

PDC Energy, Inc.
Fourth Quarter 2021 Groundwater Monitoring Summary

November 18, 2021

Former Kristen 1 Wellhead
NENE Section 24 T4N R67W
Remediation # 16917

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Kristen 1 Wellhead. On October 5, 2021, groundwater monitoring was conducted at all five temporary monitoring wells (BH01 – BH05). Temporary monitoring wells were advanced via hand auger, gauged and sampled, and subsequently abandoned. Five groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B.

Fourth quarter 2021 analytical results indicated that organic compound concentrations were below 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. Analytical results are summarized in Table 1. The laboratory analytical report is included as Attachment A.

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

First quarter 2022 groundwater sampling will be conducted in January 2022.

BH03		
Compound (µg/L)	7/8/2021	10/5/2021
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)	3.05	4.36




BH05		
Compound (µg/L)	7/8/2021	10/5/2021
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)	2.82	4.32

BH04		
Compound (µg/L)	7/8/2021	10/5/2021
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)	3.07	4.33

BH02		
Compound (µg/L)	7/8/2021	10/5/2021
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)	3.31	4.56

BH01		
Compound (µg/L)	7/8/2021	10/5/2021
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)	3.31	4.56

Legend

-  Excavation Extent (Collected via Trimble GPS)
-  Monitoring Well Location (Collected via Trimble GPS)
-  Groundwater Flow Direction (4Q21)

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. 10 ft. 20 ft.

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

DATE: August 12, 2021

DESIGNED BY: C. Hamlin

DRAWN BY: C. Ambler

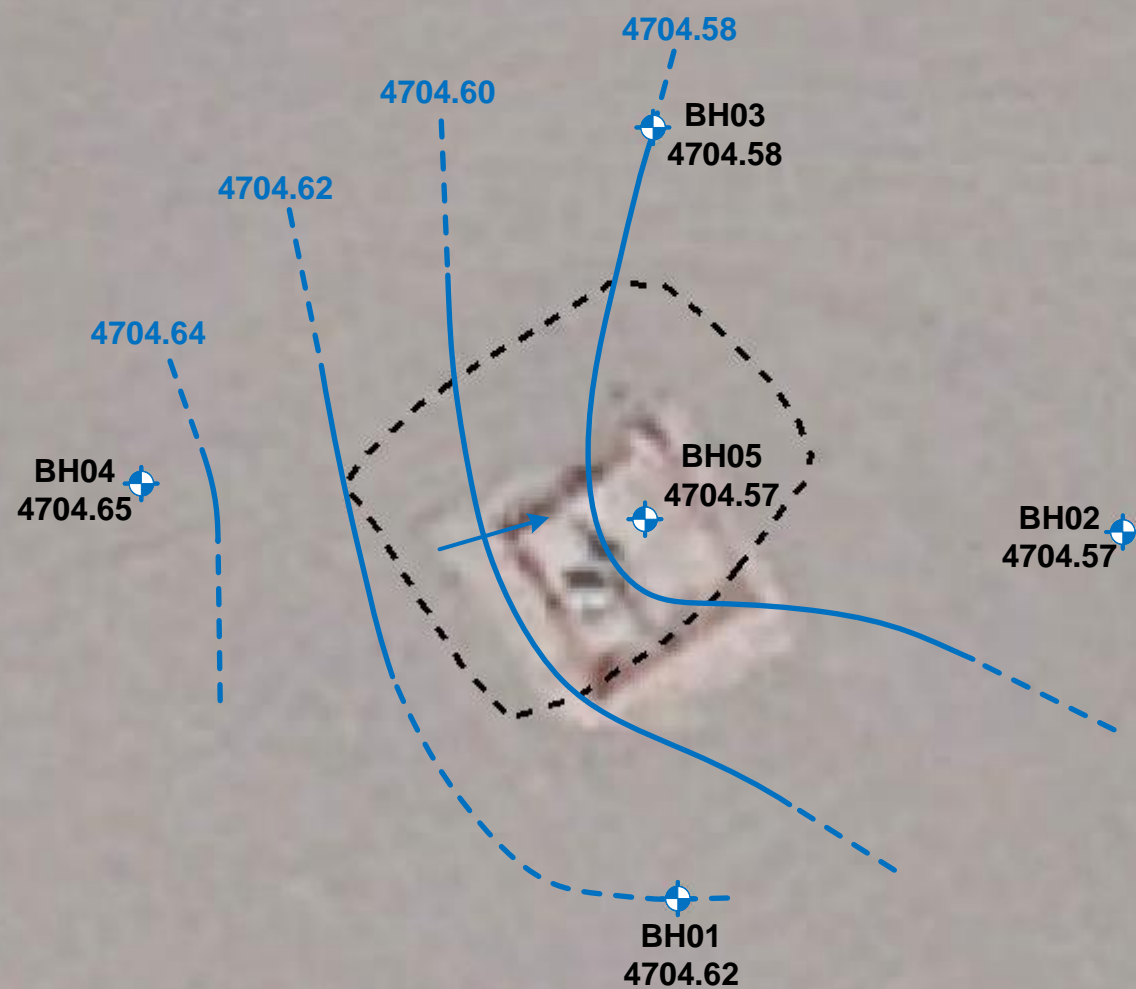


Tasman Geosciences, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020




PDC Energy, Inc. – DJ Basin
Former Kristin 1 Wellhead
NENE, Section 24, Township 4 North, Range 67 West
Weld County, Colorado

GROUNDWATER
ANALYTICAL RESULTS
MAP

FIGURE
1



Legend

-  Monitoring Well Location
(Collected via Trimble GPS)
-  Groundwater Elevation Contour
(Dashed where inferred)
- 4716.24** Groundwater Elevation (ft. AMSL)
-  Groundwater Flow Direction (4Q21)

Notes

All locations are approximate unless otherwise noted.

GPS - Global Positioning System

0 ft. 10 ft. 20 ft.

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



DATE: October 21, 2021

DESIGNED BY: B. Nelson

DRAWN BY: C. Ambler



TASMAN
GEOSCIENCES

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

PDC Energy, Inc. – DJ Basin
Former Kristin 1 Wellhead
NENE, Section 24, Township 4 North, Range 67 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (10/05/2021)**

**FIGURE
2**

TABLE 1
FORMER KRISTIN 1 WELLHEAD
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW01	5/12/2021	280	83	110	1,900	43	160	130	3.5	NA
BH01	7/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.31	4706.52
BH01	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.56	4704.62
BH02	7/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.31	4706.48
BH02	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.56	4704.57
BH03	7/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.05	4706.50
BH03	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.36	4704.58
BH04	7/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.07	4706.55
BH04	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.33	4704.65
BH05	7/8/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.82	4706.81
BH05	10/5/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.32	4704.57

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 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
BOLD = Analytical result is in exceedance of applicable standard.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 12, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

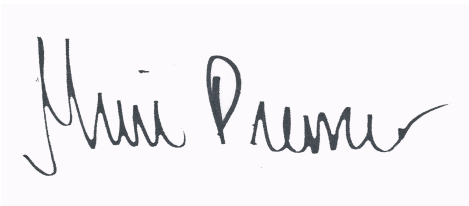
Denver, CO 80203

RE: Kristin 1 Wellhead

Work Order #2110071

Enclosed are the results of analyses for samples received by Summit Scientific on 10/05/21 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer For Paul Shrewsbury
President



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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2110071-01	Water	10/05/21 11:16	10/05/21 15:00
BH02	2110071-02	Water	10/05/21 11:17	10/05/21 15:00
BH03	2110071-03	Water	10/05/21 11:24	10/05/21 15:00
BH04	2110071-04	Water	10/05/21 11:20	10/05/21 15:00
BH05	2110071-05	Water	10/05/21 11:30	10/05/21 15:00

Summit Scientific

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Summit Scientific

2110071

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: PDL/Tasman

Project Manager: Mark Longhurst

Address: 6855 W. 119th Ave.

E-Mail: mark.longhurst@pdl.com

City/State/Zip: Broomfield, CO 80020


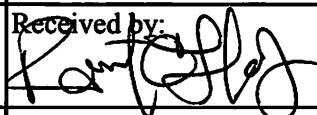
Phone: 303-487-1228

Project Name: Kristin 1 wellhead

Sampler Name: Ben Wagner

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4 TMB	1,3,5 TMB	CI	SO ₄	PH	
1	BH01	10/5/21	1116	4	3		1		X					X	X	X	X	X	X	Inorganic Analysis on hold
2	BH02	↓	1117	1	3		1		↓					↓	↓	↓	↓	↓		
3	BH03	↓	1124	1	3		1		↓					↓	↓	↓	↓	↓		
4	BH04	↓	1120	1	3		1		↓					↓	↓	↓	↓	↓		
5	BH05	↓	1136	1			4		↓					↓	↓	↓	↓	↓		
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 10/5/21 1500	Received by: Tasman's Lab Box	Date/Time: 10/5/21 1500	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours —	Notes:
Relinquished by:	Date/Time:	Received by: 	Date/Time: 10-5-21 1500	Sample Integrity: 6.5	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 6.5 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

2110071

Sample Receipt Checklist

S2 Work Order _____

Client: PDC/Tasman

Client Project ID:

Kristin / wellhead

Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	6.5
-----------	-----

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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name or Initials

Signature of Custodian

Date/Time

10.5.21



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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

BH01
2110071-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/21 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEJ0085	10/06/21	10/09/21	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: **10/05/21 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

BH02
2110071-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/21 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0085	10/06/21	10/09/21	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: **10/05/21 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.3 %	21-167		"	"	"	"	

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

BH03
2110071-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/21 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0085	10/06/21	10/09/21	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: **10/05/21 11:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		138 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		130 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

BH04
2110071-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/21 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0085	10/06/21	10/09/21	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: **10/05/21 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

BH05
2110071-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/05/21 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEJ0085	10/06/21	10/09/21	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: **10/05/21 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEJ0085 - EPA 5030 Water MS

Blank (BEJ0085-BLK1)

Prepared: 10/06/21 Analyzed: 10/09/21

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	14.1		"	13.3		106	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.0	21-167			

LCS (BEJ0085-BS1)

Prepared: 10/06/21 Analyzed: 10/09/21

Benzene	36.3	1.0	ug/l	33.3		109	51-132			
Toluene	39.3	1.0	"	33.3		118	51-138			
Ethylbenzene	42.1	1.0	"	33.3		126	58-146			
m,p-Xylene	82.9	2.0	"	66.7		124	57-144			
o-Xylene	41.8	1.0	"	33.3		125	53-146			
Naphthalene	36.7	1.0	"	33.3		110	70-130			
1,2,4-Trimethylbenzene	34.2	1.0	"	33.3		102	70-130			
1,3,5-Trimethylbenzene	42.5	1.0	"	33.3		127	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		103	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

Matrix Spike (BEJ0085-MS1)

Source: 2110070-01

Prepared: 10/06/21 Analyzed: 10/09/21

Benzene	36.4	1.0	ug/l	33.3	ND	109	34-141			
Toluene	39.7	1.0	"	33.3	ND	119	27-151			
Ethylbenzene	42.3	1.0	"	33.3	ND	127	29-160			
m,p-Xylene	83.0	2.0	"	66.7	ND	124	20-166			
o-Xylene	41.8	1.0	"	33.3	ND	125	33-159			
Naphthalene	39.7	1.0	"	33.3	ND	119	70-130			
1,2,4-Trimethylbenzene	34.2	1.0	"	33.3	ND	103	70-130			
1,3,5-Trimethylbenzene	42.9	1.0	"	33.3	ND	129	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.6	21-167			

Summit Scientific

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



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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BEJ0085 - EPA 5030 Water MS

Matrix Spike Dup (BEJ0085-MSD1)	Source: 2110070-01			Prepared: 10/06/21 Analyzed: 10/09/21						
Benzene	36.8	1.0	ug/l	33.3	ND	111	34-141	1.09	30	
Toluene	40.0	1.0	"	33.3	ND	120	27-151	0.703	30	
Ethylbenzene	42.2	1.0	"	33.3	ND	126	29-160	0.284	30	
m,p-Xylene	82.6	2.0	"	66.7	ND	124	20-166	0.471	30	
o-Xylene	42.1	1.0	"	33.3	ND	126	33-159	0.858	30	
Naphthalene	42.3	1.0	"	33.3	ND	127	70-130	6.36	30	
1,2,4-Trimethylbenzene	34.0	1.0	"	33.3	ND	102	70-130	0.586	30	
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3	ND	128	70-130	0.749	30	
Surrogate: 1,2-Dichloroethane-d4	14.7		"	13.3		110	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.6	21-167			

Summit Scientific

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

Project: Kristin 1 Wellhead
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/12/21 14:48

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