

TABLE 1
BAUER 5; 12, 21-4 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400		
GW01	7/3/2019	3.5	<1.0	1.6	16	~16	NM
BH01	10/31/2019	<1.0	<1.0	<1.0	<2.0	15.52	4612.68
BH01	1/23/2020	<1.0	<1.0	<1.0	<2.0	16.64	4611.56
BH01	4/21/2020	<1.0	<1.0	<1.0	<2.0	17.06	4611.14
BH01	7/20/2020	<1.0	<1.0	<1.0	<2.0	14.20	4614.00
BH02	10/31/2019	<1.0	<1.0	<1.0	<2.0	16.00	4612.22
BH02	1/23/2020	<1.0	<1.0	<1.0	<2.0	17.22	4611.00
BH02	4/21/2020	<1.0	<1.0	<1.0	<2.0	17.65	4610.57
BH02	7/20/2020	<1.0	<1.0	<1.0	<2.0	14.74	4613.48
BH03	10/31/2019	<1.0	<1.0	<1.0	<2.0	14.21	4613.61
BH03	1/23/2020	<1.0	<1.0	<1.0	<2.0	15.55	4612.27
BH03	4/21/2020	<1.0	<1.0	<1.0	<2.0	15.44	4612.38
BH03	7/20/2020	<1.0	<1.0	<1.0	<2.0	12.34	4615.48
BH04	10/31/2019	<1.0	<1.0	<1.0	<2.0	13.94	4613.81
BH04	1/23/2020	<1.0	<1.0	<1.0	<2.0	14.97	4612.78
BH04	4/21/2020	<1.0	<1.0	<1.0	<2.0	15.32	4612.43
BH04	7/20/2020	<1.0	<1.0	<1.0	<2.0	12.71	4615.04
BH05	10/31/2019	<1.0	<1.0	<1.0	<2.0	13.70	4613.71
BH05	1/23/2020	<1.0	<1.0	<1.0	<2.0	14.78	4612.63
BH05	4/21/2020	<1.0	<1.0	<1.0	<2.0	15.19	4612.22
BH05 ⁽³⁾	7/20/2020	<1.0	<1.0	<1.0	<2.0	12.23	NM

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective May 1, 2018.
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.
3. Depth to water is not corrected to reflect actual depth to groundwater from ground surface.

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

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 27, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Bauer 5; 12, 21-4

Work Order #2007182

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/20 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Bauer 5; 12, 21-4

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2007182-01	Water	07/20/20 11:39	07/20/20 14:00
BH02	2007182-02	Water	07/20/20 11:30	07/20/20 14:00
BH03	2007182-03	Water	07/20/20 11:57	07/20/20 14:00
BH04	2007182-04	Water	07/20/20 11:48	07/20/20 14:00
BH05	2007182-05	Water	07/20/20 11:18	07/20/20 14:00

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2007182

Page 1 of 1

Sampler Name: J. Marcus

Project Number: n/a

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 4007182

Client: DOC H. Brown Client Project ID: BAvel 5; 12, 21-4

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other_____ Airbill #: _____

Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____ (Describe)

Temp (°C)	2.6
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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.				
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, ect				
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?				
<u>Additional Comments (if any):</u>				
⁽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



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

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

BH01
2007182-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/20 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	2007211	07/22/20	07/23/20	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	

Date Sampled: **07/20/20 11:39**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		127 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		21-167		"	"	"	"	

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

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

BH02
2007182-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/20 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2007211	07/22/20	07/23/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/20/20 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

BH03
2007182-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/20 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2007211	07/22/20	07/23/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/20/20 11:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

BH04
2007182-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/20 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2007211	07/22/20	07/23/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/20/20 11:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

BH05
2007182-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/20 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2007211	07/22/20	07/23/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **07/20/20 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Bauer 5; 12, 21-4
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch 2007211 - EPA 5030 Water MS

Blank (2007211-BLK1)

Prepared: 07/22/20 Analyzed: 07/23/20

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	17.8		"	13.3	133	23-173				
Surrogate: Toluene-d8	14.6		"	13.3	109	20-170				
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3	105	21-167				

LCS (2007211-BS1)

Prepared: 07/22/20 Analyzed: 07/23/20

Benzene	17.6	1.0	ug/l	25.0	70.4	51-132				
Toluene	23.0	1.0	"	25.0	91.8	51-138				
Ethylbenzene	27.2	1.0	"	25.0	109	58-146				
m,p-Xylene	47.8	2.0	"	50.0	95.5	57-144				
o-Xylene	24.4	1.0	"	25.0	97.4	53-146				
Surrogate: 1,2-Dichloroethane-d4	16.7		"	13.3	125	23-173				
Surrogate: Toluene-d8	14.2		"	13.3	107	20-170				
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3	104	21-167				

Matrix Spike (2007211-MS1)

Source: 2007182-01

Prepared: 07/22/20 Analyzed: 07/23/20

Benzene	18.8	1.0	ug/l	25.0	ND	75.2	34-141			
Toluene	24.4	1.0	"	25.0	ND	97.4	27-151			
Ethylbenzene	28.2	1.0	"	25.0	ND	113	29-160			
m,p-Xylene	50.4	2.0	"	50.0	ND	101	20-166			
o-Xylene	24.7	1.0	"	25.0	ND	98.9	33-159			
Surrogate: 1,2-Dichloroethane-d4	17.0		"	13.3	128	23-173				
Surrogate: Toluene-d8	14.8		"	13.3	111	20-170				
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3	103	21-167				

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Bauer 5; 12, 21-4

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

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 2007211 - EPA 5030 Water MS

Matrix Spike Dup (2007211-MSD1)	Source: 2007182-01			Prepared: 07/22/20 Analyzed: 07/23/20						
Benzene	18.4	1.0	ug/l	25.0	ND	73.7	34-141	2.10	30	
Toluene	23.7	1.0	"	25.0	ND	94.7	27-151	2.83	30	
Ethylbenzene	27.1	1.0	"	25.0	ND	108	29-160	3.76	30	
m,p-Xylene	48.5	2.0	"	50.0	ND	97.0	20-166	3.94	30	
o-Xylene	24.6	1.0	"	25.0	ND	98.3	33-159	0.568	30	
Surrogate: 1,2-Dichloroethane-d4	17.9		"	13.3		134	23-173			
Surrogate: Toluene-d8	14.5		"	13.3		109	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	21-167			

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

Project: Bauer 5; 12, 21-4

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
07/27/20 11:24

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