

TABLE 1
SAPPINGTON 22Q-301 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 ⁽²⁾ (mg/kg)
COGCC standards for soil (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500
SS01 @ 1'	5/5/2017	1	<0.0020	0.049	0.041	0.57	0.056	953
SS02 @ 4'	5/5/2017	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS03 @ 5'	5/5/2017	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	2.7
SS04 @ 4'	5/5/2017	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	1.3
SS05 @ 5'	5/5/2017	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS06 @ 5'	5/9/2016	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 09, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Sappington 22Q-301

Enclosed are the results of analyses for samples received by Summit Scientific on 05/08/17 01:28. 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: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@1'	1705074-01	Soil	05/05/17 15:17	05/08/17 01:28
SS02@4'	1705074-02	Soil	05/05/17 15:44	05/08/17 01:28
SS03@5'	1705074-03	Soil	05/05/17 16:44	05/08/17 01:28
SS04@4'	1705074-04	Soil	05/05/17 17:02	05/08/17 01:28
SS05@5'	1705074-05	Soil	05/05/17 17:27	05/08/17 01:28

Summit Scientific

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

Project: Sappington 22Q-301

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/09/17 06:24

Sample Receipt Checklist

S2 Work Order: 1705074

Client: PDC Client Project ID: Sappington 22Q-301

Shipped Via: H/D Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID					
Temp (°C)	<u>2.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>on ice</u>
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				

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

Paul Sappington
 Custodian Printed Name

[Signature]
 Signature or Initials of Custodian

5-18-17
 Date/Time

[Signature]



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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

SS01@1'
1705074-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/17 15:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	920	50	mg/kg	1	1705076	05/08/17	05/08/17	8015M	

Date Sampled: **05/05/17 15:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		118 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/17 15:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.056	0.010	mg/kg	1	1705073	05/08/17	05/08/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	0.049	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.041	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.57	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	33	0.50	"	"	"	"	"	"	

Date Sampled: **05/05/17 15:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		127 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

SS02@4'
1705074-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/17 15:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705076	05/08/17	05/08/17	8015M	

Date Sampled: **05/05/17 15:44**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/17 15:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705073	05/08/17	05/08/17	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: **05/05/17 15:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

SS03@5'
1705074-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/17 16:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705076	05/08/17	05/08/17	8015M	

Date Sampled: **05/05/17 16:44**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/17 16:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705073	05/08/17	05/08/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2.7	0.50	"	"	"	"	"	"	

Date Sampled: **05/05/17 16:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

SS04@4'
1705074-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/17 17:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705076	05/08/17	05/08/17	8015M	

Date Sampled: **05/05/17 17:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		106 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/17 17:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705073	05/08/17	05/08/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.3	0.50	"	"	"	"	"	"	

Date Sampled: **05/05/17 17:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

SS05@5'
1705074-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/17 17:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705076	05/08/17	05/09/17	8015M	

Date Sampled: **05/05/17 17:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		106 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/17 17:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705073	05/08/17	05/08/17	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: **05/05/17 17:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.8 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Sappington 22Q-301

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 05/09/17 06:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1705076 - EPA 3550A

Blank (1705076-BLK1)

Prepared & Analyzed: 05/08/17

C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	13.2		"	12.5		106	30-150			

LCS (1705076-BS1)

Prepared & Analyzed: 05/08/17

C10-C28 (DRO)	655	50	mg/kg	499		131	73-134			
<i>Surrogate: o-Terphenyl</i>	13.3		"	12.5		107	30-150			

Matrix Spike (1705076-MS1)

Source: 1705045-01

Prepared: 05/08/17 Analyzed: 05/09/17

C10-C28 (DRO)	1160	50	mg/kg	499		233	50-148			QM-07
<i>Surrogate: o-Terphenyl</i>	12.9		"	12.5		103	30-150			

Matrix Spike Dup (1705076-MSD1)

Source: 1705045-01

Prepared: 05/08/17 Analyzed: 05/09/17

C10-C28 (DRO)	924	50	mg/kg	499		185	50-148	22.7	20	QM-07
<i>Surrogate: o-Terphenyl</i>	12.5		"	12.5		100	30-150			

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

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 1705073 - EPA 5030 Soil MS

Blank (1705073-BLK1)

Prepared & Analyzed: 05/08/17

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>0.0440</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>21-167</i>			

LCS (1705073-BS1)

Prepared & Analyzed: 05/08/17

Naphthalene	0.0130	0.010	mg/kg				66-138			
Benzene	0.0903	0.0020	"	0.100		90.3	58-130			
Toluene	0.100	0.0050	"	0.100		100	61-134			
Ethylbenzene	0.114	0.0050	"	0.0992		115	74-139			
m,p-Xylene	0.207	0.010	"	0.200		104	73-137			
o-Xylene	0.103	0.0050	"	0.0980		105	73-141			
Xylenes (total)	0.311	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.94	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0440</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>21-167</i>			

Matrix Spike (1705073-MS1)

Source: 1705069-01

Prepared & Analyzed: 05/08/17

Naphthalene	0.0107	0.010	mg/kg		0.00867		10-158			
Benzene	0.0928	0.0020	"	0.100	ND	92.8	30-131			
Toluene	0.102	0.0050	"	0.100	ND	102	30-134			
Ethylbenzene	0.116	0.0050	"	0.0992	ND	117	22-153			
m,p-Xylene	0.213	0.010	"	0.200	ND	107	10-159			
o-Xylene	0.109	0.0050	"	0.0980	ND	111	31-151			
Xylenes (total)	0.322	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	6.40	0.50	"		1.56		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0453</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

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 1705073 - EPA 5030 Soil MS

Matrix Spike Dup (1705073-MSD1)	Source: 1705069-01			Prepared & Analyzed: 05/08/17						
Naphthalene	0.00963	0.010	mg/kg		0.00867		10-158	10.9	42	
Benzene	0.0911	0.0020	"	0.100	ND	91.1	30-131	1.89	34	
Toluene	0.101	0.0050	"	0.100	ND	101	30-134	1.21	30	
Ethylbenzene	0.115	0.0050	"	0.0992	ND	116	22-153	1.12	24	
m,p-Xylene	0.211	0.010	"	0.200	ND	106	10-159	1.30	68	
o-Xylene	0.109	0.0050	"	0.0980	ND	111	31-151	0.193	38	
Xylenes (total)	0.319	0.010	"		ND		30-160	0.926	30	
Gasoline Range Hydrocarbons	6.80	0.50	"		1.56		30-160	6.09	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0446</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

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

Project: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/09/17 06:24

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 10, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Sappington 22Q-301

Enclosed are the results of analyses for samples received by Summit Scientific on 05/09/17 17:45. 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: Sappington 22Q-301

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
05/10/17 06:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@5'	1705085-01	Soil	05/09/17 10:20	05/09/17 17:45

Summit Scientific

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Summit Scientific 1705085

741 Corporate Circle Suite I • Golden, Colorado 80401
 303-277-9310 • 303-374-5933 Fax

Client: PDC
 Address: _____
 City/State/Zip: _____
 Phone: _____ Fax: _____
 Sampler Name: Tyler Blessing

Page 1 of 1

Project Manager: Mark Longhurst
 E-Mail: Mark.Longhurst@pdce.com
 Project Name: Sappington 22Q-301
 Project Number: _____

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:						Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEXN (9260)	DRO (TPH)						
SS06 @ 5'	5/9/2017	10:22	1		X			X				X	X						
Relinquished by: <u>[Signature]</u>	Date/Time: <u>5/9/17 13:45</u>	Received by: _____	Date/Time: _____	Turn Around Time (Check)				Notes: <u>OK</u>											
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Same Day	<input checked="" type="checkbox"/>	72 Hours	<input type="checkbox"/>	24 Hours	<input type="checkbox"/>	Standard	<input type="checkbox"/>								
Relinquished by: _____	Date/Time: _____	Received in Lab by: <u>[Signature]</u>	Date/Time: <u>5-9-17 17:00</u>	Sample Integrity:				Temperature Upon Receipt: <u>W-C</u>											
				Intact: Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>												

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Sample Receipt Checklist

S2 Work Order: M05085

Client: PK Client Project ID: Sappington 22Q-301

Shipped Via: _____ Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

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

Cooler ID					
Temp (°C)	<u>6.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?				
For volatiles in water – is there headspace present? if yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

[Signature]
 Custodian Printed Name

[Signature]
 Signature or Initials of Custodian

5.9.17
 Date/Time

[Signature]



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SS06@5'
1705085-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/09/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1705086	05/09/17	05/09/17	8015M	

Date Sampled: **05/09/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/09/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1705088	05/09/17	05/09/17	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: **05/09/17 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Summit Scientific

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Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
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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 1705086 - EPA 3550A

Blank (1705086-BLK1)

Prepared & Analyzed: 05/09/17

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>13.1</i>		"	<i>12.5</i>		<i>105</i>	<i>30-150</i>				

LCS (1705086-BS1)

Prepared: 05/09/17 Analyzed: 05/10/17

C10-C28 (DRO)	472	50	mg/kg	499	15.3	94.5	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>14.1</i>		"	<i>12.5</i>		<i>113</i>	<i>30-150</i>				

Matrix Spike (1705086-MS1)

Source: 1705083-01

Prepared: 05/09/17 Analyzed: 05/10/17

C10-C28 (DRO)	496	50	mg/kg	499	15.3	96.4	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>14.7</i>		"	<i>12.5</i>		<i>117</i>	<i>30-150</i>				

Matrix Spike Dup (1705086-MSD1)

Source: 1705083-01

Prepared: 05/09/17 Analyzed: 05/10/17

C10-C28 (DRO)	480	50	mg/kg	499	15.3	93.2	50-148	3.27	20		
<i>Surrogate: o-Terphenyl</i>	<i>14.0</i>		"	<i>12.5</i>		<i>112</i>	<i>30-150</i>				

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Project Manager: Mark Longhurst

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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 1705088 - EPA 5030 Soil MS

Blank (1705088-BLK1)

Prepared & Analyzed: 05/09/17

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>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>21-167</i>			

LCS (1705088-BS1)

Prepared & Analyzed: 05/09/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.103	0.0020	"	0.100		103	58-130			
Toluene	0.113	0.0050	"	0.100		113	61-134			
Ethylbenzene	0.121	0.0050	"	0.0992		122	74-139			
m,p-Xylene	0.225	0.010	"	0.200		113	73-137			
o-Xylene	0.115	0.0050	"	0.0980		117	73-141			
Xylenes (total)	0.340	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.58	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>21-167</i>			

Matrix Spike (1705088-MS1)

Source: 1705058-01

Prepared & Analyzed: 05/09/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.105	0.0020	"	0.100	ND	105	30-131			
Toluene	0.116	0.0050	"	0.100	ND	116	30-134			
Ethylbenzene	0.126	0.0050	"	0.0992	ND	127	22-153			
m,p-Xylene	0.235	0.010	"	0.200	ND	118	10-159			
o-Xylene	0.119	0.0050	"	0.0980	ND	122	31-151			
Xylenes (total)	0.354	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.92	0.50	"		1.85		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>95.0</i>	<i>21-167</i>			

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Volatile Organic Compounds by EPA Method 8260B - Quality Control
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Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1705088 - EPA 5030 Soil MS

Matrix Spike Dup (1705088-MSD1)	Source: 1705058-01			Prepared & Analyzed: 05/09/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	106	30-131	1.28	42	
Benzene	0.106	0.0020	"	0.100	ND	118	30-134	1.66	30	
Toluene	0.118	0.0050	"	0.100	ND	128	22-153	0.948	24	
Ethylbenzene	0.127	0.0050	"	0.0992	ND	119	10-159	1.12	68	
m,p-Xylene	0.122	0.0050	"	0.0980	ND	125	31-151	2.51	38	
o-Xylene	0.360	0.010	"	ND	ND	30-160	1.59	30		
Xylenes (total)	2.83	0.50	"	1.85	ND	30-160	3.10	30		
Gasoline Range Hydrocarbons										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.3</i>	<i>21-167</i>			

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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