conducted in October 2022.

BH03		
Compound (µg/L)	10/13/2021	4/1/2022
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)	22.35	23.65

BH01		
Compound (µg/L)	10/13/2021	4/1/2022
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)	13.65	14.90

BH02		
Compound (µg/L)	10/13/2021	4/1/2022
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)	19.10	20.62

**Legend**

-  Monitoring Well Location (Collected via Trimble GPS)
-  Groundwater Flow Direction (2Q22)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
µg/L – Micrograms per liter  
ft. bgs – Feet below ground surface

0 ft.      80 ft.      160 ft.

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



DATE: May 6, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus

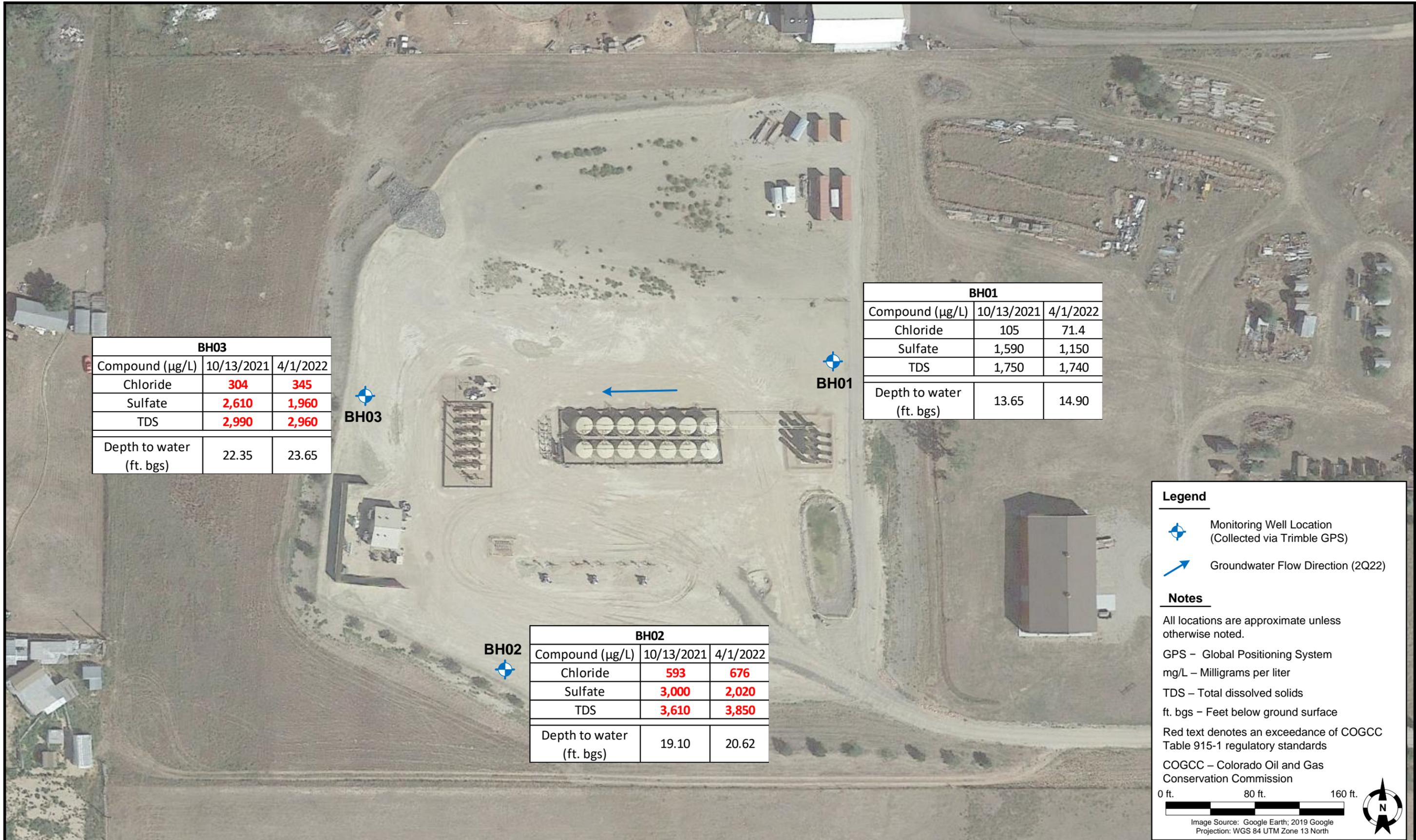


**Tasman, Inc.**  
6855 W. 119<sup>th</sup> Ave.  
Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Eberle 13-32 CHZ Facility**  
NESE, Section 32, Township 1 North, Range 66 West  
Weld County, Colorado

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

**FIGURE**  
**1**



BH03		
Compound (µg/L)	10/13/2021	4/1/2022
Chloride	304	345
Sulfate	2,610	1,960
TDS	2,990	2,960
Depth to water (ft. bgs)	22.35	23.65

BH01		
Compound (µg/L)	10/13/2021	4/1/2022
Chloride	105	71.4
Sulfate	1,590	1,150
TDS	1,750	1,740
Depth to water (ft. bgs)	13.65	14.90

BH02		
Compound (µg/L)	10/13/2021	4/1/2022
Chloride	593	676
Sulfate	3,000	2,020
TDS	3,610	3,850
Depth to water (ft. bgs)	19.10	20.62

**Legend**

- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Flow Direction (2Q22)

**Notes**

All locations are approximate unless otherwise noted.

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

Red text denotes an exceedance of COGCC Table 915-1 regulatory standards

COGCC – Colorado Oil and Gas Conservation Commission

0 ft. 80 ft. 160 ft.

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

DATE: May 6, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: J. Marcus

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 6855 W. 119<sup>th</sup> Ave.  
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 Eberle 13-32 CHZ Facility**  
 NESE, Section 32, Township 1 North, Range 66 West  
 Weld County, Colorado

**GROUNDWATER  
 ANALYTICAL RESULTS  
 MAP  
 (INORGANIC PARAMETERS)**

**FIGURE  
 2**



**Legend**

- Monitoring Well Location (Collected via Trimble GPS)
- Groundwater Elevation Contour (Dashed where inferred)
- 4816.00** Groundwater Elevation (ft. AMSL)
- Groundwater Flow Direction (2Q22)

**Notes**

All locations are approximate unless otherwise noted.

GPS - Global Positioning System

0 ft.      80 ft.      160 ft.

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

DATE: April 14, 2022

DESIGNED BY: B. Nelson

DRAWN BY: A. Dahl



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

**PDC Energy, Inc. – DJ Basin**  
**Eberle 13-32 CHZ Facility**  
NESE, Section 32, Township 1 North, Range 66 West  
Weld County, Colorado

**GROUNDWATER  
ELEVATION CONTOUR  
MAP (04/01/2022)**

**FIGURE  
3**

**TABLE 1**  
**EBERLE 13-32 CHZ FACILITY**  
**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>	<b>-</b>	<b>-</b>
BH01	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	16.04	5007.05
BH01	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	15.09	5008.00
BH01	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	13.65	5009.44
BH01	4/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	14.90	5008.19
BH02	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	21.39	5001.72
BH02	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	20.48	5002.63
BH02	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	19.10	5004.01
BH02	4/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	20.62	5002.49
BH03	4/19/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	24.04	4998.74
BH03	7/2/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	22.34	5000.44
BH03	10/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	22.35	5000.43
BH03	4/1/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	23.65	4999.13

**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
- 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 2**  
**EBERLE 13-32 CHZ FACILITY**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC PARAMETERS**

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)	Depth to Water ( <sup>2</sup> ) (ft.)	Groundwater Elevation (ft. AMSL)
<b>COGCC Table 915-1 Groundwater Standard (mg/L) <sup>(1)</sup></b>		<b>&lt;1.25 x BCKG</b>	<b>250 or &lt;1.25 x BCKG</b>	<b>250 or &lt;1.25 x BCKG</b>	-	-
BH01	4/19/2021	NR	NR	NR	16.04	5007.05
BH01	7/2/2021	NR	NR	NR	15.09	5008.00
BH01	10/13/2021	1,750	105	1,590	13.65	5009.44
BH01	4/1/2022	1,740	71.4	1,150	14.90	5008.19
BH02	4/19/2021	NR	NR	NR	21.39	5001.72
BH02	7/2/2021	NR	NR	NR	20.48	5002.63
BH02	10/13/2021	<b>3,610</b>	<b>593</b>	<b>3,000</b>	19.10	5004.01
BH02	4/1/2022	<b>3,850</b>	<b>676</b>	<b>2,020</b>	20.62	5002.49
BH03	4/19/2021	NR	NR	NR	24.04	4998.74
BH03	7/2/2021	NR	NR	NR	22.34	5000.44
BH03	10/13/2021	<b>2,990</b>	<b>304</b>	<b>2,610</b>	22.35	5000.43
BH03	4/1/2022	<b>2,960</b>	<b>345</b>	<b>1,960</b>	23.65	4999.13

**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

ft. = Feet

AMSL = Above Mean Sea Level

mg/L = Milligrams per liter

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

NR = Not Reported. Inorganic groundwater analytical results omitted due to laboratory error. Case narrative provided in the attached laboratory report.

☐ = Up-gradient well location used for background concentration.

**BOLD** = Analytical result is in exceedance of applicable standard.

## Attachment A

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 11, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Eberle 13-32 CHZ Facility

Work Order #2204014

Enclosed are the results of analyses for samples received by Summit Scientific on 04/01/22 17:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer

Project Manager



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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2204014-01	Water	04/01/22 12:26	04/01/22 17:28
BH02	2204014-02	Water	04/01/22 13:17	04/01/22 17:28
BH03	2204014-03	Water	04/01/22 12:55	04/01/22 17:28

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

S<sub>2</sub>

2204014

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

Page 1 of 1

Client: PDC / Tasman Geosciences Project Manager: Mark Longhurst  
 Address: 6855 W. 119th Ave. E-Mail: mark.longhurst@pdcg.com  
 City/State/Zip: Broomfield / CO/ 80020  
 Phone: 303-487-1228 Project Name: Ebenele 13-32 CH 2  
 Sampler Name: Ben Wagner Project Number: N/A

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	TDS	Chloride		Sulfate
1	BH01	4/1/22	1226	4	3		-		X				X	X	X	X	X	X	X	
2	BH02	4/1/22	1317	4	3		-		X				X	X	X	X	X	X	X	
3	BH03	4/1/22	1255	4	3		-		X				X	X	X	X	X	X	X	
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 4/1/22 1515	Received by: Tasman's Lock Box	Date/Time: 4/1/22 1515	Turn Around Time (Check) ___ Same Day                      72 hours ___ 24 hours                      X                      Standard ___ 48 hours                      ___ Sample Integrity: Temperature Upon Receipt: <u>0.3</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 4/1/22 1728	Received by: 	Date/Time: 4/1/22 1728		
Relinquished by:	Date/Time:	Received by:	Date/Time:		



Sample Receipt Checklist

S2 Work Order# 2204014

Client: Poc/Tosman Client Project ID: EBone 13-32 CH2

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

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Temp (°C) 0.3

Thermometer ID: 61857155-K

	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, H2SO4, NaOH, HNO3, etc.	-			HCl
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.

[Signature]  
Custodian Printed Name or Initials

4.12.2  
Date/Time



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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

**BH01**  
**2204014-01 (Water)**

**Summit Scientific**

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

Date Sampled: **04/01/22 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0061	04/04/22	04/06/22	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: **04/01/22 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **04/01/22 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	71.4	12.0		mg/L	200	BFD0125	04/06/22	04/06/22	EPA 300.0	
Sulfate	1150	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **04/01/22 12:26**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1740	10.0		mg/L	1	BFD0098	04/05/22	04/05/22	SM2540C	

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: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

**BH02**  
**2204014-02 (Water)**

**Summit Scientific**

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

Date Sampled: **04/01/22 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0061	04/04/22	04/06/22	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: **04/01/22 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		112 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **04/01/22 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>676</b>	12.0		mg/L	200	BFD0125	04/06/22	04/06/22	EPA 300.0	
Sulfate	<b>2020</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **04/01/22 13:17**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>3850</b>	10.0		mg/L	1	BFD0098	04/05/22	04/05/22	SM2540C	

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

**BH03**  
**2204014-03 (Water)**

**Summit Scientific**

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

Date Sampled: **04/01/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFD0061	04/04/22	04/06/22	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: **04/01/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		110 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **04/01/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>345</b>	12.0		mg/L	200	BFD0125	04/06/22	04/06/22	EPA 300.0	
Sulfate	<b>1960</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **04/01/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2960</b>	10.0		mg/L	1	BFD0098	04/05/22	04/05/22	SM2540C	

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

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

#### Summit Scientific

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

#### Batch BFD0061 - EPA 5030 Water MS

##### Blank (BFD0061-BLK1)

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	15.2		"	13.3		114		23-173			
<i>Surrogate: Toluene-d8</i>	14.3		"	13.3		107		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.8		"	13.3		103		21-167			

##### LCS (BFD0061-BS1)

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	37.9	1.0	ug/l	41.7		91.0		51-132			
Toluene	44.3	1.0	"	41.7		106		51-138			
Ethylbenzene	40.9	1.0	"	41.7		98.3		58-146			
m,p-Xylene	82.3	2.0	"	83.3		98.7		57-144			
o-Xylene	42.1	1.0	"	41.7		101		53-146			
Naphthalene	34.6	1.0	"	41.7		83.0		70-130			
1,2,4-Trimethylbenzene	45.8	1.0	"	41.7		110		70-130			
1,3,5-Trimethylbenzene	46.9	1.0	"	41.7		113		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	16.4		"	13.3		123		23-173			
<i>Surrogate: Toluene-d8</i>	14.5		"	13.3		109		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.8		"	13.3		103		21-167			

##### Matrix Spike (BFD0061-MS1)

Source: 2203522-03

Prepared: 04/04/22 Analyzed: 04/05/22

Benzene	41.8	1.0	ug/l	41.7	ND	100		34-141			
Toluene	49.6	1.0	"	41.7	ND	119		27-151			
Ethylbenzene	42.7	1.0	"	41.7	ND	103		29-160			
m,p-Xylene	85.0	2.0	"	83.3	ND	102		20-166			
o-Xylene	42.7	1.0	"	41.7	ND	103		33-159			
Naphthalene	39.4	1.0	"	41.7	ND	94.5		70-130			
1,2,4-Trimethylbenzene	46.7	1.0	"	41.7	ND	112		70-130			
1,3,5-Trimethylbenzene	48.2	1.0	"	41.7	ND	116		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	17.8		"	13.3		134		23-173			
<i>Surrogate: Toluene-d8</i>	16.4		"	13.3		123		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.4		"	13.3		108		21-167			

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

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04/11/22 10:28

**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 BFD0061 - EPA 5030 Water MS**

Matrix Spike Dup (BFD0061-MSD1)	Source: 2203522-03			Prepared: 04/04/22 Analyzed: 04/05/22							
Benzene	39.8	1.0	ug/l	41.7	ND	95.6	34-141	4.83	30		
Toluene	42.8	1.0	"	41.7	ND	103	27-151	14.9	30		
Ethylbenzene	42.5	1.0	"	41.7	ND	102	29-160	0.540	30		
m,p-Xylene	84.7	2.0	"	83.3	ND	102	20-166	0.365	30		
o-Xylene	43.0	1.0	"	41.7	ND	103	33-159	0.560	30		
Naphthalene	39.0	1.0	"	41.7	ND	93.6	70-130	0.893	30		
1,2,4-Trimethylbenzene	47.5	1.0	"	41.7	ND	114	70-130	1.59	30		
1,3,5-Trimethylbenzene	48.3	1.0	"	41.7	ND	116	70-130	0.228	30		
Surrogate: 1,2-Dichloroethane-d4	17.0		"	13.3		128	23-173				
Surrogate: Toluene-d8	13.8		"	13.3		103	20-170				
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107	21-167				

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Project: Eberle 13-32 CHZ Facility

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 Project Manager: Mark Longhurst

**Reported:**  
 04/11/22 10:28

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch BFD0125 - General Preparation**

**Blank (BFD0125-BLK1)**

Prepared & Analyzed: 04/06/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

**LCS (BFD0125-BS1)**

Prepared & Analyzed: 04/06/22

Chloride	3.17	0.0600	mg/L	3.00	106	90-110		
Sulfate	15.2	0.300	"	15.0	101	90-110		

**Duplicate (BFD0125-DUP1)**

Source: 2204014-01

Prepared & Analyzed: 04/06/22

Chloride	70.6	12.0	mg/L		71.4		1.13	20
Sulfate	1100	60.0	"		1150		4.50	20

**Matrix Spike (BFD0125-MS1)**

Source: 2204014-01

Prepared & Analyzed: 04/06/22

Chloride	666	12.0	mg/L	600	71.4	99.1	80-120	
Sulfate	4720	60.0	"	3000	1150	119	80-120	

Summit Scientific

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 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/11/22 10:28

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BFD0098 - General Preparation**

**Blank (BFD0098-BLK1)**

Prepared & Analyzed: 04/05/22

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (BFD0098-DUP1)**

Source: 2204012-21

Prepared & Analyzed: 04/05/22

Total Dissolved Solids      1410      10.0      mg/L      1400      0.427      20

Summit Scientific

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

Project: Eberle 13-32 CHZ Facility

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/11/22 10:28

### 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