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Document #: 2211249
Date: 01/29/2016



PDC Energy, Inc.
Second Quarter 2015 Groundwater Monitoring Summary

June 11, 2015

Jerke UP 8-7 Tank Battery
SENE S7 T4N R65W
Weld County, API # 05-123-13481
Spill Tracking # Not Assigned
Remediation # Not Assigned

This groundwater summary has been prepared by Tasman Geosciences for the Jerke UP 8-7 tank battery. On April 20, 2015, groundwater samples were collected from eight monitoring well locations (BH01 through BH03 and BH05 through BH09). Monitoring well BH04 was found to be filled in with sediment to above the water table, and was not sampled. Groundwater samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) by USEPA Method 8260B. Analytical results are summarized in Table 1 and the laboratory report is included as Attachment A. Sample locations and corresponding analytical results are illustrated on Figure 1. Second quarter 2015 analytical results indicate that BTEX concentrations are below COGCC Table 910-1 groundwater standards at each of the eight monitoring locations that were sampled.

Tasman initiated enhanced fluid recovery (EFR) and air sparge (AS) events at the site during the first quarter 2014. A summary of the EFR/AS operational data is provided in Table 2. EFR/AS will remain the selected remediation strategy through the third quarter 2015 to address residual dissolved phase petroleum hydrocarbon impacts on site.

The third quarter 2015 groundwater sampling event will be conducted during July 2015.

TABLE 1
JERKE UP 8-7 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
GW01	11/12/2013	230	370	160	2,200	NA
BH01	1/10/2014	270	2,300	390	5,800	7.41
BH01	4/29/2014	19	130	160	3,100	7.52
BH01	7/29/2014	4.3	<1.0	54	450	5.12
BH01	10/27/2014	1.6	<1.0	9.0	43	4.80
BH01	1/22/2015	2.2	2.4	73.0	690	6.92
BH01	4/20/2015	<1.0	<1.0	<1.0	<1.0	7.49
BH02	1/10/2014	920	4.8	54	2,300	6.98
BH02	4/29/2014	180	<1.0	67	370	7.13
BH02	7/29/2014	27	<1.0	8.0	49	5.07
BH02	10/27/2014	65	<1.0	20	140	4.42
BH02	1/22/2015	14	<1.0	8.8	65	6.20
BH02	4/20/2015	<1.0	<1.0	<1.0	13	5.44
BH03	1/10/2014	1.1	1.1	15	240	7.08
BH03	4/29/2014	<1.0	<1.0	2.0	22	7.37
BH03	7/29/2014	<1.0	<1.0	<1.0	3.9	4.59
BH03	10/27/2014	<1.0	<1.0	<1.0	<1.0	4.42
BH03	1/22/2015	<1.0	<1.0	<1.0	<1.0	6.58
BH03	4/20/2015	<1.0	<1.0	<1.0	<1.0	7.14
BH04	1/10/2014	12,000	7,600	940	14,000	4.35
BH04	4/29/2014	150	1.4	33	330	4.64
BH04	7/29/2014	110	4.0	4.8	31	2.03
BH04	10/27/2014	NS	NS	NS	NS	NM
BH04	1/22/2015	9.5	<1.0	24	320	6.63
BH04	4/20/2015	NS	NS	NS	NS	NM
BH05	1/10/2014	1,800	240	230	3,100	4.13
BH05	4/29/2014	1.8	<1.0	<1.0	<1.0	4.47
BH05	7/29/2014	<1.0	<1.0	<1.0	<1.0	1.65
BH05	10/27/2014	<1.0	<1.0	<1.0	<1.0	1.52
BH05	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.80
BH05	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.41
BH06	1/10/2014	<1.0	<1.0	<1.0	<1.0	4.63
BH06	4/29/2014	<1.0	<1.0	<1.0	<1.0	4.66
BH06	7/29/2014	1.3	<1.0	<1.0	<1.0	2.07
BH06	10/27/2014	1.3	<1.0	<1.0	<1.0	1.95
BH06	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.83
BH06	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.46

TABLE 1
JERKE UP 8-7 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)	Depth to Water (feet)
BH07	4/29/2014	<1.0	<1.0	<1.0	<1.0	5.51
BH07	7/29/2014	<1.0	<1.0	<1.0	<1.0	2.9
BH07	10/27/2014	<1.0	<1.0	<1.0	<1.0	2.73
BH07	1/22/2015	<1.0	<1.0	<1.0	<1.0	5.51
BH07	4/20/2015	<1.0	<1.0	<1.0	<1.0	5.44
BH08	4/29/2014	<1.0	<1.0	<1.0	<1.0	7.38
BH08	7/29/2014	<1.0	<1.0	<1.0	<1.0	3.78
BH08	10/27/2014	<1.0	<1.0	<1.0	<1.0	3.04
BH08	1/22/2015	<1.0	<1.0	<1.0	<1.0	5.51
BH08	4/20/2015	<1.0	<1.0	<1.0	<1.0	6.31
BH09	4/29/2014	<1.0	<1.0	<1.0	<1.0	4.59
BH09	7/29/2014	<1.0	<1.0	<1.0	<1.0	2.00
BH09	10/27/2014	<1.0	<1.0	<1.0	<1.0	1.85
BH09	1/22/2015	<1.0	<1.0	<1.0	<1.0	3.76
BH09	4/20/2015	<1.0	<1.0	<1.0	<1.0	4.53
COGCC standards for Groundwater (ug/L) ⁽¹⁾		5	560	700	1,400	

Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in **Bold red** values indicate an exceedance of the COGCC groundwater standards for the site.

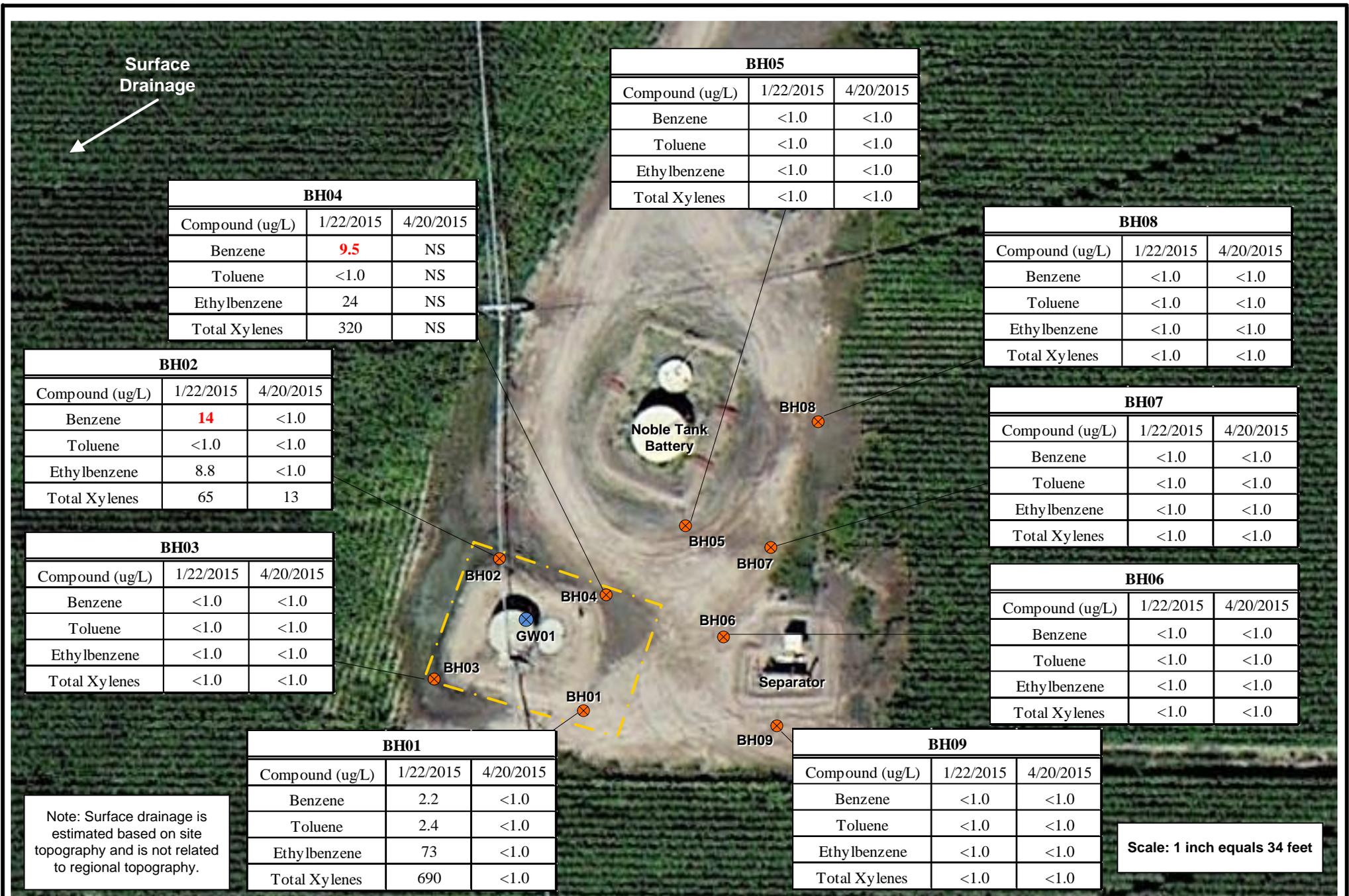
ug/L= Micrograms per liter

NM - Not Measured

NS - Not Sampled, well damaged

TABLE 2
JERKE UP 8-7 TANK BATTERY
AIR SPARGE / EFR OPERATIONAL SUMMARY TABLE

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)	Average Air Flow Rate (cfm)
First Quarter 2014						
1/30/2014	BH01, BH02,	6	90	BH01, BH02,	10	
2/25/2014	BH04, BH05	5	0	BH04, BH05	10	8.33
Quarterly Totals		11	90		-	
Second Quarter 2014						
4/7/2014	BH01, BH02, BH03, BH04, BH05	6	120	BH01, BH02, BH03, BH04, BH05	10	37
4/21/2014		6.5	120		20	47
5/9/2014		8	90		20	35
5/23/2014		6	20		20	24
6/9/2014		6	20		20	20
Quarterly Totals		32.5	370		-	
Third Quarter 2014						
7/2/2014	BH01, BH02,	7	150	BH01, BH02,	25	42
7/18/2014	BH03, BH04,	6	0	BH03, BH04,	15	13.5
9/25/2014	BH05	6	100	BH05	20	20
Quarterly Totals		19	250		-	
Fourth Quarter 2014						
10/17/2014	BH01, BH02, BH03, BH04, BH05	6	225	BH01, BH02, BH03, BH04, BH05	15	17.5
11/3/2014		6	50		20	30
11/18/2014		6	80		0	30
12/7/2014		6	100		20	31.2
12/20/2014		6	75		20	26
Quarterly Totals		30	530		-	
First Quarter 2015						
1/9/2015	BH01, BH02, BH03, BH04, BH05	6	0	BH01, BH02, BH03, BH04, BH05	20	25
1/26/2015		6	0		20	25
2/8/2015		6	30		25	35
3/6/2015		6	36		20	27
3/17/2015		6	100		20	35
Quarterly Totals		30	166		-	
Second Quarter 2015						
4/6/2015	BH01, BH02, BH03, BH04, BH05	6	10	BH01, BH02, BH03, BH04, BH05	20	28.6
4/13/2015		6	30		20	20.8
4/30/2015		6	0		20	19
5/14/2015		6	80		20	21.2
5/28/2015		6	15		20	27
Quarterly Totals		30	135		-	



DRAWN BY: ATF

DATE: 5/11/15

Facility Diagram
 PDC Energy – DJ Basin
 Jerke UP 8-7 Tank Battery
 SENE S7 T4N R65W
 Weld County, CO

TASMAN GEOSCIENCES

6899 Pecos Street
 Unit C
 Denver, CO 80221

LEGEND

- Approximate Area of Excavation
- Monitoring Well Location
- Excavation Groundwater Sample Location

FIGURE 1
 GROUNDWATER ANALYTICAL RESULTS

ATTACHMENT A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 23, 2015

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Jerke Up 8-7

Enclosed are the results of analyses for samples received by Summit Scientific on 04/20/15 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: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/23/15 20:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1504190-01	Water	04/20/15 11:28	04/20/15 17:20
BH02	1504190-02	Water	04/20/15 11:41	04/20/15 17:20
BH03	1504190-03	Water	04/20/15 11:32	04/20/15 17:20
BH05	1504190-04	Water	04/20/15 11:43	04/20/15 17:20
BH06	1504190-05	Water	04/20/15 11:51	04/20/15 17:20
BH07	1504190-06	Water	04/20/15 11:59	04/20/15 17:20
BH08	1504190-07	Water	04/20/15 11:50	04/20/15 17:20
BH09	1504190-08	Water	04/20/15 11:59	04/20/15 17:20

Summit Scientific

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

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/23/15 20:28

Summit Scientific

1504190

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

Page 1 of 1

Client: Tasman Bay PDC Energy
Address: 6899 Pecos St Unit C
City/State/Zip: Denver
Phone: 303 487 1228 Fax:
Sampler Name: Matt P.

Project Manager: Brandon Bruns
E-Mail: brandon.bruns@pdce.com
Project Name: Jerke Up 8-7
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)				
BH01	4/20/15	1128	3	X				X							
BH02		1141													
BH03		1132													
BH05		1143													
BH06		1151													
BH07		1159													
BH08		1150													
BH09		1159													

STEX 8260 B

Relinquished by: [Signature] Date/Time: 4/20/15 Received by: [Signature] Date/Time: 4/20/15 Turn Around Time (Check)
 Same Day 72 Hours
 24 Hours Standard
 48 Hours

Relinquished by: ao Date/Time: 1720 Received by: [Signature] Date/Time: 4-20 1720 Sample Integrity: 13.7 Notes: on ice
 Temperature Upon Receipt: 13.7
 Intact: Yes No



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

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/23/15 20:28

Sample Receipt Checklist

S2 Work Order: 1504190

Client: PDC Client Project ID: Serke Ut 8-7

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)	<u>13.7</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⁾ ?				
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			
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⁾ ?				
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, etc.	<input checked="" type="checkbox"/>			<u>HCl</u>
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.

Ben Shrawsbury
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

4/23/15 1648
Date/Time

[Signature]



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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH01
1504190-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>118 %</i>	<i>37-154</i>		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		<i>92.6 %</i>	<i>45-149</i>		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>121 %</i>	<i>45-146</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.



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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH02
1504190-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	13	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		91.9 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		123 %	45-146		"	"	"	"	

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH03
1504190-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>121 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>95.6 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>121 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH05
1504190-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>124 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>95.0 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>121 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

Summit Scientific

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH06
1504190-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		76.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH07
1504190-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.7 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.4 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH08
1504190-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		148 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.0 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		130 %	45-146		"	"	"	"	

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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

BH09
1504190-08 (Water)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/20/15 11:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1504229	04/23/15	04/23/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **04/20/15 11:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>136 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>99.5 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>130 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/23/15 20:28

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch 1504229 - EPA 5030 Water MS

Blank (1504229-BLK1)

Prepared & Analyzed: 04/23/15

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	12.2		"	13.2		92.1	37-154				
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149				
Surrogate: 4-Bromofluorobenzene	15.0		"	13.3		112	45-146				

LCS (1504229-BS1)

Prepared & Analyzed: 04/23/15

Benzene	30.1	1.0	ug/l	33.3		90.2	51-132				
Toluene	29.4	1.0	"	33.3		88.1	51-138				
Ethylbenzene	31.0	1.0	"	33.1		93.7	58-146				
m,p-Xylene	63.9	2.0	"	66.5		96.0	57-144				
o-Xylene	30.9	1.0	"	32.8		94.3	53-146				
Surrogate: 1,2-Dichloroethane-d4	13.0		"	13.2		98.9	37-154				
Surrogate: Toluene-d8	13.5		"	13.3		101	45-149				
Surrogate: 4-Bromofluorobenzene	14.3		"	13.3		107	45-146				

Matrix Spike (1504229-MS1)

Source: 1504188-01

Prepared & Analyzed: 04/23/15

Benzene	30.6	1.0	ug/l	33.3	ND	91.7	34-141				
Toluene	28.9	1.0	"	33.3	ND	86.7	27-151				
Ethylbenzene	30.8	1.0	"	33.1	ND	93.2	29-160				
m,p-Xylene	64.4	2.0	"	66.5	ND	96.8	20-166				
o-Xylene	30.8	1.0	"	32.8	ND	93.8	33-159				
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.2		97.5	37-154				
Surrogate: Toluene-d8	13.1		"	13.3		98.3	45-149				
Surrogate: 4-Bromofluorobenzene	14.1		"	13.3		106	45-146				

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PDC Energy
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 Denver CO, 80203

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 04/23/15 20:28

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 1504229 - EPA 5030 Water MS

Matrix Spike Dup (1504229-MSD1)	Source: 1504188-01			Prepared & Analyzed: 04/23/15						
Benzene	30.8	1.0	ug/l	33.3	ND	92.3	34-141	0.554	32	
Toluene	28.6	1.0	"	33.3	ND	85.7	27-151	1.15	25	
Ethylbenzene	31.8	1.0	"	33.1	ND	96.3	29-160	3.26	50	
m,p-Xylene	64.8	2.0	"	66.5	ND	97.3	20-166	0.542	36	
o-Xylene	31.3	1.0	"	32.8	ND	95.4	33-159	1.71	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.6</i>		<i>"</i>	<i>13.2</i>		<i>103</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.9</i>		<i>"</i>	<i>13.3</i>		<i>97.1</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.4</i>		<i>"</i>	<i>13.3</i>		<i>108</i>	<i>45-146</i>			

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

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
04/23/15 20:28

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

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