

REM: 9300
Document #: 2211250
Date: 01/29/2016



PDC Energy, Inc.
Third Quarter 2015 Groundwater Monitoring Summary

October 26, 2015

Jerke UP 8-7 Tank Battery
SENE S7 T4N R65W
Weld County, API # 05-123-13481
Spill Tracking # 200437785
Remediation # 9300

This groundwater summary has been prepared by Tasman Geosciences, Inc. for the Jerke UP 8-7 tank battery. On July 27, 2015, groundwater samples were collected from nine monitoring well locations (BH01 through BH09). 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. Third quarter 2015 analytical results indicate that benzene concentrations are in exceedance of COGCC Table 910-1 standards at monitoring well BH04. Constituent concentrations are below regulatory standards at the remaining eight monitoring locations.

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 fourth quarter 2015 to address remaining dissolved phase petroleum hydrocarbon impacts on site.

The fourth quarter 2015 groundwater sampling event will be conducted during October 2015.

**TABLE 1
JERKE UP 8-7 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)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
GW01	11/12/2013	230	370	160	2,200	NM
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
BH01	7/27/2015	<1.0	<1.0	<1.0	<1.0	4.02
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
BH02	7/27/2015	1.5	<1.0	1.0	8.3	4.42
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
BH03	7/27/2015	<1.0	<1.0	<1.0	<1.0	4.00
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
BH04	7/27/2015	80	<1.0	11	270	4.04
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
BH05	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.30
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
BH06	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.35

TABLE 1
JERKE UP 8-7 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)
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
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
BH07	7/27/2015	<1.0	<1.0	<1.0	<1.0	2.36
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
BH08	7/27/2015	<1.0	<1.0	<1.0	<1.0	3.24
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
BH09	7/27/2015	<1.0	<1.0	<1.0	<1.0	1.43

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

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

NS = Not Sampled. Well damaged or destroyed.

NM = Not Measured

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

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

Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)
First Quarter 2014					
1/30/2014	BH01, BH02, BH04,	6	90		10
2/25/2014	BH05	5	0		10
Quarterly Totals		11	90		-
Second Quarter 2014					
4/7/2014	BH01, BH02, BH03, BH04, BH05	6	120	BH01, BH02, BH03, BH04, BH05	10
4/21/2014		6.5	120		20
5/9/2014		8	90		20
5/23/2014		6	20		20
6/9/2014		6	20		20
Quarterly Totals		32.5	370		-
Third Quarter 2014					
7/2/2014	BH01, BH02, BH03, BH04, BH05	7	150	BH01, BH02, BH03, BH04, BH05	25
7/18/2014		6	0		15
9/25/2014		6	100		20
Quarterly Totals		19	250		-
Fourth Quarter 2014					
10/17/2014	BH01, BH02, BH03, BH04, BH05	6	225	BH01, BH02, BH03, BH04, BH05	15
11/3/2014		6	50		20
11/18/2014		6	80		0
12/7/2014		6	100		20
12/20/2014		6	75		20
Quarterly Totals		30	530		-
First Quarter 2015					
1/9/2015	BH01, BH02, BH03, BH04, BH05	6	0	BH01, BH02, BH03, BH04, BH05	20
1/26/2015		6	0		20
2/8/2015		6	30		25
3/6/2015		6	36		20
3/17/2015		6	100		20
5/14/2015		6	80		20
Quarterly Totals		36	246		-

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

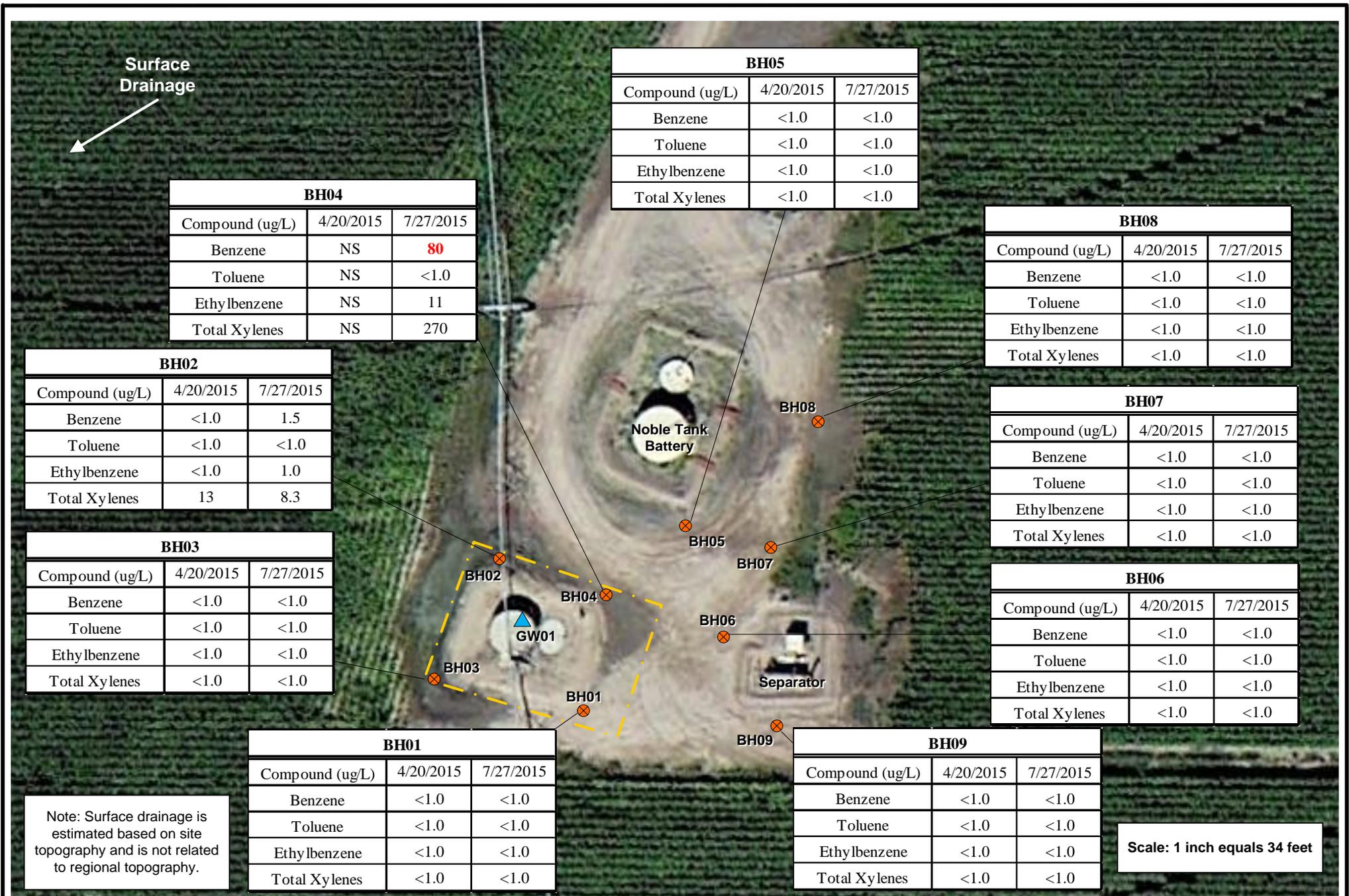
Date	EFR Wells	Total EFR/AS Duration (hours)	Approximate Gallons Extracted	AS Wells	Air Injection Pressure (psi)
Second Quarter 2015					
4/6/2015	BH01, BH02, BH03, BH04, BH05	6	10	BH01, BH02, BH03, BH04, BH05	20
4/13/2015		6	30		20
4/30/2015		6	0		20
5/28/2015		6	15		20
6/11/2015	BH02, BH03, BH04, BH05	6	40	BH02, BH03, BH04, BH05	20
6/22/2015	BH01, BH02, BH03, BH04, BH05	6	35	BH02, BH03, BH04, BH05	20
Quarterly Totals		36	130		-
Third Quarter 2015					
7/9/2015	BH01, BH02, BH03, BH04, BH05	6	184	BH01, BH02, BH03, BH04, BH05	20
7/23/2015		6	45		20
8/6/2015	BH02, BH03, BH04, BH05	6	30		20
8/20/2015	BH01, BH02, BH03, BH04, BH05	6	80		20
Quarterly Totals		24	339		-

Notes:

EFR = Enhanced fluid recovery

AS = Air sparge

psi = Pounds per square inch



DRAWN BY: ESS

DATE: 9/10/2015

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

August 03, 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 07/27/15 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: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/03/15 08:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	1507272-01	Water	07/27/15 13:10	07/27/15 17:00
BH02	1507272-02	Water	07/27/15 13:20	07/27/15 17:00
BH03	1507272-03	Water	07/27/15 13:30	07/27/15 17:00
BH04	1507272-04	Water	07/27/15 13:40	07/27/15 17:00
BH05	1507272-05	Water	07/27/15 13:50	07/27/15 17:00
BH06	1507272-06	Water	07/27/15 14:00	07/27/15 17:00
BH07	1507272-07	Water	07/27/15 14:10	07/27/15 17:00
BH08	1507272-08	Water	07/27/15 14:20	07/27/15 17:00
BH09	1507272-09	Water	07/27/15 14:30	07/27/15 17:00

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:
08/03/15 08:49

Summit Scientific

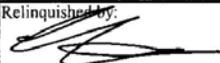
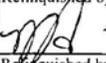
1507272

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: Elliot Pillow-Herzog

Project Manager: Mark Longhurst
E-Mail: Mark.Longhurst@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	07/27/15	1310	1	X				X							
BH02		1320		X											
BH03		1330		X											
BH04		1340		X											
BH05		1350		X											
BH06		1400				X									
BH07		1410		X											
BH08		1420		X											
BH09		1430		X											
Relinquished by: 				Date/Time: 07/27/15 16:00	Received by: 				Date/Time: 7/27/15 17:00	Turn Around Time (Check)				Notes: on ice	
Relinquished by: 				Date/Time: 7/27/15 18:00	Received by: 				Date/Time: 7/27 18:00	Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>					
Relinquished by: _____				Date/Time: _____	Received in Lab by: _____				Date/Time: _____	24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>					
										48 Hours <input type="checkbox"/>					
										Sample Integrity:					
										Temperature Upon Receipt: 12.9°C					
										Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					

www.s2scientific.com





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

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/03/15 08:49

BH01
1507272-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/28/15	07/28/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	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:
 08/03/15 08:49

BH02
1507272-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	1.5	1.0	ug/l	1	1507296	07/28/15	07/28/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	1.0	1.0	"	"	"	"	"	"	
Xylenes (total)	8.3	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		111 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.2 %	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:
 08/03/15 08:49

BH03
1507272-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/28/15	07/28/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>110 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>99.8 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>98.3 %</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:
 08/03/15 08:49

BH04
1507272-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	80	1.0	ug/l	1	1507296	07/28/15	07/28/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	11	1.0	"	"	"	"	"	"	
Xylenes (total)	270	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	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:
 08/03/15 08:49

BH05
1507272-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/29/15	07/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		110 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.3 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.2 %	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:
 08/03/15 08:49

BH06
1507272-06 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/29/15	07/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		112 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.5 %	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:
 08/03/15 08:49

BH07
1507272-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/29/15	07/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>111 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>98.2 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>95.3 %</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:
 08/03/15 08:49

BH08
1507272-08 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/29/15	07/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		109 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.6 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.3 %	45-146		"	"	"	"	

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 Denver CO, 80203

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Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/03/15 08:49

BH09
1507272-09 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/15 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1507296	07/29/15	07/29/15	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	1.0	"	"	"	"	"	"	

Date Sampled: **07/27/15 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>111 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>99.2 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>98.6 %</i>	<i>45-146</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	

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Denver CO, 80203

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/03/15 08:49

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch 1507296 - EPA 5030 Water MS

Blank (1507296-BLK1)

Prepared & Analyzed: 07/28/15

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.1		"	13.2		107	37-154			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.8	45-146			

LCS (1507296-BS1)

Prepared & Analyzed: 07/28/15

Benzene	32.9	1.0	ug/l	33.3		98.7	51-132			
Toluene	33.5	1.0	"	33.3		100	51-138			
Ethylbenzene	34.1	1.0	"	33.1		103	58-146			
m,p-Xylene	68.8	2.0	"	66.5		103	57-144			
o-Xylene	35.1	1.0	"	32.8		107	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.4		"	13.2		109	37-154			
Surrogate: Toluene-d8	13.3		"	13.3		99.8	45-149			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	45-146			

Matrix Spike (1507296-MS1)

Source: 1507271-03

Prepared & Analyzed: 07/28/15

Benzene	33.4	1.0	ug/l	33.3	ND	100	34-141			
Toluene	33.3	1.0	"	33.3	ND	100	27-151			
Ethylbenzene	34.8	1.0	"	33.1	ND	105	29-160			
m,p-Xylene	70.3	2.0	"	66.5	ND	106	20-166			
o-Xylene	35.4	1.0	"	32.8	ND	108	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.2		110	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.2	45-149			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.6	45-146			

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 Denver CO, 80203

Project: Jerke Up 8-7

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 08/03/15 08:49

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 1507296 - EPA 5030 Water MS

Matrix Spike Dup (1507296-MSD1)	Source: 1507271-03			Prepared & Analyzed: 07/28/15						
Benzene	33.8	1.0	ug/l	33.3	ND	101	34-141	1.13	32	
Toluene	33.6	1.0	"	33.3	ND	101	27-151	0.658	25	
Ethylbenzene	34.6	1.0	"	33.1	ND	105	29-160	0.721	50	
m,p-Xylene	68.7	2.0	"	66.5	ND	103	20-166	2.27	36	
o-Xylene	35.4	1.0	"	32.8	ND	108	33-159	0.113	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.8</i>		<i>"</i>	<i>13.2</i>		<i>120</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.2</i>		<i>"</i>	<i>13.3</i>		<i>98.9</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.8</i>		<i>"</i>	<i>13.3</i>		<i>96.0</i>	<i>45-146</i>			

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Denver CO, 80203

Project: Jerke Up 8-7

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
08/03/15 08:49

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