

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

March 22, 2022

Former LH Miller Unit 1 Tank Battery  
NWNW Section 25 T4N R66W  
Remediation # 16033

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former LH Miller Unit 1 Tank Battery.

### Site History and Background

On January 6, 2021, a historic hydrocarbon release was discovered beneath a buried produced water vessel during ACM abatement activities. Following the discovery, mitigation activities were initiated and between January 6 and January 13, 2021, approximately 360 cubic yards of impacted material were removed from the former excavation. During excavation activities, groundwater was encountered at approximately 6 feet below ground surface (bgs). On April 9, 2021, five monitoring wells (BH01-BH05) were installed within and adjacent to the former excavation extent to confirm the absence of dissolved phase hydrocarbon impacts.

### Groundwater Monitoring Activities

On February 28, 2022, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Five groundwater samples were submitted to Summit Scientific Laboratories for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0, and total dissolved solids (TDS) by Method SM 2540C.

First quarter 2022 analytical results indicated that organic compound concentrations were in compliance with the applicable COGCC Table 915-1 groundwater standards in all five monitoring well locations. Additionally, TDS and sulfate anion concentrations were in exceedance of the applicable regulatory standards and above 1.25x the background concentration of the up-gradient monitoring well (BH01) in monitoring well BH05. Inorganic parameters were below the applicable regulatory standards or within 1.25x the background concentration in the remaining four monitoring well locations. Sample locations and corresponding analytical results are illustrated on Figures 1 and 2. Groundwater elevation data is illustrated on Figure 3. Groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included as Attachment A.

### **Current Remediation Activities and Path Forward**

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the second quarter 2021 and will remain the selected remediation strategy through the second quarter 2022.

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

BH03		
Compound (µg/L)	11/17/2021	2/28/2022
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)	2.79	3.49

BH05		
Compound (µg/L)	11/17/2021	2/28/2022
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)	3.00	3.70

BH04		
Compound (µg/L)	11/17/2021	2/28/2022
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)	3.74	4.49

BH02		
Compound (µg/L)	11/17/2021	2/28/2022
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)	2.61	3.29

BH01		
Compound (µg/L)	11/17/2021	2/28/2022
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)	3.26	3.91

**Legend**

- Excavation Extent (Collected via Trimble GPS)
- Monitoring Well Location (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Groundwater Flow Direction (1Q22)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

TMB - Trimethylbenzene

µg/L – Micrograms per liter

ft. bgs – Feet below ground surface

0 ft. 20 ft. 40 ft.

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

DATE: March 22, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: M. Connolly

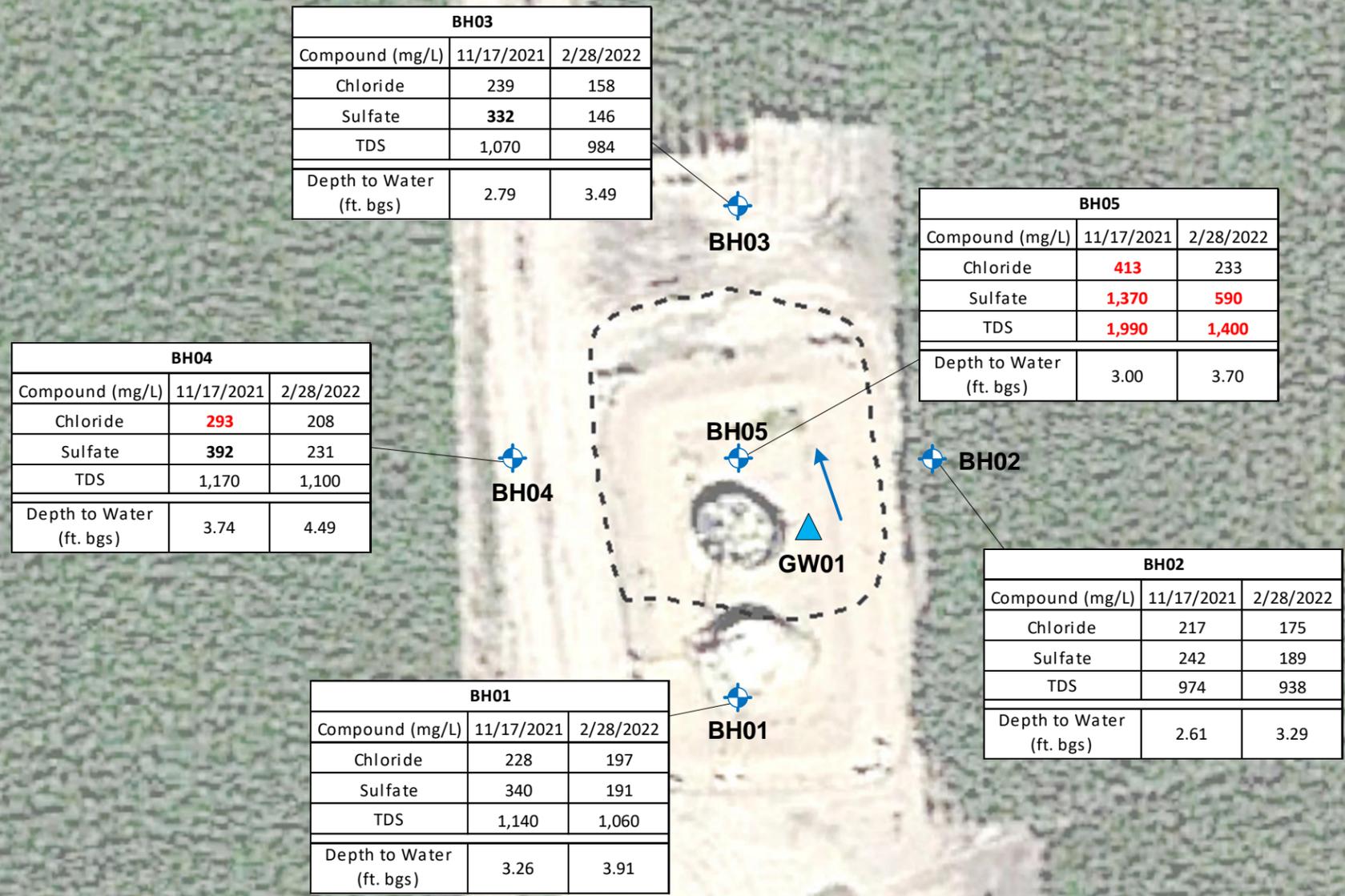


**Tasman, Inc.**  
6855 W. 119<sup>th</sup> Ave.  
Broomfield, CO 80020

**PDC Energy, Inc. – DJ Basin**  
**Former LH Miller Unit 1 Tank Battery**  
NWNW, Section 25, Township 4 North, Range 66 West  
Weld County, Colorado

**GROUNDWATER  
ANALYTICAL RESULTS  
MAP**

**FIGURE  
1**



**Legend**

- Excavation Extent (Collected via Trimble GPS)
- Monitoring Well Location (Collected via Trimble GPS)
- Excavation Groundwater Sample Location
- Groundwater Flow Direction (1Q22)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
 mg/L – Milligrams per liter  
 TDS – Total dissolved solids

Red text – exceedances of COGCC Table 915-1 standards.  
 Bold text – exceedances of COGCC Table 915-1 standards but within 1.25x BCKG concentration  
 COGCC – Colorado Oil and Gas Conservation Commission  
 BCKG – Background

0 ft. 20 ft. 40 ft.

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

DATE: March 22, 2022

DESIGNED BY: C. Hamlin

DRAWN BY: M. Connolly

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

**PDC Energy, Inc. – DJ Basin**  
**Former LH Miller Unit 1 Tank Battery**  
 NWNW, Section 25, Township 4 North, Range 66 West  
 Weld County, Colorado

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

**FIGURE 2**



- Legend**
- Monitoring Well Location (Collected via Trimble GPS)
  - Excavation Extent
  - Excavation Groundwater Sample Location
  - 4741.58** Groundwater Elevation (ft. AMSL)
  - Groundwater Flow Direction (1Q22)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

ft. AMSL – Feet Above Mean Sea Level

0 ft.      20 ft.      40 ft.

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

DATE: March 3, 2022

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 LH Miller Unit 1 Tank Battery**  
NWNW, Section 25, Township 4 North, Range 66 West  
Weld County, Colorado

**GROUNDWATER  
ELEVATION CONTOUR  
MAP (2/28/2022)**

**FIGURE  
3**

**TABLE 1**  
**FORMER LH MILLER UNIT 1 TANK BATTERY**  
**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>
GW01	1/14/2021	<1.0	<1.0	<1.0	6.6	NA	NA	NA	~ 6	NM
BH01	5/27/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.17	4742.29
BH01	8/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.51	4744.95
BH01	11/17/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.26	4743.20
BH01	2/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.91	4742.55
BH02	5/27/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.52	4741.99
BH02	8/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.00	4744.51
BH02	11/17/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.61	4742.90
BH02	2/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.29	4742.22
BH03	5/27/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.72	4741.58
BH03	8/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.03	4744.27
BH03	11/17/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.79	4742.51
BH03	2/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.49	4741.81
BH04	5/27/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.69	4741.90
BH04	8/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.84	4744.75
BH04	11/17/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.74	4742.85
BH04	2/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.49	4742.10
BH05	5/27/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.14	4741.74
BH05	8/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1.98	4743.90
BH05	11/17/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.00	4742.88
BH05	2/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.70	4742.18

**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  
NM = Not measured

**TABLE 2**  
**FORMER LH MILLER UNIT 1 TANK BATTERY**  
**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	5/27/2021	1,020	120	122	4.17	4742.29
BH01	8/26/2021	1,020	159	286	1.51	4744.95
BH01	11/17/2021	1,140	228	340	3.26	4743.20
BH01	2/28/2022	1,060	197	191	3.91	4742.55
BH02	8/26/2021	1,020	163	241	1.00	4744.51
BH02	11/17/2021	974	217	242	2.61	4742.90
BH02	2/28/2022	938	175	189	3.29	4742.22
BH03	5/27/2021	957	112	118	3.72	4741.58
BH03	8/26/2021	933	155	246	1.03	4744.27
BH03	11/17/2021	1070	239	<b>332</b>	2.79	4742.51
BH03	2/28/2022	984	158	146	3.49	4741.81
BH04	5/27/2021	1,090	134	147	4.69	4741.90
BH04	8/26/2021	1,060	182	<b>316</b>	1.84	4744.75
BH04	11/17/2021	1,170	<b>293</b>	<b>392</b>	3.74	4742.85
BH04	2/28/2022	1,100	208	231	4.49	4742.10
BH05	5/27/2021	<b>1,310</b>	<b>251</b>	<b>1,090</b>	4.14	4741.74
BH05	8/26/2021	<b>1,970</b>	<b>299</b>	<b>1,240</b>	1.98	4743.90
BH05	11/17/2021	<b>1,990</b>	<b>413</b>	<b>1,370</b>	3.00	4742.88
BH05	2/28/2022	<b>1,400</b>	233	<b>590</b>	3.70	4742.18

**TABLE 2**  
**FORMER LH MILLER UNIT 1 TANK BATTERY**  
**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>	-	-

**Notes:**

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

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

TDS = Total dissolved solids

COGCC = Colorado Oil and Gas Conservation Commission

BCKG = Background

mg/L = Milligrams per liter

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

ft. = Feet

AMSL = Above Mean Sea Level

  = Up-gradient well location used for background concentration.

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

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

## Attachment A

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 08, 2022

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2202364

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/22 15:30. 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, stylized 'M' and 'P'.

Muri Premer

Project Manager



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2202364-01	Water	02/28/22 13:14	02/28/22 15:30
BH02	2202364-02	Water	02/28/22 13:33	02/28/22 15:30
BH03	2202364-03	Water	02/28/22 13:20	02/28/22 15:30
BH04	2202364-04	Water	02/28/22 13:40	02/28/22 15:30
BH05	2202364-05	Water	02/28/22 13:27	02/28/22 15:30

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

2702364

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

Page 1 of 1

Client: FDC / Tasman Geosciences

Project Manager: MARK LONGHURST

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield / CO / 80020

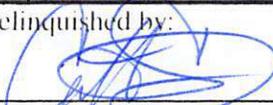
Phone: 303-487-1228

Project Name: LH MILLER UNIT 1

Sampler Name: COLETTE RAMEY

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	2/28/22	1314	4	3					✓				✓	✓	✓	✓	✓	✓	✓	
2	BH02		1333	1										✓	✓	✓	✓	✓	✓	✓	
3	BH03		1320	1										✓	✓	✓	✓	✓	✓	✓	
4	BH04		1340	1										✓	✓	✓	✓	✓	✓	✓	
5	BH05		1327	1										✓	✓	✓	✓	✓	✓	✓	
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: <u>2/28/22</u> <u>1530</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>2/28/22</u> <u>1530</u>	<b>Turn Around Time</b> (Check) <input type="checkbox"/> Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/> <b>Sample Integrity:</b> Temperature Upon Receipt: <u>0.7</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b>
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>2/28/22</u> <u>1530</u>	Received by: 	Date/Time: <u>2/28/22</u> <u>1530</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2202364

Client: POC / Tasmania Client Project ID: LH Miller unit

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

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

Temp (°C) 07

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°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"/>	<u>ON ICE</u>
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"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <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"/>	
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"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<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.

R. J. [Signature]  
Custodian Printed Name or Initials

2-28-22  
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**BH01**  
**2202364-01 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/22 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFC0066	03/03/22	03/04/22	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: **02/28/22 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/28/22 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>197</b>	12.0		mg/L	200	BFC0084	03/04/22	03/04/22	EPA 300.0	
Sulfate	<b>191</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/28/22 13:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1060</b>	10.0		mg/L	1	BFC0008	03/01/22	03/01/22	SM2540C	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**BH02**  
**2202364-02 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/22 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFC0066	03/03/22	03/04/22	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: **02/28/22 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/28/22 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	175	12.0		mg/L	200	BFC0084	03/04/22	03/04/22	EPA 300.0	
Sulfate	189	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/28/22 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	938	10.0		mg/L	1	BFC0008	03/01/22	03/01/22	SM2540C	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**BH03**  
**2202364-03 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFC0066	03/03/22	03/04/22	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: **02/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>158</b>	12.0		mg/L	200	BFC0084	03/04/22	03/04/22	EPA 300.0	
Sulfate	<b>146</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/28/22 13:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>984</b>	10.0		mg/L	1	BFC0008	03/01/22	03/01/22	SM2540C	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**BH04**  
**2202364-04 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFC0066	03/03/22	03/04/22	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: **02/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>208</b>	12.0		mg/L	200	BFC0084	03/04/22	03/04/22	EPA 300.0	
Sulfate	<b>231</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/28/22 13:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1100</b>	10.0		mg/L	1	BFC0008	03/01/22	03/01/22	SM2540C	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

**BH05**  
**2202364-05 (Water)**

**Summit Scientific**

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

Date Sampled: **02/28/22 13:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFC0066	03/03/22	03/04/22	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: **02/28/22 13:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		105 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **02/28/22 13:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>233</b>	12.0		mg/L	200	BFC0084	03/04/22	03/05/22	EPA 300.0	
Sulfate	<b>590</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **02/28/22 13:27**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>1400</b>	10.0		mg/L	1	BFC0008	03/01/22	03/01/22	SM2540C	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

### 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 BFC0066 - EPA 5030 Water MS

##### Blank (BFC0066-BLK1)

Prepared: 03/03/22 Analyzed: 03/04/22

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	5.73		"	13.3		43.0		23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.8		20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.7		21-167			

##### LCS (BFC0066-BS1)

Prepared: 03/03/22 Analyzed: 03/04/22

Benzene	35.1	1.0	ug/l	41.7		84.3		51-132			
Toluene	39.8	1.0	"	41.7		95.4		51-138			
Ethylbenzene	41.6	1.0	"	41.7		99.8		58-146			
m,p-Xylene	82.5	2.0	"	83.3		99.0		57-144			
o-Xylene	42.0	1.0	"	41.7		101		53-146			
Naphthalene	40.8	1.0	"	41.7		98.0		70-130			
1,2,4-Trimethylbenzene	42.7	1.0	"	41.7		102		70-130			
1,3,5-Trimethylbenzene	46.9	1.0	"	41.7		112		70-130			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109		23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102		20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9		21-167			

##### Matrix Spike (BFC0066-MS1)

Source: 2202364-01

Prepared: 03/03/22 Analyzed: 03/04/22

Benzene	35.5	1.0	ug/l	41.7	ND	85.1		34-141			
Toluene	39.6	1.0	"	41.7	ND	95.0		27-151			
Ethylbenzene	42.3	1.0	"	41.7	ND	102		29-160			
m,p-Xylene	83.0	2.0	"	83.3	ND	99.6		20-166			
o-Xylene	42.1	1.0	"	41.7	ND	101		33-159			
Naphthalene	44.2	1.0	"	41.7	ND	106		70-130			
1,2,4-Trimethylbenzene	43.1	1.0	"	41.7	ND	104		70-130			
1,3,5-Trimethylbenzene	47.5	1.0	"	41.7	ND	114		70-130			
Surrogate: 1,2-Dichloroethane-d4	14.3		"	13.3		107		23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8		20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102		21-167			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 03/08/22 15:42

**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 BFC0066 - EPA 5030 Water MS**

<b>Matrix Spike Dup (BFC0066-MSD1)</b>	<b>Source: 2202364-01</b>			<b>Prepared: 03/03/22 Analyzed: 03/04/22</b>						
Benzene	35.9	1.0	ug/l	41.7	ND	86.2	34-141	1.26	30	
Toluene	40.7	1.0	"	41.7	ND	97.7	27-151	2.76	30	
Ethylbenzene	42.2	1.0	"	41.7	ND	101	29-160	0.308	30	
m,p-Xylene	82.7	2.0	"	83.3	ND	99.2	20-166	0.350	30	
o-Xylene	42.0	1.0	"	41.7	ND	101	33-159	0.0713	30	
Naphthalene	44.8	1.0	"	41.7	ND	108	70-130	1.35	30	
1,2,4-Trimethylbenzene	43.1	1.0	"	41.7	ND	104	70-130	0.00	30	
1,3,5-Trimethylbenzene	47.4	1.0	"	41.7	ND	114	70-130	0.0632	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.9</i>		<i>"</i>	<i>13.3</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.6</i>		<i>"</i>	<i>13.3</i>		<i>102</i>	<i>21-167</i>			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 03/08/22 15:42

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

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

**Batch BFC0084 - General Preparation**

**Blank (BFC0084-BLK1)**

Prepared & Analyzed: 03/04/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

**LCS (BFC0084-BS1)**

Prepared & Analyzed: 03/04/22

Chloride	2.82	0.0600	mg/L	3.00	94.0	90-110		
Sulfate	14.1	0.300	"	15.0	94.2	90-110		

**Duplicate (BFC0084-DUP1)**

Source: 2202364-01

Prepared & Analyzed: 03/04/22

Chloride	224	12.0	mg/L		197		12.7	20
Sulfate	230	60.0	"		191		18.6	20

**Matrix Spike (BFC0084-MS1)**

Source: 2202364-01

Prepared & Analyzed: 03/04/22

Chloride	821	12.0	mg/L	600	197	104	80-120	
Sulfate	3340	60.0	"	3000	191	105	80-120	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
 03/08/22 15:42

**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 BFC0008 - General Preparation**

**Blank (BFC0008-BLK1)**

Prepared & Analyzed: 03/01/22

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (BFC0008-DUP1)**

Source: 2202360-01

Prepared & Analyzed: 03/01/22

Total Dissolved Solids      1430      10.0      mg/L      1430      0.350      20

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
03/08/22 15:42

### 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