

PDC Energy, Inc.
Third Quarter 2021 Groundwater Monitoring Summary

August 23, 2021

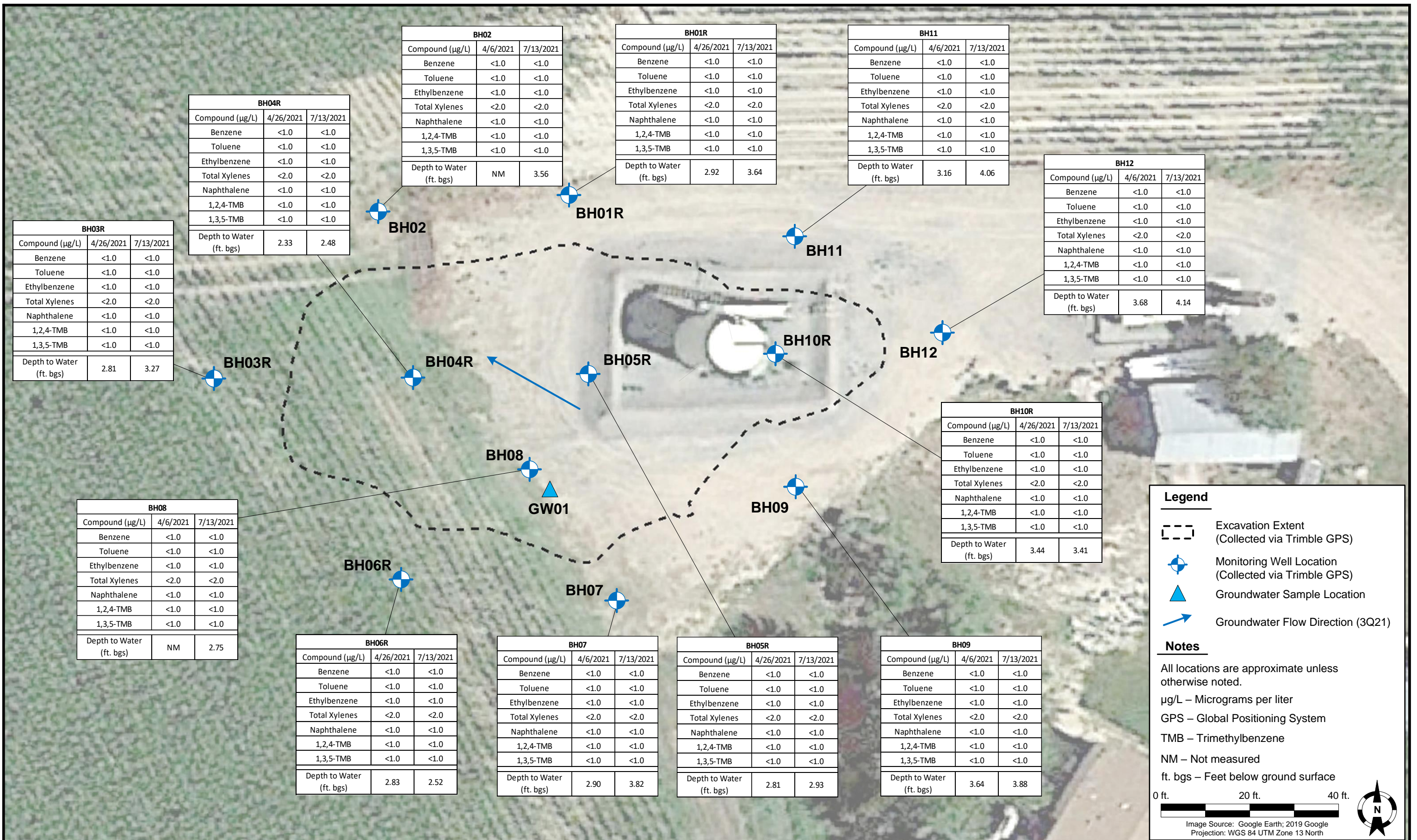
Former Owl Creek 7, 7-5 Tank Battery
NESE Section 5 T6N R64W
Remediation # 16159

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the former Owl Creek 7, 7-5 Tank Battery. On July 13, 2021, groundwater monitoring was conducted at 12 monitoring wells (BH01R, BH02, BH03R—BH06R, BH07—BH09, BH10R, BH11, and BH12). Temporary monitoring wells BH01R, BH02, BH03R—BH06R, BH07—BH08, BH10R, and BH11 were installed using a hand auger in cultivated land. The wells were purged, sampled, and subsequently abandoned. A GPS point was collected from all temporary monitoring well locations to ensure the groundwater sample locations remains consistent between quarters. Twelve groundwater samples were submitted 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, as well as chloride, and sulfate anions by EPA Method 300.0.

Third quarter 2021 analytical results indicated that organic compound concentrations were below the applicable COGCC Table 915-1 groundwater standard in all twelve monitoring wells. Monitoring well BH09 was utilized as the up-gradient well in order to observe and evaluate native site-specific groundwater conditions. Inorganic parameters were in exceedance of the COGCC Table 915-1 groundwater standards and 1.25x of the native site-specific groundwater concentrations collected from the up-gradient monitoring well (BH09) in monitoring wells BH03R, BH04R, BH05R, and BH08. Inorganic parameters were below the regulatory standards or within 1.25x the native site-specific groundwater concentration in the remaining eight monitoring wells. Sample locations and corresponding organic analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Sample locations and corresponding inorganic analytical results are illustrated on Figure 3. Groundwater analytical results are summarized in Tables 1 and 2. The laboratory analytical report is included in Attachment A.

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 fourth quarter 2021.

Fourth quarter 2021 groundwater sampling will be conducted in October 2021.



DATE: August 5, 2021

DESIGNED BY: B. Nelson

DRAWN BY: C. Ambler

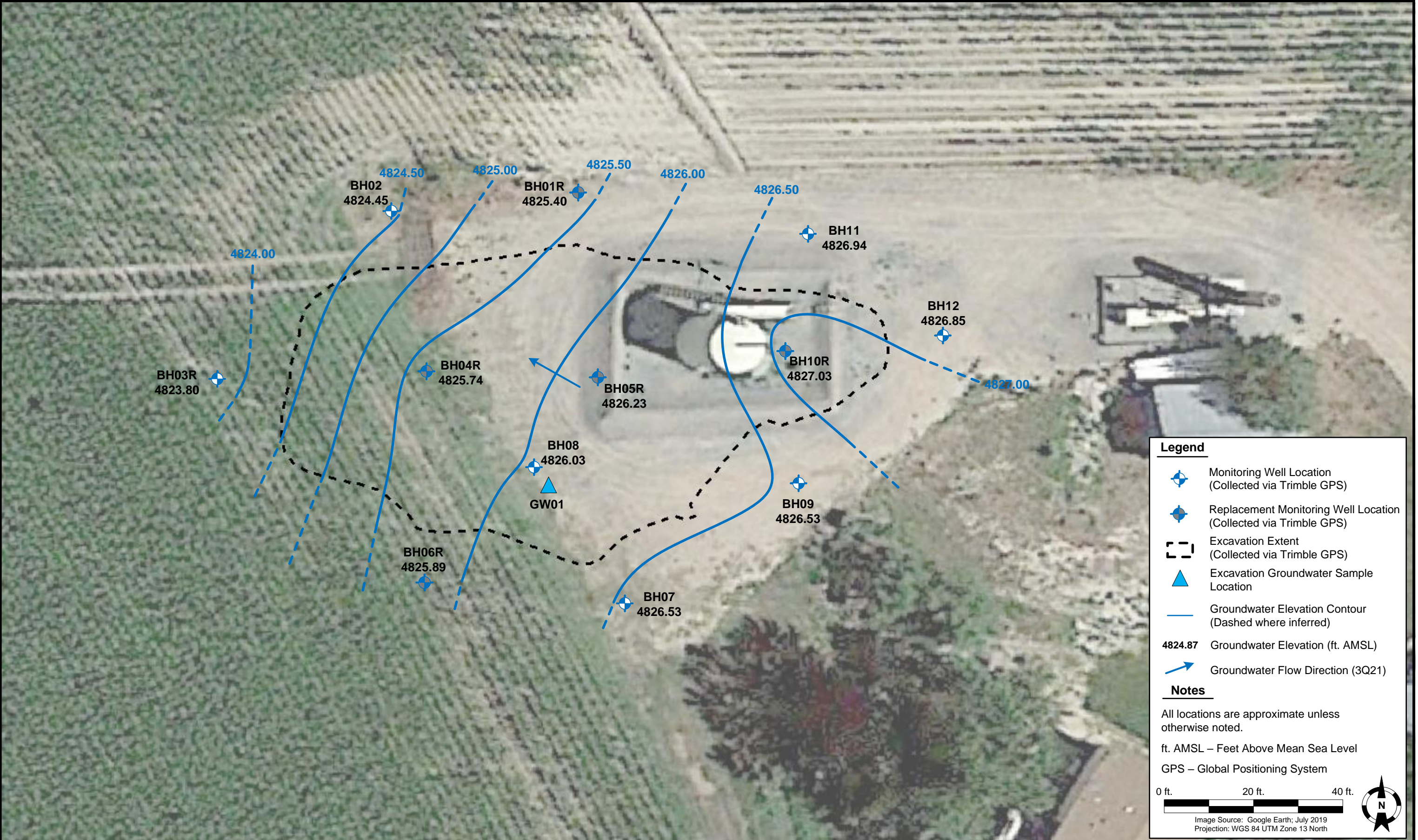


Tasman Geosciences, Inc.
6855 W. 119th Ave.
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Owl Creek 7, 7-5 Tank Battery
 NESE, Section 5 Township 6 North, Range 64 West
 Weld County, Colorado

GROUNDWATER ANALYTICAL RESULTS MAP

FIGURE
1



DATE: July 14, 2021

DESIGNED BY: B. Nelson

DRAWN BY: C. Ambler



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6855 West 119th Avenue
Broomfield, CO 80020

PDC Energy, Inc. – DJ Basin
Former Owl Creek 7, 7-5 Tank Battery
NESE, Section 5 Township 6 North, Range 64 West
Weld County, Colorado

**GROUNDWATER
ELEVATION CONTOUR
MAP (07/13/2021)**

**FIGURE
2**

TABLE 1
FORMER OWL CREEK 7, 7-5 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)	Fluorene (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	280	-	-
GW01	2/22/2021	<1.0	<1.0	2.9	5.9	2.8	12	1.8	NA	6	-
BH01R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.92	4824.87
BH01R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.64	4825.40
BH02	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	NM	NM
BH02	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.56	4824.45
BH03R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.81	4822.99
BH03R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.27	4823.80
BH04R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.33	4824.69
BH04R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	2.48	4825.74
BH05R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.81	4825.06
BH05R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	2.93	4826.23
BH06R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.83	4824.25
BH06R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	2.52	4825.89
BH07	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	2.90	4825.78
BH07	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.82	4826.53
BH08	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	NM	NM
BH08	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	2.75	4826.03
BH09	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	3.64	4826.77
BH09	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.88	4826.53
BH10R	4/26/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	3.44	4825.70
BH10R	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.41	4827.03
BH11	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	3.16	4826.40
BH11	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	4.06	4826.94
BH12	4/6/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	3.68	4827.31
BH12	7/13/2021	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	4.14	4826.85

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

NA = Constituent Not Analyzed

TABLE 2
FORMER OWL CREEK 7, 7-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG
BH01R	4/26/2021	1,140	157	254
BH01R	7/13/2021	572	16.2	263
BH02	4/6/2021	596	4.30	132
BH02	7/13/2021	530	14.4	474
BH03R	4/26/2021	1,550	205	237
BH03R	7/13/2021	1,860	292	1500
BH04R	4/26/2021	4,590	740	2,530
BH04R	7/13/2021	2,850	343	2,420
BH05R	4/26/2021	4,290	561	2,610
BH05R	7/13/2021	1,390	85.4	1,280
BH06R	4/26/2021	1,270	172	303
BH06R	7/13/2021	653	19.8	342
BH07	4/6/2021	561	3.34	125
BH07	7/13/2021	640	21.2	431
BH08	4/6/2021	686	6.88	227
BH08	7/13/2021	1,340	47.2	1100
BH09	4/6/2021	647	6.06	176
BH09	7/13/2021	633	23.8	495
BH10R	4/26/2021	1,540	189	410
BH10R	7/13/2021	578	8.60	376
BH11	4/6/2021	624	9.80	235
BH11	7/13/2021	505	10.0	266
BH12	4/6/2021	504	6.74	129
BH12	7/13/2021	528	24.8	439

TABLE 2
FORMER OWL CREEK 7, 7-5 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
INORGANIC PARAMETERS

Sample ID	Date Sampled	TDS (unit)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Table 915-1 Groundwater Standard (mg/L) ⁽¹⁾		<1.25 x BCKG	250 or <1.25 x BCKG	250 or <1.25 x BCKG

Notes:

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

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.

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

BOLD = Analytical result is in exceedance of applicable standard.

 = Up-gradient well used for background concentration.

Attachment A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 02, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Owl Creek 7,7-5

Work Order #2107176

Enclosed are the results of analyses for samples received by Summit Scientific on 07/13/21 17:45. 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: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01R	2107176-01	Water	07/13/21 14:51	07/13/21 17:45
BH02	2107176-02	Water	07/13/21 14:35	07/13/21 17:45
BH03R	2107176-03	Water	07/13/21 14:33	07/13/21 17:45
BH04R	2107176-04	Water	07/13/21 14:48	07/13/21 17:45
BH05R	2107176-05	Water	07/13/21 15:15	07/13/21 17:45
BH06R	2107176-06	Water	07/13/21 14:57	07/13/21 17:45
BH07	2107176-07	Water	07/13/21 15:22	07/13/21 17:45
BH08	2107176-08	Water	07/13/21 15:07	07/13/21 17:45
BH09	2107176-09	Water	07/13/21 15:19	07/13/21 17:45
BH10R	2107176-10	Water	07/13/21 15:08	07/13/21 17:45
BH11	2107176-11	Water	07/13/21 15:00	07/13/21 17:45
BH12	2107176-12	Water	07/13/21 15:10	07/13/21 17:45

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

S₂

2107176.1

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

Page 1 of 2

Client: PDC / Tasman

Project Manager: Mark Longhurst

Address: 6855 W. 119th Ave

E-Mail: mark.longhurst@pdce.com

City/State/Zip: Broomfield / CO/ 80020


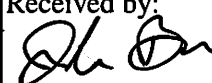
Phone: 303-487-1228

Project Name: Owl Creek 7, 7-5

Sampler Name: Yianni Tsambis

Project Number: N/A

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	NAP	1,3,5 TMB	1,2,4 TMB	TDS	Cl	SO ₄	
1	BH01R	7/13/21	1451	4	0		4		X				X	X	X	X	X	X	X	
2	BH02		1435		0		4													
3	BH03R		1433		0		4													
4	BH04R		1448		3		1													
5	BH05R		1515		0		4													
6	BH06R		1457		0		4													
7	BH07		1522		0		4													
8	BH08		1507		0		4													
9	BH09		1519		3		1													
10	BH10R		1508		0		4													

Relinquished by: 	Date/Time: 7/13/21 1720	Received by: Tasman's Lock Box	Date/Time: 7/13/21 1720	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: Tasman's Lockbox	Date/Time: 7/13/21 1745	Received by: 	Date/Time: 7/13/21 1745		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Summit Scientific

S₂

2107176.2

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

Page 2 of 2

Client: PDC / Tasman

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: Owl Creek 7, 7-5

Sampler Name: Yianni Tsambis

Project Number: N/A

					Preservative				Matrix				Analysis Requested						Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	NAP	1,3,5 TMB	1,2,4 TMB	TDS	Cl	SO4		
1	BH11	7/13/21	1500	4	0		+		X				X	X	X	X	X	X	X	X	
2	BH12	1	1510	1	3		1		1				1	1	1	1	1	1	1	1	
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 7/13/21 1720	Received by: Tasman's Lock Box	Date/Time: 7/13/21 1720	Turn Around Time (Check)	Notes:
				Same Day <input type="checkbox"/>	72 hours <input type="checkbox"/>
				24 hours <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>
				48 hours <input type="checkbox"/>	
				Sample Integrity: 3	
				Temperature Upon Receipt: <input type="checkbox"/>	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

2107176

Sample Receipt Checklist

S2 Work Order _____

Client: PDC / TasmanClient Project ID: Owl Creek 7, 7-5Shipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☐ Soil/Solid ☒ Water ☐ Other: _____
(Describe)

Temp (°C)	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 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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.				

JB
 Custodian Printed Name or Initials

John Bunn
 Signature of Custodian

7/13/21
 Date/Time



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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH01R
2107176-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	16.2	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	263	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 14:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	572	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH02
2107176-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	14.4	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	474	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	530	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	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: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH03R
2107176-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	292	12.0		mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	1500	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 14:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1860	10.0		mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH04R
2107176-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 14:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 14:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 14:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	343	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	2420	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 14:48**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	2850	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH05R
2107176-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	85.4	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	1280	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	1390	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH06R
2107176-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 14:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 14:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 14:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	19.8	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	342	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 14:57**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	653	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH07
2107176-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	21.2	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	431	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:22**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	604	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH08
2107176-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	47.2	12.0		mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	1100	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	1340	10.0		mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH09
2107176-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	23.8	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	495	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:19**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	633	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH10R
2107176-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	8.60	0.600	mg/L	10	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	376	60.0	"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	578	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH11
2107176-11 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	10.0	6.00		mg/L	100	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	266	60.0		"	200	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	505	10.0		mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

BH12
2107176-12 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/13/21 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BEG0246	07/14/21	07/15/21	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: **07/13/21 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **07/13/21 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Chloride	24.8	12.0	mg/L	200	BEG0313	07/19/21	07/19/21	EPA 300.0	
Sulfate	439	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **07/13/21 15:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Total Dissolved Solids	528	10.0	mg/L	1	BEG0277	07/16/21	07/16/21	SM2540C	

Summit Scientific

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

Project: Owl Creek 7,7-5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

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 BEG0246 - EPA 5030 Water MS

Blank (BEG0246-BLK1)

Prepared & Analyzed: 07/14/21

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	13.5		"	13.3		101	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.1	21-167			

LCS (BEG0246-BS1)

Prepared & Analyzed: 07/14/21

Benzene	52.6	1.0	ug/l	50.0		105	51-132			
Toluene	52.1	1.0	"	50.0		104	51-138			
Ethylbenzene	51.0	1.0	"	50.0		102	58-146			
m,p-Xylene	102	2.0	"	100		102	57-144			
o-Xylene	51.3	1.0	"	50.0		103	53-146			
Naphthalene	53.4	1.0	"	50.0		107	70-130			
1,2,4-Trimethylbenzene	50.2	1.0	"	50.0		100	70-130			
1,3,5-Trimethylbenzene	50.3	1.0	"	50.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

Matrix Spike (BEG0246-MS1)

Source: 2107138-01

Prepared & Analyzed: 07/14/21

Benzene	51.4	1.0	ug/l	50.0	ND	103	34-141			
Toluene	50.9	1.0	"	50.0	ND	102	27-151			
Ethylbenzene	48.9	1.0	"	50.0	ND	97.9	29-160			
m,p-Xylene	98.1	2.0	"	100	ND	98.1	20-166			
o-Xylene	49.0	1.0	"	50.0	ND	97.9	33-159			
Naphthalene	55.8	1.0	"	50.0	ND	112	70-130			
1,2,4-Trimethylbenzene	49.3	1.0	"	50.0	ND	98.6	70-130			
1,3,5-Trimethylbenzene	49.7	1.0	"	50.0	ND	99.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.7	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: Owl Creek 7,7-5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

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 BEG0246 - EPA 5030 Water MS

Matrix Spike Dup (BEG0246-MSD1)

Source: 2107138-01

Prepared & Analyzed: 07/14/21

Benzene	39.4	1.0	ug/l	50.0	ND	78.9	34-141	26.4	30	
Toluene	39.2	1.0	"	50.0	ND	78.3	27-151	26.0	30	
Ethylbenzene	37.8	1.0	"	50.0	ND	75.6	29-160	25.7	30	
m,p-Xylene	75.9	2.0	"	100	ND	75.9	20-166	25.5	30	
o-Xylene	38.3	1.0	"	50.0	ND	76.6	33-159	24.5	30	
Naphthalene	49.1	1.0	"	50.0	ND	98.2	70-130	12.9	30	
1,2,4-Trimethylbenzene	39.0	1.0	"	50.0	ND	78.0	70-130	23.3	30	
1,3,5-Trimethylbenzene	39.3	1.0	"	50.0	ND	78.5	70-130	23.5	30	
Surrogate: 1,2-Dichloroethane-d4	15.1		"	13.3		113	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.4	21-167			

Summit Scientific

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

Project: Owl Creek 7,7-5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

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

Batch BEG0313 - General Preparation

Blank (BEG0313-BLK1)

Prepared & Analyzed: 07/19/21

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BEG0313-BS1)

Prepared & Analyzed: 07/19/21

Chloride	3.24	0.0600	mg/L	3.00	108	90-110
Sulfate	15.8	0.300	"	15.0	105	90-110

Duplicate (BEG0313-DUP1)

Source: 2107140-01

Prepared & Analyzed: 07/19/21

Chloride	252	12.0	mg/L	257	2.28	20
Sulfate	2720	60.0	"	2720	0.125	20

Matrix Spike (BEG0313-MS1)

Source: 2107140-01

Prepared & Analyzed: 07/19/21

Chloride	795	12.0	mg/L	600	257	89.6	80-120
Sulfate	5970	60.0	"	3000	2720	109	80-120

Summit Scientific

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

Project: Owl Creek 7,7-5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BEG0277 - General Preparation

Blank (BEG0277-BLK1)

Prepared & Analyzed: 07/16/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEG0277-DUP1)

Source: 2107140-01

Prepared & Analyzed: 07/16/21

Total Dissolved Solids 2830 10.0 mg/L 3350 17.0 20

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: Owl Creek 7,7-5

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
08/02/21 13:13

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