

**TABLE 1**  
**BOOTH 11, 12, 21, 22-31 & 31AU TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>
BH01 @ 20-21'	5/6/2019	20-21	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH01 @ 28-32'	5/6/2019	28-32	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH01 @ 35-36'	5/6/2019	35-36	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH01 @ 42-43'	5/6/2019	42-43	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 20-21'	5/6/2019	20-21	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 28-32'	5/6/2019	28-32	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 35-36'	5/6/2019	35-36	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH02 @ 42-43'	5/6/2019	42-43	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH03 @ 20-21'	5/6/2019	20-21	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH03 @ 28-32'	5/6/2019	28-32	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH03 @ 35-36'	5/6/2019	35-36	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH03 @ 42-43'	5/6/2019	42-43	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 20-21'	5/7/2019	20-21	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 28-32'	5/7/2019	28-32	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 35-36'	5/7/2019	35-36	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH04 @ 42-43'	5/7/2019	42-43	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH05 @ 20-21'	5/7/2019	20-21	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH05 @ 28-32'	5/7/2019	28-32	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH05 @ 35-36'	5/7/2019	35-36	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH05 @ 42-43'	5/7/2019	42-43	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
BH06 @ 21.5-24'	6/4/2019	21.5-24	<b>1.3</b>	17	9.1	75	4.0	<b>8,640</b>
BH06 @ 27-32'	6/4/2019	27-32	<b>22</b>	<b>110</b>	24	<b>210</b>	7.6	<b>12,990</b>
BH06 @ 35-36'	6/4/2019	35-36	<b>1.7</b>	20	6.1	52	2.6	<b>3,820</b>
BH06 @ 36.5-39'	6/4/2019	36.5-39	<b>1.0</b>	17	7.0	68	3.8	<b>5,800</b>
BH06 @ 46.5-49'	6/4/2019	46.5-49	<0.0020	0.0061	0.011	0.19	0.075	292.2

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

COGCC = Colorado Oil and Gas Conservation Commission

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

GRO = Total volatile petroleum hydrocarbons - gasoline range organics

DRO = Total extractable petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

bgs = Below ground surface

**BOLD** = Analytical result is in exceedance of COGCC soil standards.

## **ATTACHMENT A**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 13, 2019

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Booth 11,12,21,22-31U&31AU

Enclosed are the results of analyses for samples received by Summit Scientific on 05/07/19 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 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@20-21'	1905083-01	Soil	05/06/19 08:57	05/07/19 17:45
BH01@28-32'	1905083-02	Soil	05/06/19 09:16	05/07/19 17:45
BH01@35-36'	1905083-03	Soil	05/06/19 09:33	05/07/19 17:45
BH01@42-43'	1905083-04	Soil	05/06/19 09:49	05/07/19 17:45
BH02@20-21'	1905083-05	Soil	05/06/19 10:49	05/07/19 17:45
BH02@28-32'	1905083-06	Soil	05/06/19 11:14	05/07/19 17:45
BH02@35-36'	1905083-07	Soil	05/06/19 11:25	05/07/19 17:45
BH02@42-43'	1905083-08	Soil	05/06/19 11:51	05/07/19 17:45
BH03@20-21'	1905083-09	Soil	05/06/19 12:44	05/07/19 17:45
BH03@28-32'	1905083-10	Soil	05/06/19 13:07	05/07/19 17:45
BH03@35-36'	1905083-11	Soil	05/06/19 13:21	05/07/19 17:45
BH03@42-43'	1905083-12	Soil	05/06/19 13:51	05/07/19 17:45
BH04@20-21'	1905083-13	Soil	05/07/19 09:10	05/07/19 17:45
BH04@28-32'	1905083-14	Soil	05/07/19 09:23	05/07/19 17:45
BH04@35-36'	1905083-15	Soil	05/07/19 09:45	05/07/19 17:45
BH04@42-43'	1905083-16	Soil	05/07/19 10:14	05/07/19 17:45
BH05@20-21'	1905083-17	Soil	05/07/19 11:16	05/07/19 17:45
BH05@28-32'	1905083-18	Soil	05/07/19 11:39	05/07/19 17:45
BH05@35-36'	1905083-19	Soil	05/07/19 12:06	05/07/19 17:45
BH05@42-43'	1905083-20	Soil	05/07/19 12:26	05/07/19 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

S<sub>2</sub>

1905083.1

4653 Table Mountain Drive ♦ Golden, Colorado 80403

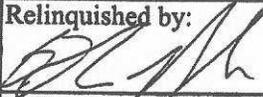
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 2

Client: PDC Energy Project Manager: Mark Longhurst  
 Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
 City/State/Zip: \_\_\_\_\_  
 Phone: \_\_\_\_\_ Project Name: Booth 11, 12, 21, 22-31U + 31AU  
 Sampler Name: Brock Nelson Project Number: \_\_\_\_\_

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested			Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	BTEXN 8260	TPH-GW 8260		TPH-DRO/ORG 8260
1	BH01 @ 20-21'	5/6/19	857	1			X			X			X	X	X	
2	BH01 @ 28-32'		916	1			X			X			X	X	X	
3	BH01 @ 35-36'		933	1			X			X			X	X	X	
4	BH01 @ 42-43'		949	1			X			X			X	X	X	
5	BH02 @ 20-21'		1049	1			X			X			X	X	X	
6	BH02 @ 28-32'		1014	1			X			X			X	X	X	
7	BH02 @ 35-36'		1125	1			X			X			X	X	X	
8	BH02 @ 42-43'		1151	1			X			X			X	X	X	
9	BH03 @ 20-21'		1244	1			X			X			X	X	X	
10	BH03 @ 28-32'		1307	1			X			X			X	X	X	

Relinquished by: 	Date/Time: 5/7/19 1730	Received by: <u>Tasman Lock Box</u>	Date/Time: 5/7/19 1730	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <u>X</u> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4.5</u> Samples Intact: <u>Yes</u> No	Notes:
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: 5.7.19 1745	Received by: 	Date/Time: 5.7.19 1745		
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

# Summit Scientific

1905083.2

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Page 2 of 2

Client: PDC Energy

Project Manager: Mark Longhurst

Address:

E-Mail:

City/State/Zip:

Phone:

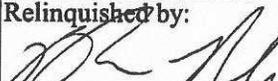
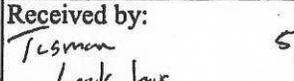
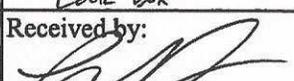
Project Name: Booth 11, 12, 21, 22-31U + 31AU

Sampler Name: Bruck Nelson

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	BTEXN 8260	TPH-620 8710	TPH-DAG 605				
1	BH03 @ 35-36'	5/6/19	1321	1			X			X			X	X	X				
2	BH03 @ 42-43'	↓	1351	1			X			X			X	X	X				
3	BH04 @ 20-21'	5/7/19	910	1			X			X			X	X	X				
4	BH04 @ 28-32'	↓	923	1			X			X			X	X	X				
5	BH04 @ 35-36'	↓	945	1			X			X			X	X	X				
6	BH04 @ 42-43'	↓	1014	1			X			X			X	X	X				
7	BH05 @ 20-21'	↓	1116	1			X			X			X	X	X				
8	BH05 @ 28-32'	↓	1139	1			X			X			X	X	X				
9	BH05 @ 35-36'	↓	1206	1			X			X			X	X	X				
10	BH05 @ 42-43'	↓	1226	1			X			X			X	X	X				

Relinquished by: 	Date/Time: 5/7/19 1730	Received by: 	Date/Time: 5/7/19 1730	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: <u>4.5</u> Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: 	Date/Time: 5.7.19 1745	Received by: 	Date/Time: 5.7.19 1745		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 1905083

Client: PDC Client Project ID: Booth 11, 12, 21, 22-31U + 31AV

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

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

Temp (°C)	<u>4.5</u>
-----------	------------

Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 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 <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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

LP  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

5.7.19 1840  
Date/Time



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

Project: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH01@20-21'**  
**1905083-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/06/19 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.3 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	1905111	05/08/19	05/08/19	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/06/19 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		111 %		30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH01@28-32'**  
**1905083-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/08/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH01@35-36'**  
**1905083-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 09:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 09:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH01@42-43'**  
**1905083-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 09:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 09:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 09:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH02@20-21'**  
**1905083-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 10:49**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH02@28-32'**  
**1905083-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 11:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 11:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH02@35-36'**  
**1905083-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH02@42-43'**  
**1905083-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 11:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 11:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 11:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH03@20-21'**  
**1905083-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 12:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 12:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 12:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 12:44**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH03@28-32'**  
**1905083-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 13:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 13:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:07**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		113 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH03@35-36'**  
**1905083-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH03@42-43'**  
**1905083-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/06/19 13:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/06/19 13:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/06/19 13:51**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH04@20-21'**  
**1905083-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 09:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 09:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH04@28-32'**  
**1905083-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:23**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH04@35-36'**  
**1905083-15 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH04@42-43'**  
**1905083-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 10:14**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH05@20-21'**  
**1905083-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 11:16**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH05@28-32'**  
**1905083-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 11:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 11:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 11:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 11:39**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH05@35-36'**  
**1905083-19 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 12:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**BH05@42-43'**  
**1905083-20 (Soil)**

**Summit Scientific**

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

Date Sampled: **05/07/19 12:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1905112	05/08/19	05/10/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/07/19 12:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/07/19 12:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1905111	05/08/19	05/09/19	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/07/19 12:26**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
05/13/19 09:24

### 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 1905112 - EPA 5030 Soil MS

##### Blank (1905112-BLK1)

Prepared: 05/08/19 Analyzed: 05/10/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	21-167			

##### LCS (1905112-BS1)

Prepared: 05/08/19 Analyzed: 05/10/19

Benzene	0.118	0.0020	mg/kg	0.125		94.7	70-130			
Toluene	0.127	0.0050	"	0.125		101	70-130			
Ethylbenzene	0.133	0.0050	"	0.125		106	70-130			
m,p-Xylene	0.251	0.010	"	0.250		100	70-130			
o-Xylene	0.128	0.0050	"	0.125		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	21-167			

##### Matrix Spike (1905112-MS1)

Source: 1905083-01

Prepared: 05/08/19 Analyzed: 05/10/19

Benzene	0.116	0.0020	mg/kg	0.125	ND	93.1	70-130			
Toluene	0.127	0.0050	"	0.125	ND	101	70-130			
Ethylbenzene	0.136	0.0050	"	0.125	ND	109	70-130			
m,p-Xylene	0.260	0.010	"	0.250	ND	104	70-130			
o-Xylene	0.131	0.0050	"	0.125	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 05/13/19 09:24

**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 1905112 - EPA 5030 Soil MS**

**Matrix Spike Dup (1905112-MSD1)**

Source: 1905083-01

Prepared: 05/08/19 Analyzed: 05/10/19

Benzene	0.123	0.0020	mg/kg	0.125	ND	98.4	70-130	5.51	30
Toluene	0.130	0.0050	"	0.125	ND	104	70-130	2.60	30
Ethylbenzene	0.140	0.0050	"	0.125	ND	112	70-130	2.77	30
m,p-Xylene	0.270	0.010	"	0.250	ND	108	70-130	3.83	30
o-Xylene	0.133	0.0050	"	0.125	ND	106	70-130	1.50	30
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.5	23-173		
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9	20-170		
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1905111 - EPA 3550A**

**Blank (1905111-BLK1)**

Prepared & Analyzed: 05/08/19

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							

**LCS (1905111-BS1)**

Prepared & Analyzed: 05/08/19

C10-C28 (DRO)	507	50	mg/kg	500	101	81.4-129				
---------------	-----	----	-------	-----	-----	----------	--	--	--	--

**Matrix Spike (1905111-MS1)**

Source: 1905083-01

Prepared & Analyzed: 05/08/19

C10-C28 (DRO)	487	50	mg/kg	500	9.39	95.4	77.8-133			
---------------	-----	----	-------	-----	------	------	----------	--	--	--

**Matrix Spike Dup (1905111-MSD1)**

Source: 1905083-01

Prepared & Analyzed: 05/08/19

C10-C28 (DRO)	476	50	mg/kg	500	9.39	93.3	77.8-133	2.19	8.48	
---------------	-----	----	-------	-----	------	------	----------	------	------	--

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
05/13/19 09:24

### 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 11, 2019

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

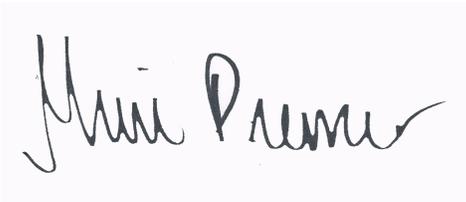
Denver, CO 80203

RE: Booth 11,12,21,22-31U&31AU

Work Order # 1906030

Enclosed are the results of analyses for samples received by Summit Scientific on 06/04/19 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Ben Shrewsbury

Laboratory Manager



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

Project: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH06@21.5-24'	1906030-01	Soil	06/04/19 09:21	06/04/19 17:20
BH06@27-32'	1906030-02	Soil	06/04/19 09:32	06/04/19 17:20
BH06@35-36'	1906030-03	Soil	06/04/19 09:38	06/04/19 17:20
BH06@36.5-39'	1906030-04	Soil	06/04/19 09:45	06/04/19 17:20
BH06@46.5-49'	1906030-05	Soil	06/04/19 10:20	06/04/19 17:20

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.*

# Summit Scientific

S<sub>2</sub>

1906030

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Client: PDC Energy Project Manager: Mark Longhurst  
Address: E-Mail: Mark.Longhurst@pdce.com  
City/State/Zip: Project Name: Booth 11, 12, 21, 22-31V & 31AV  
Phone: Project Number:  
Sampler Name: Brock Nelson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN 8260	TPH-Geo 8260	TPH-DRO 2005	TPH-DRO 8015	
1	BH06 @ 21.5-24'	6/4/2019	921	1			X			X			X	X	X	X	
2	BH06 @ 27-32'		932	1			X			X			X	X	X	X	
3	BH06 @ 35-36'		938	1			X			X			X	X	X	X	
4	BH06 @ 36.5-39'		945	1			X			X			X	X	X	X	
5	BH06 @ 46.5-49'		1020	1			X			X			X	X	X	X	
6																	
7																	
8																	
9																	
10																	

Relinquished by: 	Date/Time: 6/4/2019 1400	Received by: Tasman Lock Box	Date/Time: 6/4/2019 1400	<b>Turn Around Time</b> (Check) 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"/> <b>Sample Integrity:</b> Temperature Upon Receipt: 1.4 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Notes:</b>
Relinquished by: TASMAN LOCK BOX	Date/Time: 6-4-19 17:20	Received by: 	Date/Time: 6-4-19 17:20		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

1906030

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: PDC Client Project ID: Booth11,12,21,22-31U&31AU

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

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

Temp (°C)	1.4
-----------	-----

Thermometer ID: 61857155-K

	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 provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 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 <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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

MP  
Custodian Printed Name or Initials

*Muri Premer*  
Signature of Custodian

6/4/19  
Date/Time



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

Project: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**BH06@21.5-24'**  
**1906030-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/19 09:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>1.3</b>	0.20	mg/kg	100	1906068	06/06/19	06/07/19	EPA 8260B	
<b>Toluene</b>	<b>17</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>9.1</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>75</b>	1.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>4.0</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2000</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		82.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		136 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/19 09:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>6100</b>	50	mg/kg	1	1906066	06/06/19	06/07/19	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>540</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:21**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**BH06@27-32'**  
**1906030-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/19 09:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>22</b>	0.20	mg/kg	100	1906068	06/06/19	06/07/19	EPA 8260B	
<b>Toluene</b>	<b>110</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>24</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>210</b>	10	"	1000	"	"	"	"	
<b>Naphthalene</b>	<b>7.6</b>	1.0	"	100	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4100</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		96.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		88.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		186 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/19 09:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>8200</b>	50	mg/kg	1	1906066	06/06/19	06/07/19	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>690</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:32**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		834 %	30-150		"	"	"	"	S-02

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**BH06@35-36'**  
**1906030-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/19 09:38**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>1.7</b>	0.20	mg/kg	100	1906068	06/06/19	06/07/19	EPA 8260B	
<b>Toluene</b>	<b>20</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>6.1</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>52</b>	1.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>2.6</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1200</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:38**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		80.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		88.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/19 09:38**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>2300</b>	50	mg/kg	1	1906066	06/06/19	06/07/19	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>320</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:38**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		278 %	30-150		"	"	"	"	S-02

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**BH06@36.5-39'**  
**1906030-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>1.0</b>	0.20	mg/kg	100	1906068	06/06/19	06/07/19	EPA 8260B	
<b>Toluene</b>	<b>17</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>7.0</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>68</b>	1.0	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>3.8</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1700</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		81.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		127 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>3700</b>	50	mg/kg	1	1906066	06/06/19	06/07/19	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>400</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		63.2 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**BH06@46.5-49'**  
**1906030-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/04/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1906068	06/06/19	06/08/19	EPA 8260B	
<b>Toluene</b>	<b>0.0061</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.011</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.19</b>	0.010	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.075</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>5.2</b>	0.50	"	"	"	"	"	"	

Date Sampled: **06/04/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		80.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/04/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>220</b>	50	mg/kg	1	1906066	06/06/19	06/07/19	EPA 8015M	
<b>C28-C36 (ORO)</b>	<b>67</b>	50	"	"	"	"	"	"	

Date Sampled: **06/04/19 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		125 %	30-150		"	"	"	"	

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
06/11/19 10:04

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

#### Summit Scientific

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

#### Batch 1906068 - EPA 5030 Soil MS

##### Blank (1906068-BLK1)

Prepared: 06/06/19 Analyzed: 06/07/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0400		81.7	23-173			
Surrogate: Toluene-d8	0.0368		"	0.0400		91.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.8	21-167			

##### LCS (1906068-BS1)

Prepared: 06/06/19 Analyzed: 06/07/19

Benzene	0.105	0.0020	mg/kg	0.100		105	70-130			
Toluene	0.107	0.0050	"	0.100		107	70-130			
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130			
m,p-Xylene	0.233	0.010	"	0.200		117	70-130			
o-Xylene	0.117	0.0050	"	0.100		117	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.3	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0355		"	0.0400		88.6	21-167			

##### Matrix Spike (1906068-MS1)

Source: 1906024-01

Prepared: 06/06/19 Analyzed: 06/07/19

Benzene	0.111	0.0020	mg/kg	0.100	0.00807	103	70-130			
Toluene	0.122	0.0050	"	0.100	0.0225	100	70-130			
Ethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130			
m,p-Xylene	0.249	0.010	"	0.200	0.0231	113	70-130			
o-Xylene	0.145	0.0050	"	0.100	0.0210	124	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0400		81.8	23-173			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 06/11/19 10:04

**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 1906068 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1906068-MSD1)</b>	<b>Source: 1906024-01</b>			<b>Prepared: 06/06/19 Analyzed: 06/07/19</b>							
Benzene	0.116	0.0020	mg/kg	0.100	0.00807	108	70-130	4.23	30		
Toluene	0.135	0.0050	"	0.100	0.0225	113	70-130	10.1	30		
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	1.62	30		
m,p-Xylene	0.260	0.010	"	0.200	0.0231	118	70-130	4.01	30		
o-Xylene	0.138	0.0050	"	0.100	0.0210	117	70-130	5.28	30		
Surrogate: 1,2-Dichloroethane-d4	0.0325		"	0.0400		81.2	23-173				
Surrogate: Toluene-d8	0.0363		"	0.0400		90.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2	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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1906066 - EPA 3550A**

**Blank (1906066-BLK1)**

Prepared: 06/06/19 Analyzed: 06/07/19

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							

**LCS (1906066-BS1)**

Prepared: 06/06/19 Analyzed: 06/07/19

C10-C28 (DRO)	547	50	mg/kg	500	109	81.4-129				
---------------	-----	----	-------	-----	-----	----------	--	--	--	--

**Matrix Spike (1906066-MS1)**

**Source: 1906024-01**

Prepared: 06/06/19 Analyzed: 06/07/19

C10-C28 (DRO)	503	50	mg/kg	500	39.7	92.6	77.8-133			
---------------	-----	----	-------	-----	------	------	----------	--	--	--

**Matrix Spike Dup (1906066-MSD1)**

**Source: 1906024-01**

Prepared: 06/06/19 Analyzed: 06/07/19

C10-C28 (DRO)	532	50	mg/kg	500	39.7	98.5	77.8-133	5.75	8.48	
---------------	-----	----	-------	-----	------	------	----------	------	------	--

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: Booth 11,12,21,22-31U&31AU

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
06/11/19 10:04

### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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