

0 250 500 1,000 1,500 Feet

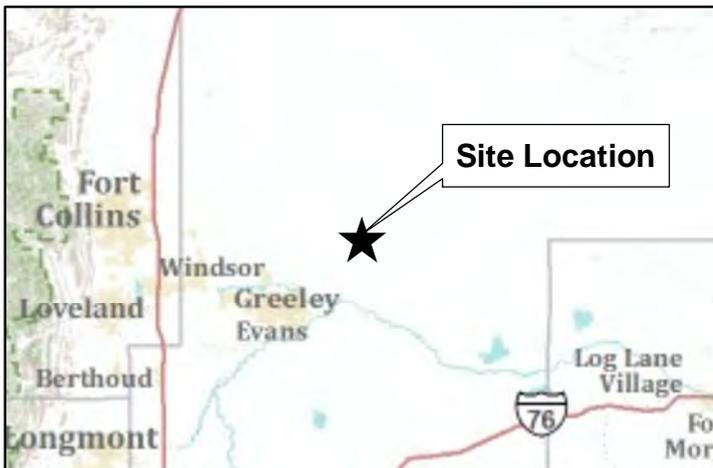
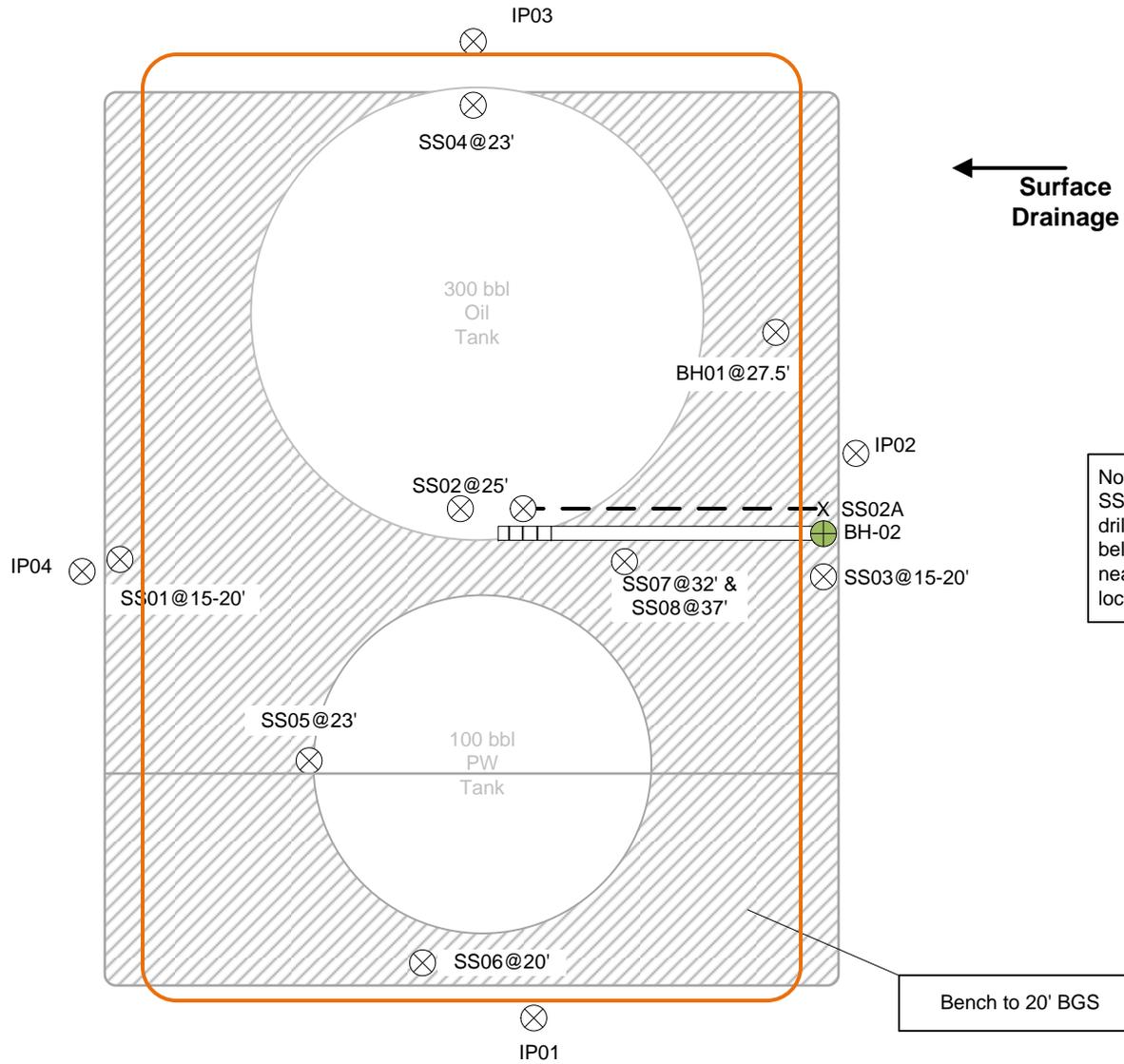


Figure 1

Site Location Map
Barrell 41-4
NENE S4 T6N R64W
Weld County, Colorado

Drawn By: BDH
Date: 5/10/13



Note:
 SS02A and BH-02 were angle drilled to access the 25 to 27 foot below ground surface interval near the SS02@25' sample location.

Note:
 Surface drainage direction is estimated based on site topography and is not related to regional topography.

PROJECT NO:	
DRAWN BY:	BDH
DATE:	5/10/13

Facility Diagram
 PDC Energy – DJ Basin
 Barrell 41-4
 NENE S4 T6N R64W
 Weld County, CO



6899 Pecos St., Unit C
 Denver, CO 80221

LEGEND	
	Earthen Berm
	Approximate extent of excavation
	Soil Sample Location
	Angled Remediation Well Access Point

FIGURE 2
 Not to Scale

**TABLE 1
BARRELL 41-4
SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (Feet bgs)	PID Readings (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzne (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
BH01@27.5'	6/21/2011	27.5	NA	1.5	16	5.2	47	2.3	2,750
SS01@15'-20'	2/16/2011	15-20	NA	<0.005	0.0056	<0.005	0.032	0.021	63
SS02@25'	2/16/2011	25	NA	2.1	36	11	73	2.9	6,900
SS03@15'-20'	2/16/2011	15-20	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<50.5
SS04@23'	2/16/2011	23	NA	<0.005	<0.005	<0.005	<0.015	0.0062	0.82
SS05@23'	2/16/2011	23	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<50.5
SS06@20'	2/16/2011	20	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<50.5
SS07@32'	3/3/2011	32	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<50.5
SS08@37'	3/3/2011	37	NA	<0.005	<0.005	<0.005	<0.015	<0.005	<50.5
Confirmation soil samples below were collected subsequent to chemical oxidant injection activities.									
IP01	7/10/2012	15-18	0.0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
IP02	7/10/2012	20-25	0.0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
IP03	7/10/2012	15-18	0.0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
IP04	7/10/2012	14-18	0.0	<0.005	<0.005	<0.005	<0.010	<0.005	<50
SS02A	1/8/2013	25-27	1,200	0.034	14	11	83	0.24	5,000
COGCC standards for Soil (mg/kg) ⁽¹⁾				0.17	85	100	175	23	500

Notes:

- 1). Standards for Soil are taken from 2 CCR 404-1, Table 910-1, effective April 1, 2009.
 - 2). TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.
- GRO - Gasoline range organics. DRO - Diesel range organics.
mg/kg= Milligrams per kilogram. bgs - Below ground surface.
ppm - Parts per million ND- Not Detected
- Bold red values indicate an exceedance of the COGCC soil standards for the Site.**

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 20, 2011

Brian Dodek
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: PDC - Barrell 41-4

Enclosed are the results of analyses for samples received by Summit Scientific on 02/16/11 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
President / Laboratory Director



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@15'-20'	R102089-01	Soil	02/16/11 14:10	02/16/11 17:00
SS02@25'	R102089-02	Soil	02/16/11 14:15	02/16/11 17:00
SS03@15-20'	R102089-03	Soil	02/16/11 14:20	02/16/11 17:00
SS04@23'	R102089-04	Soil	02/16/11 14:25	02/16/11 17:00
SS05@23'	R102089-05	Soil	02/16/11 14:30	02/16/11 17:00
SS06@20'	R102089-06	Soil	02/16/11 14:35	02/16/11 17:00

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

Summit Scientific 2/10/2011

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9810 • 303-277-9531 Fax

Client: LT Environmental, Inc.
Address: 4600 West 60th Avenue
City/State/Zip: Arvada, CO 80003
Phone: (303) 433-9788
Sampler Name: J. Rees

Project Manager: Brian Dodek
E-Mail: bdodek@ltenv.com
Project Name: Barrell 41-4
Project Number: 0188-11024.05

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)	DRO	GSTX	BTEX	Table 9.10 Full		Table 9.10 Short	PH / EC
S2010/5-30	2/16	1416	1			X				X								
S2010/5-30		1415	1			X				X								
S2010/5-30		1420	1			X				X								
S2010/5-30		1425	1			X				X								
S2010/5-30		1430	1			X				X								
S2010/5-30		1435	1			X				X								

Relinquished by:	Date/Time: 2/16/11	Received by:	Date/Time: 2/16/11	Turn Around Time (Check):	Notes:
Relinquished by:	Date/Time: 2/16/11	Received by:	Date/Time: 2/16/11	<input type="checkbox"/> Same Day <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Standard	Results by Fri AM
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:	Temperature upon Receipt: 5.1
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS01@15'-20'
R102089-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	59	50	mg/kg	1	1021604	02/16/11	02/16/11	8015 DRO	

Date Sampled: **02/16/11 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		118 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.021	0.0050	mg/kg	1	1021603	02/16/11	02/17/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	0.0056	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	0.021	0.010	"	"	"	"	"	"	
o-Xylene	0.011	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.0	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		82.0 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.1 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.0 %	78.4-125		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS02@25'
R102089-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4900	50	mg/kg	1	1021604	02/16/11	02/16/11	8015 DRO	

Date Sampled: **02/16/11 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		144 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	2.9	0.50	mg/kg	100	1021603	02/16/11	02/17/11	EPA 8260B	
Benzene	2.1	0.50	"	"	"	"	"	"	
Toluene	36	0.50	"	"	"	"	"	"	
Ethylbenzene	11	0.50	"	"	"	"	"	"	
m,p-Xylene	49	1.0	"	"	"	"	"	"	
o-Xylene	24	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2000	50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		70.4 %	67.4-143		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		136 %	77.3-114		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		123 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS03@15-20'
R102089-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1021604	02/16/11	02/16/11	8015 DRO	

Date Sampled: **02/16/11 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		121 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	1021603	02/16/11	02/16/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.5 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		107 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS04@23'
R102089-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1021604	02/16/11	02/16/11	8015 DRO	

Date Sampled: **02/16/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		114 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.0062	0.0050	mg/kg	1	1021603	02/16/11	02/16/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
<i>o</i> -Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.82	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.0 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		106 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS05@23'
R102089-05 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1021604	02/16/11	02/17/11	8015 DRO	

Date Sampled: **02/16/11 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		115 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	1021603	02/16/11	02/16/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		82.6 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		104 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	78.4-125		"	"	"	"	

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

SS06@20'
R102089-06 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **02/16/11 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1021604	02/16/11	02/17/11	8015 DRO	

Date Sampled: **02/16/11 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		111 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/16/11 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	1021603	02/16/11	02/16/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
<i>o</i> -Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/16/11 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane- <i>d</i> 4		80.2 %	67.4-143		"	"	"	"	
Surrogate: Toluene- <i>d</i> 8		103 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	78.4-125		"	"	"	"	

Summit Scientific

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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

Total Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1021604 - EPA 3550A

Blank (1021604-BLK1)

Prepared: 02/16/11 Analyzed: 02/17/11

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	14.5		"	12.5		116	88.8-124				

LCS (1021604-BS1)

Prepared: 02/16/11 Analyzed: 02/17/11

C10-C28 (DRO)	474	50	mg/kg	501		94.5	81.4-129			9.26	
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LCS Dup (1021604-BSD1)

Prepared: 02/16/11 Analyzed: 02/17/11

C10-C28 (DRO)	486	50	mg/kg	501		96.9	81.4-129	2.47		9.26	
---------------	-----	----	-------	-----	--	------	----------	------	--	------	--

Matrix Spike (1021604-MS1)

Source: R102088-01

Prepared: 02/16/11 Analyzed: 02/17/11

C10-C28 (DRO)	497	50	mg/kg	501	27.1	93.9	77.8-133			8.48	
---------------	-----	----	-------	-----	------	------	----------	--	--	------	--

Matrix Spike Dup (1021604-MSD1)

Source: R102088-01

Prepared: 02/16/11 Analyzed: 02/17/11

C10-C28 (DRO)	496	50	mg/kg	501	27.1	93.7	77.8-133	0.202		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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

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 1021603 - EPA 5030 Soil MS

Blank (1021603-BLK1)

Prepared: 02/16/11 Analyzed: 02/18/11

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0279</i>		<i>"</i>	<i>0.0400</i>		<i>69.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0440</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>78.4-125</i>			

LCS (1021603-BS1)

Prepared: 02/16/11 Analyzed: 02/18/11

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.255	0.0050	"	0.200		128	61-139		11.1	
Toluene	0.254	0.0050	"	0.200		127	64-132		10.9	
Ethylbenzene	0.186	0.0050	"	0.200		92.9	68.7-135		20	
m,p-Xylene	0.332	0.010	"	0.400		83.1	70.4-129		20	
o-Xylene	0.194	0.0050	"	0.200		96.8	66.9-126		20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0335</i>		<i>"</i>	<i>0.0400</i>		<i>83.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>78.4-125</i>			

LCS Dup (1021603-BSD1)

Prepared: 02/16/11 Analyzed: 02/18/11

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.258	0.0050	"	0.200		129	61-139	0.912	11.1	
Toluene	0.255	0.0050	"	0.200		127	64-132	0.448	10.9	
Ethylbenzene	0.177	0.0050	"	0.200		88.6	68.7-135	4.73	20	
m,p-Xylene	0.322	0.010	"	0.400		80.5	70.4-129	3.23	20	
o-Xylene	0.187	0.0050	"	0.200		93.4	66.9-126	3.57	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0331</i>		<i>"</i>	<i>0.0400</i>		<i>82.8</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0439</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0383</i>		<i>"</i>	<i>0.0400</i>		<i>95.7</i>	<i>78.4-125</i>			

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

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 1021603 - EPA 5030 Soil MS

Matrix Spike (1021603-MS1)

Source: R102088-01

Prepared: 02/16/11

Analyzed: 02/18/11

Naphthalene	ND	0.0050	mg/kg		0.00450		26.4-144		20	
Benzene	0.232	0.0050	"	0.200	0.00	116	42.9-137		17.9	
Toluene	0.229	0.0050	"	0.200	0.00	114	42.6-130		11.9	
Ethylbenzene	0.163	0.0050	"	0.200	0.00	81.4	39-133		20	
m,p-Xylene	0.288	0.010	"	0.400	0.00	72.0	34.7-134		20	
o-Xylene	0.168	0.0050	"	0.200	0.00	84.1	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0327		"	0.0400		81.7	67.4-143			
Surrogate: Toluene-d8	0.0430		"	0.0400		107	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	78.4-125			

Matrix Spike Dup (1021603-MSD1)

Source: R102088-01

Prepared: 02/16/11

Analyzed: 02/18/11

Naphthalene	ND	0.0050	mg/kg		0.00450		26.4-144		20	
Benzene	0.215	0.0050	"	0.200	0.00	107	42.9-137	7.49	17.9	
Toluene	0.213	0.0050	"	0.200	0.00	106	42.6-130	7.26	11.9	
Ethylbenzene	0.150	0.0050	"	0.200	0.00	75.2	39-133	7.91	20	
m,p-Xylene	0.269	0.010	"	0.400	0.00	67.4	34.7-134	6.60	20	
o-Xylene	0.157	0.0050	"	0.200	0.00	78.6	41.3-126	6.82	20	
Surrogate: 1,2-Dichloroethane-d4	0.0323		"	0.0400		80.8	67.4-143			
Surrogate: Toluene-d8	0.0435		"	0.0400		109	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	78.4-125			

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
02/20/11 14:20

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

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 11, 2011

Brian Dodek
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: PDC - Barrell 41-4

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/11 16:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to be 'PS', with a long horizontal flourish extending to the right.

Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS07@32'	R103024-01	Soil	03/03/11 11:05	03/03/11 16:13
SS08@37'	R103024-02	Soil	03/03/11 11:15	03/03/11 16:13

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

SS07@32'
R103024-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/11 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1030305	03/03/11	03/03/11	8015 DRO	

Date Sampled: **03/03/11 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		108 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/11 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	1030304	03/03/11	03/05/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/11 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		101 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	78.4-125		"	"	"	"	

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

SS08@37'
R103024-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/11 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1030305	03/03/11	03/03/11	8015 DRO	

Date Sampled: **03/03/11 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		107 %	88.8-124		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/11 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	1030304	03/03/11	03/05/11	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
<i>o</i> -Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **03/03/11 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	67.4-143		"	"	"	"	
Surrogate: Toluene-d8		100 %	77.3-114		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %	78.4-125		"	"	"	"	

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

Total 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 1030305 - EPA 3550A

Blank (1030305-BLK1)				Prepared: 03/03/11		Analyzed: 03/04/11				
C10-C28 (DRO)	ND	50	mg/kg							
<i>Surrogate: o-Terphenyl</i>	<i>13.1</i>		<i>"</i>	<i>12.5</i>		<i>105</i>	<i>88.8-124</i>			
LCS (1030305-BS1)				Prepared: 03/03/11		Analyzed: 03/04/11				
C10-C28 (DRO)	543	50	mg/kg	501		108	81.4-129		9.26	
LCS Dup (1030305-BSD1)				Prepared: 03/03/11		Analyzed: 03/04/11				
C10-C28 (DRO)	510	50	mg/kg	501		102	81.4-129	6.35	9.26	
Matrix Spike (1030305-MS1)				Source: R103024-01		Prepared: 03/03/11		Analyzed: 03/04/11		
C10-C28 (DRO)	486	50	mg/kg	501	30.0	91.1	77.8-133		8.48	
Matrix Spike Dup (1030305-MSD1)				Source: R103024-01		Prepared: 03/03/11		Analyzed: 03/04/11		
C10-C28 (DRO)	483	50	mg/kg	501	30.0	90.4	77.8-133	0.664	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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

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 1030304 - EPA 5030 Soil MS

Blank (1030304-BLK1)

Prepared: 03/03/11 Analyzed: 03/05/11

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0368</i>		<i>"</i>	<i>0.0400</i>		<i>92.1</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0404</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>78.4-125</i>			

LCS (1030304-BS1)

Prepared: 03/03/11 Analyzed: 03/05/11

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.124	0.0050	"	0.100		124	61-139	3.08	11.1	
Toluene	0.125	0.0050	"	0.100		125	64-132	4.81	10.9	
Ethylbenzene	0.119	0.0050	"	0.100		119	68.7-135	11.4	20	
m,p-Xylene	0.219	0.010	"	0.200		110	70.4-129	13.6	20	
o-Xylene	0.111	0.0050	"	0.100		111	66.9-126	11.3	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0434</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0421</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>78.4-125</i>			

LCS Dup (1030304-BSD1)

Prepared: 03/03/11 Analyzed: 03/05/11

Naphthalene	ND	0.0050	mg/kg				67.8-151		20	
Benzene	0.128	0.0050	"	0.100		128	61-139	3.08	11.1	
Toluene	0.132	0.0050	"	0.100		132	64-132	4.81	10.9	
Ethylbenzene	0.134	0.0050	"	0.100		134	68.7-135	11.4	20	
m,p-Xylene	0.251	0.010	"	0.200		126	70.4-129	13.6	20	
o-Xylene	0.124	0.0050	"	0.100		124	66.9-126	11.3	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0450</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>67.4-143</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>77.3-114</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0414</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>78.4-125</i>			

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

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 1030304 - EPA 5030 Soil MS

Matrix Spike (1030304-MS1)

Source: R103024-01

Prepared: 03/03/11

Analyzed: 03/05/11

Naphthalene	ND	0.0050	mg/kg	0.00	0.00	117	26.4-144		20	
Benzene	0.117	0.0050	"	0.100	0.00	117	42.9-137		17.9	
Toluene	0.118	0.0050	"	0.100	0.00	118	42.6-130		11.9	
Ethylbenzene	0.109	0.0050	"	0.100	0.00303	106	39-133		20	
m,p-Xylene	0.194	0.010	"	0.200	0.00	97.2	34.7-134		20	
o-Xylene	0.100	0.0050	"	0.100	0.00	100	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116	67.4-143			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	78.4-125			

Matrix Spike Dup (1030304-MSD1)

Source: R103024-01

Prepared: 03/03/11

Analyzed: 03/05/11

Naphthalene	ND	0.0050	mg/kg	0.00	0.00	121	26.4-144	3.76	20	
Benzene	0.121	0.0050	"	0.100	0.00	121	42.9-137	5.41	17.9	
Toluene	0.124	0.0050	"	0.100	0.00	124	42.6-130	6.97	20	
Ethylbenzene	0.117	0.0050	"	0.100	0.00303	114	39-133	8.31	20	
m,p-Xylene	0.211	0.010	"	0.200	0.00	106	34.7-134	7.02	20	
o-Xylene	0.108	0.0050	"	0.100	0.00	108	41.3-126		20	
Surrogate: 1,2-Dichloroethane-d4	0.0472		"	0.0400		118	67.4-143			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	77.3-114			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	78.4-125			

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.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: PDC - Barrell 41-4

Project Number: 0188-11024.05
Project Manager: Brian Dodek

Reported:
03/11/11 10:00

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

July 12, 2012

Brandon Bruns
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Barrell 41-4

Enclosed are the results of analyses for samples received by Summit Scientific on 07/10/12 15:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director



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

Project: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/12/12 11:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
IP01	R207106-01	Soil	07/10/12 12:40	07/10/12 15:50
IP02	R207106-02	Soil	07/10/12 13:10	07/10/12 15:50
IP03	R207106-03	Soil	07/10/12 13:30	07/10/12 15:50
IP04	R207106-04	Soil	07/10/12 13:50	07/10/12 15:50

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: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/12/12 11:59

IP01
R207106-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: 07/10/12 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2071012	07/10/12	07/11/12	8015 DRO	

Date Sampled: 07/10/12 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/10/12 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2071011	07/10/12	07/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 07/10/12 12:40

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	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: Barrell 41-4

Project Number: [none]
 Project Manager: Brandon Bruns

Reported:
 07/12/12 11:59

IP02
R207106-02 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2071012	07/10/12	07/11/12	8015 DRO	

Date Sampled: **07/10/12 13:10**

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: **07/10/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2071011	07/10/12	07/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/10/12 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		97.9 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	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: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/12/12 11:59

IP03
R207106-03 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2071012	07/10/12	07/11/12	8015 DRO	

Date Sampled: **07/10/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2071011	07/10/12	07/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/10/12 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.3 %	30-150		"	"	"	"	

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

Project: Barrell 41-4
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/12/12 11:59

IP04
R207106-04 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2071012	07/10/12	07/11/12	8015 DRO	

Date Sampled: **07/10/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		96.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.0050	mg/kg	1	2071011	07/10/12	07/11/12	EPA 8260B	
Benzene	ND	0.0050	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
m,p-Xylene	ND	0.010	"	"	"	"	"	"	
o-Xylene	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/10/12 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	30-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	30-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Barrell 41-4

Project Number: [none]
 Project Manager: Brandon Brunns

Reported:
 07/12/12 11:59

Total Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2071012 - EPA 3550A

Blank (2071012-BLK1)			Prepared: 07/10/12 Analyzed: 07/11/12								
C10-C28 (DRO)	ND	50	mg/kg								
LCS (2071012-BS1)			Prepared: 07/10/12 Analyzed: 07/11/12								
C10-C28 (DRO)	556	50	mg/kg	501	111	79.3-126					
LCS Dup (2071012-BSD1)			Prepared: 07/10/12 Analyzed: 07/11/12								
C10-C28 (DRO)	533	50	mg/kg	501	106	79.3-126	4.17	11			
Matrix Spike (2071012-MS1)			Source: R207108-01			Prepared: 07/10/12 Analyzed: 07/11/12					
C10-C28 (DRO)	600	50	mg/kg	501	ND	120	45.1-150				
Matrix Spike Dup (2071012-MSD1)			Source: R207108-01			Prepared: 07/10/12 Analyzed: 07/11/12					
C10-C28 (DRO)	577	50	mg/kg	501	ND	115	45.1-150	3.78	25		

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: Barrell 41-4
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
07/12/12 11:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2071011 - EPA 5030 Soil MS

Blank (2071011-BLK1)

Prepared & Analyzed: 07/10/12

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
m,p-Xylene	ND	0.010	"							
o-Xylene	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0425</i>		<i>"</i>	<i>0.0397</i>		<i>107</i>	<i>30-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0363</i>		<i>"</i>	<i>0.0400</i>		<i>90.8</i>	<i>30-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>30-150</i>			

LCS (2071011-BS1)

Prepared: 07/10/12 Analyzed: 07/11/12

Naphthalene	ND	0.0050	mg/kg				85.7-124			
Benzene	0.100	0.0050	"	0.100		100	58.1-115			
Toluene	0.0999	0.0050	"	0.100		99.9	56.7-123			
Ethylbenzene	0.108	0.0050	"	0.100		108	61.4-138			
m,p-Xylene	0.210	0.010	"	0.200		105	63.6-128			
o-Xylene	0.107	0.0050	"	0.100		107	62.6-134			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0403</i>		<i>"</i>	<i>0.0397</i>		<i>101</i>	<i>30-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.1</i>	<i>30-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>30-150</i>			

LCS Dup (2071011-BSD1)

Prepared: 07/10/12 Analyzed: 07/11/12

Naphthalene	ND	0.0050	mg/kg				85.7-124			12.6
Benzene	0.101	0.0050	"	0.100		101	58.1-115	0.477		20
Toluene	0.102	0.0050	"	0.100		102	56.7-123	1.85		20
Ethylbenzene	0.107	0.0050	"	0.100		107	61.4-138	0.893		12.2
m,p-Xylene	0.210	0.010	"	0.200		105	63.6-128	0.143		13.2
o-Xylene	0.107	0.0050	"	0.100		107	62.6-134	0.196		12.2
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0414</i>		<i>"</i>	<i>0.0397</i>		<i>104</i>	<i>30-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.5</i>	<i>30-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>30-150</i>			

Summit Scientific

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

Project: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/12/12 11:59

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 2071011 - EPA 5030 Soil MS

Matrix Spike (2071011-MS1)

Source: R207108-01 Prepared: 07/10/12 Analyzed: 07/11/12

Naphthalene	ND	0.0050	mg/kg	0.00	0.00		34-148			
Benzene	0.0824	0.0050	"	0.100	0.00	82.4	47.2-120			
Toluene	0.0818	0.0050	"	0.100	0.00	81.8	47.7-125			
Ethylbenzene	0.0873	0.0050	"	0.100	0.00	87.3	34.5-150			
m,p-Xylene	0.169	0.010	"	0.200	0.00	84.4	30-150			
o-Xylene	0.0869	0.0050	"	0.100	0.00	86.9	30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0397		114	30-150			
Surrogate: Toluene-d8	0.0367		"	0.0400		91.8	30-150			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	30-150			

Matrix Spike Dup (2071011-MSD1)

Source: R207108-01 Prepared: 07/10/12 Analyzed: 07/11/12

Naphthalene	ND	0.0050	mg/kg	0.00	0.00		34-148			23.9
Benzene	0.0798	0.0050	"	0.100	0.00	79.8	47.2-120	3.22		15.1
Toluene	0.0781	0.0050	"	0.100	0.00	78.1	47.7-125	4.54		16.8
Ethylbenzene	0.0809	0.0050	"	0.100	0.00	80.9	34.5-150	7.63		10.1
m,p-Xylene	0.154	0.010	"	0.200	0.00	77.0	30-150	9.18		17.2
o-Xylene	0.0798	0.0050	"	0.100	0.00	79.8	30-150	8.50		15.2
Surrogate: 1,2-Dichloroethane-d4	0.0471		"	0.0397		119	30-150			
Surrogate: Toluene-d8	0.0374		"	0.0400		93.5	30-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	30-150			

Summit Scientific

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

Project: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/12/12 11:59

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

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

January 11, 2013

Brandon Bruns
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Barrell 41-4

Enclosed are the results of analyses for samples received by Summit Scientific on 01/09/13 11:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV For Ben Shrewsbury
President / Laboratory Manager

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

Project: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/13 08:34

SS02A
R301045-01 (Soil)

Summit Scientific

Total Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/13 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3000	50	mg/kg	1	3010911	01/09/13	01/09/13	8015 DRO	

Date Sampled: **01/08/13 12:05**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/13 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	0.24	0.0050	mg/kg	1	3010910	01/09/13	01/10/13	EPA 8260B	
Benzene	0.034	0.0050	"	"	"	"	"	"	
Toluene	14	0.50	"	100	"	"	"	"	
Ethylbenzene	11	0.50	"	"	"	"	"	"	
Xylenes (total)	83	1.0	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2000	50	"	"	"	"	"	"	

Date Sampled: **01/08/13 12:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Barrell 41-4
 Project Number: [none]
 Project Manager: Brandon Brunns

Reported:
 01/11/13 08:34

Total 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 3010911 - EPA 3550A

Blank (3010911-BLK1)			Prepared & Analyzed: 01/09/13							
C10-C28 (DRO)	ND	50	mg/kg							
LCS (3010911-BS1)			Prepared & Analyzed: 01/09/13							
C10-C28 (DRO)	423	50	mg/kg	501		84.4	73-134			
LCS Dup (3010911-BSD1)			Prepared & Analyzed: 01/09/13							
C10-C28 (DRO)	443	50	mg/kg	501		88.4	73-134	4.63	11	
Matrix Spike (3010911-MS1)			Source: R301046-01		Prepared & Analyzed: 01/09/13					
C10-C28 (DRO)	435	50	mg/kg	487	44.4	80.2	50-148			
Matrix Spike Dup (3010911-MSD1)			Source: R301046-01		Prepared & Analyzed: 01/09/13					
C10-C28 (DRO)	446	50	mg/kg	492	44.4	81.7	50-148	2.54	13	

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

Project: Barrell 41-4
Project Number: [none]
Project Manager: Brandon Brunns

Reported:
01/11/13 08:34

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 3010910 - EPA 5030 Soil MS

Blank (3010910-BLK1)

Prepared & Analyzed: 01/09/13

Naphthalene	ND	0.0050	mg/kg							
Benzene	ND	0.0050	"							
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>0.0391</i>		<i>"</i>	<i>0.0397</i>		<i>98.4</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>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>21-167</i>			

LCS (3010910-BS1)

Prepared & Analyzed: 01/09/13

Naphthalene	ND	0.0050	mg/kg				66-138			
Benzene	0.102	0.0050	"	0.100		102	58-130			
Toluene	0.110	0.0050	"	0.100		110	61-134			
Ethylbenzene	0.118	0.0050	"	0.100		118	74-139			
m,p-Xylene	0.234	0.010	"	0.200		117	73-137			
o-Xylene	0.115	0.0050	"	0.100		115	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0397</i>		<i>99.2</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>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

LCS Dup (3010910-BSD1)

Prepared & Analyzed: 01/09/13

Naphthalene	ND	0.0050	mg/kg				66-138		12	
Benzene	0.109	0.0050	"	0.100		109	58-130	6.63	13	
Toluene	0.117	0.0050	"	0.100		117	61-134	5.85	16	
Ethylbenzene	0.125	0.0050	"	0.100		125	74-139	6.17	12	
m,p-Xylene	0.247	0.010	"	0.200		124	73-137	5.43	14	
o-Xylene	0.122	0.0050	"	0.100		122	73-141	5.78	12	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0391</i>		<i>"</i>	<i>0.0397</i>		<i>98.5</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>21-167</i>			

Summit Scientific

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

Project: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/13 08:34

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 3010910 - EPA 5030 Soil MS

Matrix Spike (3010910-MS1)

Source: R301046-01

Prepared & Analyzed: 01/09/13

Naphthalene	0.00801	0.0050	mg/kg		0.00923		10-158			
Benzene	0.0871	0.0050	"	0.0940	0.00	92.7	30-131			
Toluene	0.0912	0.0050	"	0.0940	0.00	97.0	30-134			
Ethylbenzene	0.0936	0.0050	"	0.0940	0.00	99.6	22-153			
m,p-Xylene	0.188	0.010	"	0.188	0.00867	95.5	10-159			
o-Xylene	0.0908	0.0050	"	0.0940	0.00	96.6	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0373		107	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0376		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0365		"	0.0376		97.1	21-167			

Matrix Spike Dup (3010910-MSD1)

Source: R301046-01

Prepared & Analyzed: 01/09/13

Naphthalene	0.00800	0.0050	mg/kg		0.00923		10-158	0.0460	42
Benzene	0.0887	0.0050	"	0.0960	0.00	92.4	30-131	1.80	34
Toluene	0.0929	0.0050	"	0.0960	0.00	96.8	30-134	1.81	30
Ethylbenzene	0.0944	0.0050	"	0.0960	0.00	98.4	22-153	0.877	24
m,p-Xylene	0.191	0.010	"	0.192	0.00867	95.0	10-159	1.49	68
o-Xylene	0.0916	0.0050	"	0.0960	0.00	95.5	31-151	0.871	38
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0381		109	23-173		
Surrogate: Toluene-d8	0.0391		"	0.0384		102	20-170		
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0384		101	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: Barrell 41-4

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
01/11/13 08:34

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