

**TABLE 1**  
**STATE 5519 8-34, 43, 33-8, 8A 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>
SS01 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS02 @ 1'	1/8/2018	1	<0.0020	<0.0050	0.0055	0.072	0.034	63.5
SS03 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	0.062	253.8
SS05 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	0.015	130.70
SS06 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	0.023	141.1
SS07 @ 6"	1/8/2018	0.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	0.58

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 09, 2018

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: State 5519 8-34, 43, 33-8, 8A

Enclosed are the results of analyses for samples received by Summit Scientific on 01/08/18 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6"	1801069-01	Soil	01/08/18 10:00	01/08/18 16:00
SS02@1'	1801069-02	Soil	01/08/18 10:44	01/08/18 16:00
SS03@6"	1801069-03	Soil	01/08/18 10:08	01/08/18 16:00
SS04@6"	1801069-04	Soil	01/08/18 10:12	01/08/18 16:00
SS05@6"	1801069-05	Soil	01/08/18 10:16	01/08/18 16:00
SS06@6"	1801069-06	Soil	01/08/18 10:20	01/08/18 16:00
SS07@6"	1801069-07	Soil	01/08/18 11:16	01/08/18 16:00

Summit Scientific

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/09/18 06:34

**Sample Receipt Checklist**

S2 Work Order: 1801069

Client: PDC

Client Project ID: State 5519 8-34, 43, 33-8, 8A

Shipped Via: PV.

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #:

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

Cooler ID					
Temp (°C)	<u>2.9</u>				

Thermometer ID: T006

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" 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"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, etc.				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<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.

Muri P.  
Custodian Printed Name

ML 1-8-18  
Signature or Initials of Custodian

17:00  
Date/Time



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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

**SS01@6"**  
**1801069-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801076	01/08/18	01/08/18	8015M	

Date Sampled: **01/08/18 10:00**

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

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

Date Sampled: **01/08/18 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.7 %	21-167		"	"	"	"	

Summit Scientific

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/09/18 06:34

**SS02@1'**  
**1801069-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>55</b>	50	mg/kg	1	1801076	01/08/18	01/08/18	8015M	

Date Sampled: **01/08/18 10:44**

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

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

Date Sampled: **01/08/18 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.034</b>	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.0055</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.072</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>8.5</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		89.2 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

**SS03@6"**  
**1801069-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801076	01/08/18	01/08/18	8015M	

Date Sampled: **01/08/18 10:08**

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

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

Date Sampled: **01/08/18 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		89.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/09/18 06:34

**SS04@6"**  
**1801069-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>250</b>	50	mg/kg	1	1801076	01/08/18	01/08/18	8015M	

Date Sampled: **01/08/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		128 %	30-150		"	"	"	"	

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

Date Sampled: **01/08/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.062</b>	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>3.8</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		89.7 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.9 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.8 %	21-167		"	"	"	"	

Summit Scientific

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/09/18 06:34

**SS05@6"**  
**1801069-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>130</b>	50	mg/kg	1	1801076	01/08/18	01/09/18	8015M	

Date Sampled: **01/08/18 10:16**

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

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

Date Sampled: **01/08/18 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.015</b>	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.70</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.4 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

**SS06@6"**  
**1801069-06 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>140</b>	50	mg/kg	1	1801076	01/08/18	01/09/18	8015M	

Date Sampled: **01/08/18 10:20**

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

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

Date Sampled: **01/08/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Naphthalene</b>	<b>0.023</b>	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.1</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.4 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	21-167		"	"	"	"	

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

**SS07@6"**  
**1801069-07 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **01/08/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1801076	01/08/18	01/09/18	8015M	

Date Sampled: **01/08/18 11:16**

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

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

Date Sampled: **01/08/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1801075	01/08/18	01/08/18	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.58</b>	0.50	"	"	"	"	"	"	

Date Sampled: **01/08/18 11:16**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 01/09/18 06:34

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

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

**Batch 1801076 - EPA 3550A**

<b>Blank (1801076-BLK1)</b>				Prepared & Analyzed: 01/08/18							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	12.9		"	12.5		104	30-150				
<b>LCS (1801076-BS1)</b>				Prepared & Analyzed: 01/08/18							
C10-C28 (DRO)	548	50	mg/kg	499		110	73-134				
Surrogate: <i>o</i> -Terphenyl	17.6		"	12.5		141	30-150				
<b>Matrix Spike (1801076-MS1)</b>				Source: 1801069-01		Prepared & Analyzed: 01/08/18					
C10-C28 (DRO)	583	50	mg/kg	499	11.1	115	50-148				
Surrogate: <i>o</i> -Terphenyl	18.5		"	12.5		148	30-150				
<b>Matrix Spike Dup (1801076-MSD1)</b>				Source: 1801069-01		Prepared & Analyzed: 01/08/18					
C10-C28 (DRO)	562	50	mg/kg	499	11.1	110	50-148	3.72		20	
Surrogate: <i>o</i> -Terphenyl	17.4		"	12.5		139	30-150				

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Denver CO, 80203

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
01/09/18 06:34

**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 1801075 - EPA 5030 Soil MS**

**Blank (1801075-BLK1)**

Prepared & Analyzed: 01/08/18

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0338</i>		<i>"</i>	<i>0.0400</i>		<i>84.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.3</i>	<i>21-167</i>			

**LCS (1801075-BS1)**

Prepared & Analyzed: 01/08/18

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0935	0.0020	"	0.100		93.5	58-130			
Toluene	0.0960	0.0050	"	0.100		96.0	61-134			
Ethylbenzene	0.0981	0.0050	"	0.0992		98.9	74-139			
m,p-Xylene	0.185	0.010	"	0.200		92.8	73-137			
o-Xylene	0.0926	0.0050	"	0.0980		94.5	73-141			
Xylenes (total)	0.278	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.51	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0328</i>		<i>"</i>	<i>0.0400</i>		<i>82.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0438</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.2</i>	<i>21-167</i>			

**Matrix Spike (1801075-MS1)**

Source: 1801069-01

Prepared & Analyzed: 01/08/18

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0972	0.0020	"	0.100	ND	97.2	30-131			
Toluene	0.100	0.0050	"	0.100	ND	100	30-134			
Ethylbenzene	0.106	0.0050	"	0.0992	ND	107	22-153			
m,p-Xylene	0.202	0.010	"	0.200	ND	101	10-159			
o-Xylene	0.0993	0.0050	"	0.0980	ND	101	31-151			
Xylenes (total)	0.301	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.73	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0354</i>		<i>"</i>	<i>0.0400</i>		<i>88.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0423</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.5</i>	<i>21-167</i>			

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

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

**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 1801075 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1801075-MSD1)</b>	<b>Source: 1801069-01</b>			<b>Prepared &amp; Analyzed: 01/08/18</b>						
Naphthalene	ND	0.010	mg/kg	ND	ND	106	30-131	9.02	42	
Benzene	0.106	0.0020	"	0.100	ND	110	30-134	9.08	30	
Toluene	0.110	0.0050	"	0.100	ND	120	22-153	11.6	24	
Ethylbenzene	0.119	0.0050	"	0.0992	ND	114	10-159	12.0	68	
m,p-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151	11.9	38	
o-Xylene	0.339	0.010	"	ND	ND	30-160	11.9	30		
Xylenes (total)	2.96	0.50	"	ND	ND	30-160	8.05	30		
Gasoline Range Hydrocarbons										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0362</i>		<i>"</i>	<i>0.0400</i>		<i>90.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0391</i>		<i>"</i>	<i>0.0400</i>		<i>97.7</i>	<i>21-167</i>			

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Denver CO, 80203

Project: State 5519 8-34, 43, 33-8, 8A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
01/09/18 06:34

### 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