

TABLE 1
NELSON 11, 21-33 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 @ 8'	1/10/2017	8	<0.0020	0.0065	<0.0050	<0.010	<0.010	<50
SS02 @ 8'	1/10/2017	8	0.011	0.033	<0.0050	0.016	<0.010	<50
SS03 @ 8'	1/11/2017	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS04 @ 8'	1/11/2017	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS05 @ 8'	1/11/2017	8	0.0063	0.052	<0.0050	0.040	<0.010	<50
SS06 @ 8'	1/11/2017	8	<0.0020	0.0058	<0.0050	<0.010	<0.010	<50

Notes:

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

TABLE 2
NELSON 11, 21-33 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (feet bgs) ⁽²⁾
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
GW01	2/6/2017	210	350	6.2	360	~ 10

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.

2. Depth to groundwater measured from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

bgs = Below ground surface

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

BOLD = Analytical result is in exceedance of COGCC groundwater standards.

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 11, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Nelson 11, 21-33

Enclosed are the results of analyses for samples received by Summit Scientific on 01/10/17 17:00. 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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@8'	1701047-01	Soil	01/10/17 14:05	01/10/17 17:00
SS02@8'	1701047-02	Soil	01/10/17 15:02	01/10/17 17:00

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/11/17 08:44

Summit Scientific

1701047

741 Corporate Circle Suite 1 • Golden, Colorado 80401
 303-277-9310 • 303-374-5933 Fax

Page 1 of 1

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

Project Manager: Mark Longhurst
 E-Mail: mark.longhurst@pdce.com
 Project Name: Nelson 11, 21-33
 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)	BTEX 8260	6 BTEX (8260)		ORP (TPH)
S501 @ 8'	1/10/17	14:05	1			X						X	X		
S502 @ 8'	1/10/17	15:07	1			X						X	X		
Relinquished by: <u>[Signature]</u>	Date/Time: <u>1/10/17 17:01</u>	Received by: <u>[Signature]</u>	Date/Time: <u>1/10/17 17:01</u>	Turn Around Time (Check)				Notes							
				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>				On ice							
				48 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>											
Relinquished by: _____	Date/Time: _____	Received in Lab by: _____	Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>3.1C</u>											
				Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>											

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/11/17 08:44

Sample Receipt Checklist

S2 Work Order: 1701047
 Client: PDC Client Project ID: Nelson 11, 21-33
 Shipped Via: PU Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	3.1				

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⁾ ?	<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.

Ken Shrewsbury
 Custodian Printed Name

[Signature]
 Signature of Initials of Custodian

1-10-17
 Date/Time

[Signature]



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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

SS01@8'
1701047-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701070	01/11/17	01/11/17	8015M	

Date Sampled: **01/10/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		90.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701071	"	01/11/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	0.0065	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/17 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

SS02@8'
1701047-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/10/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701070	01/11/17	01/11/17	8015M	

Date Sampled: **01/10/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/10/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701071	"	01/11/17	EPA 8260B	
Benzene	0.011	0.0020	"	"	"	"	"	"	
Toluene	0.033	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.016	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/10/17 15:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/11/17 08:44

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 1701070 - EPA 3550A

Blank (1701070-BLK1)

Prepared & Analyzed: 01/10/17

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>11.9</i>		"	<i>12.5</i>		<i>95.1</i>	<i>30-150</i>				

LCS (1701070-BS1)

Prepared & Analyzed: 01/10/17

C10-C28 (DRO)	490	50	mg/kg	499		98.2	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>12.4</i>		"	<i>12.5</i>		<i>99.5</i>	<i>30-150</i>				

Matrix Spike (1701070-MS1)

Source: 1701039-01

Prepared & Analyzed: 01/10/17

C10-C28 (DRO)	429	50	mg/kg	493	11.4	84.6	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>12.0</i>		"	<i>12.4</i>		<i>96.8</i>	<i>30-150</i>				

Matrix Spike Dup (1701070-MSD1)

Source: 1701039-01

Prepared & Analyzed: 01/10/17

C10-C28 (DRO)	420	50	mg/kg	493	11.4	82.9	50-148	1.95		20	
<i>Surrogate: o-Terphenyl</i>	<i>11.8</i>		"	<i>12.4</i>		<i>95.6</i>	<i>30-150</i>				

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

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 1701071 - EPA 5030 Soil MS

Blank (1701071-BLK1)

Prepared & Analyzed: 01/10/17

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>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>	<i>21-167</i>			

LCS (1701071-BS1)

Prepared & Analyzed: 01/10/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0967	0.0020	"	0.100		96.7	58-130			
Toluene	0.110	0.0050	"	0.100		110	61-134			
Ethylbenzene	0.117	0.0050	"	0.0992		118	74-139			
m,p-Xylene	0.225	0.010	"	0.200		113	73-137			
o-Xylene	0.117	0.0050	"	0.0980		119	73-141			
Xylenes (total)	0.341	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.77	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.1</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>21-167</i>			

Matrix Spike (1701071-MS1)

Source: 1701033-01

Prepared & Analyzed: 01/10/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0964	0.0020	"	0.100	ND	96.4	30-131			
Toluene	0.106	0.0050	"	0.100	ND	106	30-134			
Ethylbenzene	0.118	0.0050	"	0.0992	ND	119	22-153			
m,p-Xylene	0.222	0.010	"	0.200	ND	111	10-159			
o-Xylene	0.116	0.0050	"	0.0980	ND	118	31-151			
Xylenes (total)	0.337	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.94	0.50	"		0.270		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0400</i>		<i>97.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>96.0</i>	<i>21-167</i>			

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

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 1701071 - EPA 5030 Soil MS

Matrix Spike Dup (1701071-MSD1)	Source: 1701033-01			Prepared & Analyzed: 01/10/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	107	23-173			42
Benzene	0.0969	0.0020	"	0.100	ND	96.9	30-131	0.497		34
Toluene	0.108	0.0050	"	0.100	ND	108	30-134	1.29		30
Ethylbenzene	0.120	0.0050	"	0.0992	ND	121	22-153	1.69		24
m,p-Xylene	0.225	0.010	"	0.200	ND	113	10-159	1.71		68
o-Xylene	0.117	0.0050	"	0.0980	ND	119	31-151	0.954		38
Xylenes (total)	0.342	0.010	"		ND		30-160	1.45		30
Gasoline Range Hydrocarbons	2.87	0.50	"		0.270		30-160	2.32		30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>96.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>	<i>21-167</i>			

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/17 08:44

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 12, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Nelson 11, 21-33

Enclosed are the results of analyses for samples received by Summit Scientific on 01/11/17 17:50. 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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@8'	1701056-01	Soil	01/11/17 09:29	01/11/17 17:50
SS04@8'	1701056-02	Soil	01/11/17 10:46	01/11/17 17:50
SS05@8'	1701056-03	Soil	01/11/17 10:52	01/11/17 17:50
SS06@8'	1701056-04	Soil	01/11/17 10:56	01/11/17 17:50

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

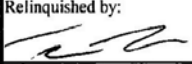
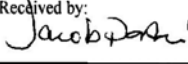
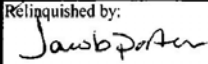
Reported:
01/12/17 06:59

Summit Scientific 1701056

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: PDC Energy	Project Manager: Mark Longhurst
Address:	E-Mail: Mark.Longhurst@pdce.com
City/State/Zip:	Project Name: Nelson 11, 21-33
Phone: Fax:	Project Number:
Sampler Name: Tyler Blessing	

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 (8260)	DRO (TPH)		
SS03 @ 8'	1/11/2017	9:29	1		X			X			X	X			
SS04 @ 8'	1/11/2017	10:46	1		X			X			X	X			
SS05 @ 8'	1/11/2017	10:52	1		X			X			X	X			
SS06 @ 8'	1/11/2017	10:56	1		X			X			X	X			
Relinquished by: 	Date/Time: 1/11/2017 13:19	Received by: 	Date/Time: 1/11/17 16:52	Turn Around Time (Check)				Notes:							
				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>				ONICE							
				24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>											
				48 Hours <input type="checkbox"/>											
Relinquished by: 	Date/Time: 1/11/17 17:30	Received by:	Date/Time:	Sample Integrity:											
				Temperature Upon Receipt: 1.0											
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/12/17 06:59

Sample Receipt Checklist

S2 Work Order: 1701056

Client: PDC ENERGY Client Project ID: Nelson 11, 21 33

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

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

Cooler ID					
Temp (°C)	<u>1.0</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⁾ ?	<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.

[Signature] [Signature] 1/11/17
 Custodian Printed Name Signature or Initials of Custodian Date/Time



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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

SS03@8'
1701056-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/17 09:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701081	01/11/17	01/12/17	8015M	

Date Sampled: **01/11/17 09:29**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/17 09:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701082	01/11/17	01/11/17	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: **01/11/17 09:29**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

SS04@8'
1701056-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701081	01/11/17	01/12/17	8015M	

Date Sampled: **01/11/17 10:46**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701082	01/11/17	01/11/17	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: **01/11/17 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

SS05@8'
1701056-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/17 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701081	01/11/17	01/12/17	8015M	

Date Sampled: **01/11/17 10:52**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/17 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701082	01/11/17	01/11/17	EPA 8260B	
Benzene	0.0063	0.0020	"	"	"	"	"	"	
Toluene	0.052	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.040	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/17 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

SS06@8'
1701056-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/17 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1701081	01/11/17	01/12/17	8015M	

Date Sampled: **01/11/17 10:56**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/17 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1701082	01/11/17	01/11/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	0.0058	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/17 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/12/17 06:59

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 1701081 - EPA 3550A

Blank (1701081-BLK1)

Prepared & Analyzed: 01/11/17

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.7		"	12.5		102	30-150				

LCS (1701081-BS1)

Prepared & Analyzed: 01/11/17

C10-C28 (DRO)	464	50	mg/kg	499		92.9	73-134				
<i>Surrogate: o-Terphenyl</i>	13.2		"	12.5		106	30-150				

Matrix Spike (1701081-MS1)

Source: 1701052-01

Prepared & Analyzed: 01/11/17

C10-C28 (DRO)	486	50	mg/kg	499	13.7	94.6	50-148				
<i>Surrogate: o-Terphenyl</i>	13.3		"	12.5		107	30-150				

Matrix Spike Dup (1701081-MSD1)

Source: 1701052-01

Prepared & Analyzed: 01/11/17

C10-C28 (DRO)	475	50	mg/kg	499	13.7	92.4	50-148	2.30		20	
<i>Surrogate: o-Terphenyl</i>	13.1		"	12.5		105	30-150				

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

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 1701082 - EPA 5030 Soil MS

Blank (1701082-BLK1)

Prepared & Analyzed: 01/11/17

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>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</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>			

LCS (1701082-BS1)

Prepared & Analyzed: 01/11/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0932	0.0020	"	0.100		93.2	58-130			
Toluene	0.107	0.0050	"	0.100		107	61-134			
Ethylbenzene	0.115	0.0050	"	0.0992		116	74-139			
m,p-Xylene	0.219	0.010	"	0.200		110	73-137			
o-Xylene	0.113	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.332	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.80	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0399</i>		<i>"</i>	<i>0.0400</i>		<i>99.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>			

Matrix Spike (1701082-MS1)

Source: 1701052-01

Prepared & Analyzed: 01/11/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0954	0.0020	"	0.100	ND	95.4	30-131			
Toluene	0.108	0.0050	"	0.100	ND	108	30-134			
Ethylbenzene	0.117	0.0050	"	0.0992	ND	118	22-153			
m,p-Xylene	0.233	0.010	"	0.200	0.00963	112	10-159			
o-Xylene	0.119	0.0050	"	0.0980	0.00351	118	31-151			
Xylenes (total)	0.352	0.010	"		0.0131		30-160			
Gasoline Range Hydrocarbons	2.84	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0441</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>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

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 1701082 - EPA 5030 Soil MS

Matrix Spike Dup (1701082-MSD1)	Source: 1701052-01			Prepared & Analyzed: 01/11/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	107	23-173		42	
Benzene	0.0943	0.0020	"	0.100	ND	94.3	30-131	1.17	34	
Toluene	0.106	0.0050	"	0.100	ND	106	30-134	1.71	30	
Ethylbenzene	0.117	0.0050	"	0.0992	ND	118	22-153	0.308	24	
m,p-Xylene	0.231	0.010	"	0.200	0.00963	111	10-159	0.957	68	
o-Xylene	0.121	0.0050	"	0.0980	0.00351	120	31-151	1.75	38	
Xylenes (total)	0.352	0.010	"		0.0131		30-160	0.0341	30	
Gasoline Range Hydrocarbons	2.83	0.50	"		ND		30-160	0.179	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>21-167</i>			

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/12/17 06:59

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 07, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Nelson 11, 21-33

Enclosed are the results of analyses for samples received by Summit Scientific on 02/06/17 17:20. 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: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/17 06:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	1702043-01	Water	02/06/17 12:54	02/06/17 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.



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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst




Reported:
02/07/17 06:20

Summit Scientific 1702043

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

Page 1 of 1

Client: PDC Energy	Project Manager: Mark Longhurst
Address:	E-Mail: Mark.Longhurst@pdce.com
City/State/Zip:	Project Name: Nelson 11, 21-33
Phone: Fax:	Project Number:
Sampler Name: Tyler Blessing	

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)	BTEX (8260)								
GW01	2/6/2017	12:54	3	X				X				X								
Relinquished by: 				Date/Time: 2/6/17 1400	Received by: 				Date/Time: 2/6/17 1700	Turn Around Time (Check)						Notes: on ice				
										Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input type="checkbox"/> 48 Hours <input type="checkbox"/>										
Relinquished by: 				Date/Time: 2/6/17 1720	Received in Lab by:				Date/Time:	Sample Integrity: Temperature Upon Receipt: 6.2°C Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										

www.s2scientific.com





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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/17 06:20

Sample Receipt Checklist

S2 Work Order: 1702043
Client: PDC Energy Client Project ID: Nelson 11, 21-33
Shipped Via: P/U (UPS, FedEx, Hand Delivered, Pick-up, etc.) Airbill #: _____
Matrix (check all that apply): Air Soil/Solid Water Other: _____ (Describe)

Cooler ID				
Temp (°C)	6.2			

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⁾ ? 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⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.		✓		
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	✓			HCl
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

2/6/17 1220
Date/Time

[Signature]



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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 02/07/17 06:20

GW01
1702043-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/06/17 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	210	1.0	ug/l	1	1702059	02/06/17	02/06/17	EPA 8260B	
Toluene	350	100	"	100	"	"	"	"	
Ethylbenzene	6.2	1.0	"	1	"	"	"	"	
Xylenes (total)	360	1.0	"	"	"	"	"	"	

Date Sampled: **02/06/17 12:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		108 %		37-154	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.6 %		45-149	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %		45-146	"	"	"	"	

Summit Scientific

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

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/17 06:20

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 1702059 - EPA 5030 Water MS

Blank (1702059-BLK1)

Prepared & Analyzed: 02/06/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.5	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103	45-146			

LCS (1702059-BS1)

Prepared & Analyzed: 02/06/17

Benzene	30.4	1.0	ug/l	33.3		91.4	51-132			
Toluene	33.0	1.0	"	33.3		99.2	51-138			
Ethylbenzene	37.9	1.0	"	33.1		115	58-146			
m,p-Xylene	75.9	2.0	"	66.5		114	57-144			
o-Xylene	38.2	1.0	"	32.7		117	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.5	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.0	45-149			
Surrogate: 4-Bromofluorobenzene	14.1		"	13.3		106	45-146			

Matrix Spike (1702059-MS1)

Source: 1702030-01

Prepared & Analyzed: 02/06/17

Benzene	37.3	1.0	ug/l	33.3	6.00	94.0	34-141			
Toluene	34.0	1.0	"	33.3	ND	102	27-151			
Ethylbenzene	67.2	1.0	"	33.1	20.2	142	29-160			
m,p-Xylene	191	2.0	"	66.5	77.3	170	20-166			QM-07
o-Xylene	36.9	1.0	"	32.7	ND	113	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.3		106	37-154			
Surrogate: Toluene-d8	13.4		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105	45-146			

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

Project: Nelson 11, 21-33

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 02/07/17 06:20

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 1702059 - EPA 5030 Water MS

Matrix Spike Dup (1702059-MSD1)	Source: 1702030-01			Prepared & Analyzed: 02/06/17							
Benzene	37.0	1.0	ug/l	33.3	6.00	93.2	34-141	0.753	32		
Toluene	33.6	1.0	"	33.3	ND	101	27-151	1.39	25		
Ethylbenzene	63.7	1.0	"	33.1	20.2	132	29-160	5.33	50		
m,p-Xylene	178	2.0	"	66.5	77.3	151	20-166	6.81	36		
o-Xylene	38.2	1.0	"	32.7	ND	117	33-159	3.30	26		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.1</i>		<i>"</i>	<i>13.3</i>		<i>106</i>	<i>37-154</i>				
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.2</i>	<i>45-149</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.8</i>		<i>"</i>	<i>13.3</i>		<i>111</i>	<i>45-146</i>				

Summit Scientific

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1775 Sherman St. STE. 3000
Denver CO, 80203

Project: Nelson 11, 21-33

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
02/07/17 06:20

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