

**PDC Energy, Inc.**  
First Quarter 2017 Groundwater Monitoring Summary

April 18, 2017

Dechant 1-31A Tank Battery  
SWSW Section 31 T3N R64W  
Weld County, API # 05-123-11685  
Facility ID # 444062  
Remediation # 9365

This groundwater monitoring summary has been prepared by Tasman Geosciences, Inc. for the Dechant 1-31A tank battery. On March 30, 2017, groundwater monitoring was conducted at fourteen monitoring well locations (MW02-R, MW03-R, MW05-R, MW07, MW10-R, MW13, MW17-R, MW18 - MW24). Fourteen groundwater samples were submitted to Summit Scientific Laboratories for 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. Analytical results from the first quarter 2017 sampling event indicated that BTEX concentrations were above the COGCC regulatory standards in monitoring wells MW05-R, MW21, and MW23. BTEX concentrations were below COGCC regulatory standards at the remaining eleven well locations.

Enhanced fluid recovery (EFR) and air sparge (AS) events were initiated at the site during the third quarter 2015. Mobile EFR/AS events were discontinued following the fourth quarter 2015. A summary of EFR/AS operational data is provided in Table 2.

During the first quarter 2016, a soil vapor extraction (SVE) and AS system was installed on site in order to address remaining dissolved phase BTEX concentrations. The SVE/AS remediation well network is evaluated quarterly based on analytical data and modified to address monitoring well locations with persisting constituent concentrations in exceedance of regulatory standards. The SVE/AS remediation well network is illustrated on Figure 2. Volatile organic compound (VOC) samples are collected from the system effluent on a quarterly basis, in order to monitor performance and calculate the total contaminant mass removed. During the first quarter 2017, a total of 4.93 pounds of hydrocarbon mass were removed. To date, the SVE/AS system has removed approximately 153.35 pounds of hydrocarbon mass. Operation of the SVE/AS remediation system will continue as the selected remediation strategy through the second quarter 2017.

Second quarter 2017 groundwater sampling will be conducted during June 2017.

**TABLE 1**  
**DECHANT 1-31A 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 <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW01	12/16/2009	<1.0	1.5	47	540	N/A
MW01	6/22/2010	Destroyed				
MW02	12/16/2009	<b>62</b>	<b>1,300</b>	610	<b>5,600</b>	N/A
MW02	6/22/2010	Destroyed				
MW02-R	1/25/2016	<1.0	<1.0	<1.0	<1.0	10.80
MW02-R	3/31/2016	<1.0	<1.0	<1.0	<1.0	9.98
MW02-R	6/30/2016	<1.0	<1.0	<1.0	<1.0	8.72
MW02-R	9/14/2016	<1.0	<1.0	<1.0	<1.0	9.96
MW02-R	12/16/2016	<1.0	<1.0	<1.0	<1.0	10.41
MW02-R	3/30/2017	<1.0	<1.0	<1.0	<2.0	10.30
MW03	12/16/2009	<b>440</b>	<b>6,000</b>	<b>960</b>	<b>12,000</b>	N/A
MW03	6/22/2010	Destroyed				
MW03-R	1/25/2016	<1.0	<1.0	5.7	160	11.32
MW03-R	3/31/2016	<1.0	<1.0	<1.0	<1.0	10.12
MW03-R	6/30/2016	<1.0	<1.0	<1.0	<1.0	8.86
MW03-R	9/14/2016	<1.0	<1.0	1.1	1.3	10.13
MW03-R	12/16/2016	<1.0	<1.0	<1.0	<1.0	10.51
MW03-R	3/30/2017	<1.0	<1.0	<1.0	<2.0	10.37
MW04	12/16/2009	<1.0	13	240	<b>3,000</b>	N/A
MW04	6/22/2010	<1.0	<1.0	23	260	18.05
MW04	9/17/2010	<1.0	<1.0	9.5	81	17.41
MW04	12/9/2010	<1.0	<1.0	1.4	6.7	16.88
MW04	3/10/2011	Destroyed				
MW05	12/16/2009	<b>140</b>	<b>1,400</b>	<b>960</b>	<b>12,000</b>	N/A
MW05	6/22/2010	Destroyed				
MW05-R	1/25/2016	<1.0	<1.0	300	<b>14,000</b>	10.77
MW05-R	3/31/2016	<1.0	<1.0	560	530	9.86
MW05-R	6/30/2016	<1.0	<1.0	250	<b>12,000</b>	8.60
MW05-R	9/14/2016	<1.0	<1.0	530	<b>12,000</b>	9.85
MW05-R	12/16/2016	<b>380</b>	<1.0	420	<b>8,500</b>	10.26
MW05-R	3/30/2017	<1.0	<1.0	550	<b>7,700</b>	10.13

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW07	12/16/2009	<1.0	<1.0	<1.0	<1.0	N/A
MW07	6/22/2010	<1.0	<1.0	<1.0	<1.0	21.45
MW07	9/17/2010	<1.0	<1.0	<1.0	<1.0	20.83
MW07	12/9/2010	<1.0	<1.0	<1.0	<1.0	20.32
MW07	3/10/2011	<1.0	<1.0	<1.0	<1.0	20.10
MW07	6/8/2011	<1.0	<1.0	<1.0	<1.0	20.00
MW07	9/26/2011	<1.0	<1.0	<1.0	<1.0	19.71
MW07	12/29/2011	NS	NS	NS	NS	N/A
MW07	3/7/2012	<1.0	<1.0	<1.0	<1.0	19.39
MW07	6/26/2012	<1.0	<1.0	<1.0	<1.0	18.55
MW07	9/20/2012	<1.0	<1.0	<1.0	<1.0	18.89
MW07	12/12/2012	<1.0	<1.0	<1.0	<1.0	18.56
MW07	6/21/2013	<1.0	<1.0	<1.0	<1.0	18.50
MW07	9/23/2013	<1.0	<1.0	<1.0	<1.0	18.71
MW07	12/18/2013	<1.0	<1.0	<1.0	<1.0	18.48
MW07	3/31/2014	<1.0	<1.0	<1.0	<1.0	18.28
MW07	6/17/2014	<1.0	<1.0	<1.0	<1.0	17.20
MW07	9/17/2014	<1.0	<1.0	<1.0	<1.0	16.62
MW07	12/2/2014	<1.0	<1.0	<1.0	<1.0	16.02
MW07	3/16/2015	<1.0	<1.0	<1.0	<1.0	15.23
MW07	6/25/2015	<1.0	<1.0	<1.0	<1.0	13.84
MW07	9/25/2015	<1.0	<1.0	<1.0	<1.0	14.51
MW07	12/16/2015	<1.0	<1.0	<1.0	<1.0	14.05
MW07	3/31/2016	<1.0	<1.0	<1.0	6.1	12.87
MW07	6/30/2016	<1.0	<1.0	<1.0	<1.0	11.56
MW07	9/14/2016	<1.0	<1.0	<1.0	<1.0	12.84
MW07	12/16/2016	<1.0	<1.0	<1.0	<1.0	9.83
MW07	3/30/2017	<1.0	<1.0	<1.0	<2.0	9.70
MW08	12/16/2009	<1.0	<1.0	<1.0	<1.0	N/A
MW08	6/22/2010	Destroyed				
MW09	12/16/2009	<1.0	<1.0	<1.0	<1.0	N/A
MW09	6/22/2010	<1.0	<1.0	<1.0	<1.0	17.62
MW09	9/17/2010	<1.0	<1.0	<1.0	<1.0	17.03

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW09	12/9/2010	<1.0	<1.0	<1.0	<1.0	16.51
MW09	3/10/2011	<1.0	<1.0	<1.0	<1.0	16.32
MW09	6/8/2011	<1.0	<1.0	<1.0	<1.0	15.15
MW09	9/26/2011	<1.0	<1.0	<1.0	<1.0	15.93
MW09	12/29/2011	<1.0	<1.0	<1.0	<1.0	15.65
MW09	3/7/2012	<1.0	<1.0	<1.0	<1.0	15.59
MW09	6/26/2012	<1.0	<1.0	<1.0	<1.0	14.73
MW09	9/20/2012	NS	NS	NS	NS	N/A
MW09	12/12/2012	<1.0	<1.0	<1.0	<1.0	14.83
MW09	6/21/2013	Destroyed				
MW10	12/16/2009	<b>310</b>	<b>1,000</b>	690	<b>8,700</b>	N/A
MW10	6/22/2010	<b>8.4</b>	5.1	30	720	17.95
MW10	9/17/2010	<b>55</b>	<1.0	45	280	17.36
MW10	12/9/2010	<b>34</b>	<1.0	<b>780</b>	<b>3,700</b>	16.83
MW10	3/10/2011	<b>12</b>	<1.0	<b>870</b>	<b>2,600</b>	16.60
MW10	6/8/2011	<1.0	<1.0	28	140	16.70
MW10	9/26/2011	4.3	5.2	220	<b>3,100</b>	16.29
MW10	12/29/2011	NS	NS	NS	NS	N/A
MW10	3/7/2012	<b>27</b>	12	<b>700</b>	<b>5,300</b>	15.89
MW10	6/26/2012	Destroyed				
MW10-R	8/17/2012	<b>5.8</b>	2.3	460	<b>10,000</b>	N/A
MW10-R	9/20/2012	<b>5.4</b>	<1.0	440	7.5	17.95
MW10-R	12/12/2012	<b>5.8</b>	<1.0	350	<b>7,000</b>	17.88
MW10-R	6/21/2013	<b>5.5</b>	<1.0	330	<b>7,200</b>	17.25
MW10-R	9/23/2013	4.4	<1.0	350	<b>7,500</b>	17.23
MW10-R	12/18/2013	3.4	<1.0	73	<b>6,600</b>	15.69
MW10-R	3/31/2014	<b>8.8</b>	<1.0	570	640	15.52
MW10-R	6/17/2014	4.2	<1.0	100	<b>7,700</b>	14.41
MW10-R	9/17/2014	<1.0	<1.0	450	<b>6,200</b>	13.90
MW10-R	12/2/2014	1.7	<1.0	<b>1,000</b>	<b>13,000</b>	13.23
MW10-R	3/16/2015	<1.0	<1.0	550	<b>7,900</b>	12.46
MW10-R	6/25/2015	<1.0	<1.0	230	<b>2,700</b>	11.09
MW10-R	9/25/2015	<1.0	<1.0	59	240	11.86

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW10-R	12/16/2015	<1.0	<1.0	130	530	11.41
MW10-R	3/31/2016	<1.0	<1.0	<1.0	3.0	10.22
MW10-R	6/30/2016	<1.0	<1.0	170	<b>1,900</b>	9.11
MW10-R	9/14/2016	<1.0	<1.0	28	140	10.35
MW10-R	12/16/2016	<1.0	<1.0	9.8	78	10.64
MW10-R	3/30/2017	<1.0	<1.0	150	1,100	10.51
MW11	1/18/2010	1.0	<1.0	4.9	<1.0	N/A
MW11	6/22/2010	<1.0	<1.0	<1.0	<1.0	18.70
MW11	9/17/2010	<1.0	<1.0	<1.0	<1.0	18.16
MW11	12/9/2010	<1.0	<1.0	<1.0	<1.0	17.55
MW11	3/10/2011	Destroyed				
MW12	1/18/2010	<1.0	<1.0	<1.0	<1.0	N/A
MW12	6/22/2010	<1.0	<1.0	<1.0	<1.0	18.85
MW12	9/17/2010	<1.0	<1.0	<1.0	<1.0	18.25
MW12	12/9/2010	<1.0	<1.0	<1.0	<1.0	17.69
MW12	3/10/2011	<1.0	<1.0	<1.0	<1.0	17.42
MW12	6/8/2011	<1.0	<1.0	<1.0	<1.0	17.33
MW12	9/26/2011	<1.0	<1.0	<1.0	<1.0	17.16
MW12	12/29/2011	NS	NS	NS	NS	N/A
MW12	3/7/2012	<1.0	<1.0	<1.0	<1.0	16.74
MW12	6/26/2012	Destroyed				
MW13	1/18/2010	<b>35</b>	<1.0	230	73	N/A
MW13	6/22/2010	<b>5.1</b>	<1.0	290	<1.0	18.56
MW13	9/17/2010	<b>13</b>	<1.0	160	<1.0	17.95
MW13	12/9/2010	4.4	<1.0	160	<1.0	17.42
MW13	3/10/2011	<1.0	<1.0	23	3.4	16.15
MW13	6/8/2011	<1.0	<1.0	110	<1.0	17.04
MW13	9/26/2011	2.1	<1.0	190	2.3	16.84
MW13	12/29/2011	<1.0	<1.0	190	<1.0	16.51
MW13	3/7/2012	<1.0	<1.0	150	<1.0	16.45
MW13	6/26/2012	<1.0	<1.0	150	13	15.64
MW13	9/20/2012	NS	NS	NS	NS	N/A

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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)	
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>		
MW13	12/12/2012	<1.0	<1.0	110	<1.0	15.70	
MW13	6/21/2013	2.2	<1.0	110	160	15.61	
MW13	9/23/2013	<b>7.2</b>	<1.0	290	1,100	15.75	
MW13	12/18/2013	1.6	<1.0	2.7	94	15.56	
MW13	3/31/2014	<1.0	<1.0	<1.0	4.8	15.26	
MW13	6/17/2014	3.5	<1.0	270	850	14.24	
MW13	9/17/2014	<1.0	<1.0	190	120	13.43	
MW13	12/2/2014	2.8	<1.0	610	280	13.09	
MW13	3/16/2015	2.2	<1.0	530	210	12.31	
MW13	6/25/2015	1.8	<1.0	260	310	10.91	
MW13	9/25/2015	2.0	<1.0	570	710	11.61	
MW13	12/16/2015	1.5	1.3	650	<b>1,400</b>	13.14	
MW13	3/31/2016	1.6	1.8	400	1,200	10.33	
MW13	6/30/2016	1.5	1.3	360	<b>1,400</b>	9.12	
MW13	9/14/2016	1.0	<1.0	460	900	9.55	
MW13	12/16/2016	<1.0	22	500	<b>6,300</b>	10.71	
MW13	3/30/2017	<1.0	<1.0	410	700	10.58	
MW14	1/18/2010	<1.0	<1.0	<1.0	<1.0	N/A	
MW14	6/22/2010	<1.0	<1.0	<1.0	<1.0	19.06	
MW14	9/17/2010	3.9	<1.0	180	25	18.49	
MW14	12/9/2010	<1.0	<1.0	3.8	<1.0	17.94	
MW14	3/10/2011	1.2	<1.0	8.8	<1.0	17.64	
MW14	6/8/2011	<1.0	<1.0	1.3	<1.0	17.69	
MW14	9/26/2011	2.8	<1.0	150	3.0	17.37	
MW14	12/29/2011	<1.0	<1.0	26	<1.0	17.03	
MW14	3/7/2012	<1.0	<1.0	<1.0	<1.0	16.95	
MW14	6/26/2012	Destroyed					
MW15	2/10/2010	<b>240</b>	<1.0	340	<b>1,600</b>	N/A	
MW15	6/22/2010	<1.0	<1.0	<1.0	<1.0	17.04	
MW15	9/17/2010	Destroyed					
MW16	2/10/2010	<b>44</b>	<1.0	130	450	N/A	
MW16	6/22/2010	<1.0	<1.0	4.4	12	16.72	

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**DECHANT 1-31A TANK BATTERY**  
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Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water <sup>(2)</sup> (feet)
<b>COGCC Table 910-1 Groundwater Standard (µg/L)<sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW16	9/17/2010	Destroyed				
MW17	3/31/2014	<1.0	<1.0	<1.0	<1.0	13.68
MW17	6/17/2014	<1.0	<1.0	<1.0	<1.0	12.58
MW17	9/17/2014	<1.0	<1.0	<1.0	<1.0	12.04
MW17	12/2/2014	<1.0	<1.0	<1.0	6.6	11.42
MW17	3/16/2015	<1.0	<1.0	1.5	2.0	10.61
MW17	6/25/2015	<1.0	<1.0	<1.0	<1.0	9.23
MW17	9/25/2015	<1.0	<1.0	<1.0	<1.0	9.92
MW17	12/16/2015	<1.0	<1.0	<1.0	<1.0	9.48
MW17 <sup>(2)</sup>	3/31/2016	NS	NS	NS	NS	NM
MW17	6/30/2016	Destroyed				NM
MW17-R	9/14/2016	<1.0	<1.0	<1.0	<1.0	8.58
MW17-R	12/16/2016	<1.0	<1.0	<1.0	<1.0	8.98
MW17-R	3/30/2017	<1.0	<1.0	<1.0	<2.0	8.84
MW18	3/31/2014	<1.0	<1.0	<1.0	<1.0	14.00
MW18	6/17/2014	<1.0	<1.0	<1.0	<1.0	12.92
MW18	9/17/2014	<1.0	<1.0	<1.0	<1.0	12.40
MW18	12/2/2014	<1.0	<1.0	<1.0	<1.0	11.74
MW18	3/16/2015	<1.0	<1.0	<1.0	<1.0	10.95
MW18	6/25/2015	<1.0	<1.0	<1.0	<1.0	9.55
MW18	9/25/2015	<1.0	<1.0	<1.0	<1.0	10.35
MW18	12/16/2015	<1.0	<1.0	<1.0	<1.0	9.91
MW18	3/31/2016	<1.0	<1.0	<1.0	<1.0	8.66
MW18	6/30/2016	<1.0	<1.0	<1.0	<1.0	7.61
MW18	9/14/2016	<1.0	<1.0	<1.0	<1.0	8.96
MW18	12/16/2016	<1.0	<1.0	<1.0	<1.0	9.49
MW18	3/30/2017	<1.0	<1.0	<1.0	<2.0	9.37
MW19	3/31/2014	<1.0	<1.0	<1.0	<1.0	14.37
MW19	6/17/2014	<1.0	<1.0	<1.0	<1.0	13.29
MW19	9/17/2014	<1.0	<1.0	<1.0	<1.0	12.75
MW19	12/2/2014	<1.0	<1.0	<1.0	<1.0	12.10
MW19	3/16/2015	<1.0	<1.0	<1.0	<1.0	11.31

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<b>COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW19	6/25/2015	<1.0	<1.0	<1.0	<1.0	9.93
MW19	9/25/2015	<1.0	<1.0	<1.0	<1.0	10.63
MW19	12/16/2015	<1.0	<1.0	<1.0	<1.0	10.19
MW19	3/31/2016	<1.0	<1.0	<1.0	<1.0	8.94
MW19	6/30/2016	<1.0	<1.0	<1.0	<1.0	8.28
MW19	9/14/2016	<1.0	<1.0	<1.0	<1.0	9.59
MW19	12/16/2016	<1.0	<1.0	<1.0	<1.0	10.05
MW19	3/30/2017	<1.0	<1.0	<2.0	<1.0	9.92
MW20	3/31/2014	<1.0	<1.0	<1.0	46	14.85
MW20	6/17/2014	<1.0	<1.0	<1.0	2.5	13.73
MW20	9/17/2014	<1.0	<1.0	<1.0	<1.0	13.21
MW20	12/2/2014	<1.0	<1.0	<1.0	<1.0	12.55
MW20	3/16/2015	<1.0	<1.0	<1.0	<1.0	11.77
MW20	6/25/2015	<1.0	<1.0	<1.0	<1.0	10.39
MW20	9/25/2015	<1.0	<1.0	<1.0	<1.0	11.16
MW20	12/16/2015	<1.0	<1.0	<1.0	<1.0	10.73
MW20	3/31/2016	<1.0	<1.0	<1.0	<1.0	9.97
MW20	6/30/2016	<1.0	<1.0	<1.0	<1.0	8.72
MW20	9/14/2016	<1.0	<1.0	<1.0	<1.0	9.96
MW20	12/16/2016	<1.0	<1.0	<1.0	<1.0	10.35
MW20	3/30/2017	<1.0	<1.0	<1.0	<2.0	10.21
MW21	3/31/2014	<1.0	<1.0	250	1,000	14.56
MW21	6/17/2014	<1.0	<1.0	470	<b>3,200</b>	13.47
MW21	9/17/2014	<1.0	<1.0	380	<b>3,400</b>	12.97
MW21	12/2/2014	2.5	2.2	<b>1,400</b>	<b>18,000</b>	12.31
MW21	3/16/2015	3.3	3.7	<b>1,700</b>	<b>26,000</b>	11.52
MW21	6/25/2015	4.5	4.9	<b>1,300</b>	<b>21,000</b>	10.14
MW21	9/25/2015	2.6	3.6	<b>840</b>	<b>14,000</b>	10.92
MW21	12/16/2015	1.6	2.6	590	<b>8,400</b>	10.49
MW21	3/31/2016	2.7	3.0	<b>860</b>	1,100	9.91
MW21	6/30/2016	1.8	2.7	630	<b>8,900</b>	8.66
MW21	9/14/2016	2.8	2.5	<b>1,000</b>	<b>11,000</b>	9.91
MW21	12/16/2016	2.7	1.4	100	820	10.32

**TABLE 1**  
**DECHANT 1-31A 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 <sup>(2)</sup> (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup>		5	560	700	1,400	
MW21	3/30/2017	2.7	<1.0	1,100	7,300	10.20
MW22	3/31/2014	<1.0	<1.0	<1.0	<1.0	13.92
MW22	6/17/2014	<1.0	<1.0	<1.0	<1.0	12.82
MW22	9/17/2014	<1.0	<1.0	<1.0	<1.0	12.30
MW22	12/2/2014	<1.0	<1.0	<1.0	<1.0	11.62
MW22	3/16/2015	<1.0	<1.0	<1.0	12	10.83
MW22	6/25/2015	<1.0	<1.0	<1.0	12	9.46
MW22	9/25/2015	<1.0	<1.0	<1.0	<1.0	10.16
MW22	12/16/2015	<1.0	<1.0	<1.0	3.6	9.73
MW22	3/31/2016	<1.0	<1.0	<1.0	4.2	8.45
MW22	6/30/2016	<1.0	<1.0	<1.0	<1.0	7.14
MW22	9/14/2016	<1.0	<1.0	<1.0	<1.0	8.44
MW22	12/16/2016	<1.0	<1.0	<1.0	<1.0	9.09
MW22	3/30/2017	<1.0	<1.0	<1.0	<2.0	8.97
MW23	1/25/2016	18	7.9	1,300	13,000	11.03
MW23	3/31/2016	39	15	1,300	650	10.20
MW23	6/30/2016	1.0	1.6	200	3,700	9.00
MW23	9/14/2016	8.9	<1.0	390	4,500	10.22
MW23	12/16/2016	39	<1.0	210	1,700	10.67
MW23	3/30/2017	11	<1.0	330	1,800	10.52
MW24	1/25/2016	<1.0	<1.0	<1.0	2.5	11.19
MW24	3/31/2016	<1.0	<1.0	<1.0	7.0	10.30
MW24	6/30/2016	<1.0	<1.0	<1.0	<1.0	9.10
MW24	9/14/2016	<1.0	<1.0	<1.0	<1.0	10.30
MW24	12/16/2016	<1.0	<1.0	<1.0	2.5	10.79
MW24	3/30/2017	<1.0	<1.0	<1.0	<2.0	10.65

**TABLE 1**  
**DECHANT 1-31A 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 <sup>(2)</sup> (feet)
COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
2. Depth to water measurements collected prior to fourth quarter 2016 were measured from top of casing for monitoring well samples. Subsequent monitoring well measurements were collected from top of casing and adjusted using survey data and product thickness to reflect depth of water from ground surface.
3. Well inaccessible due to standing water during first quarter 2016 sampling event.

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 inaccessible

NM = Not measured

N/A = LT Environmental, Inc. field data not available

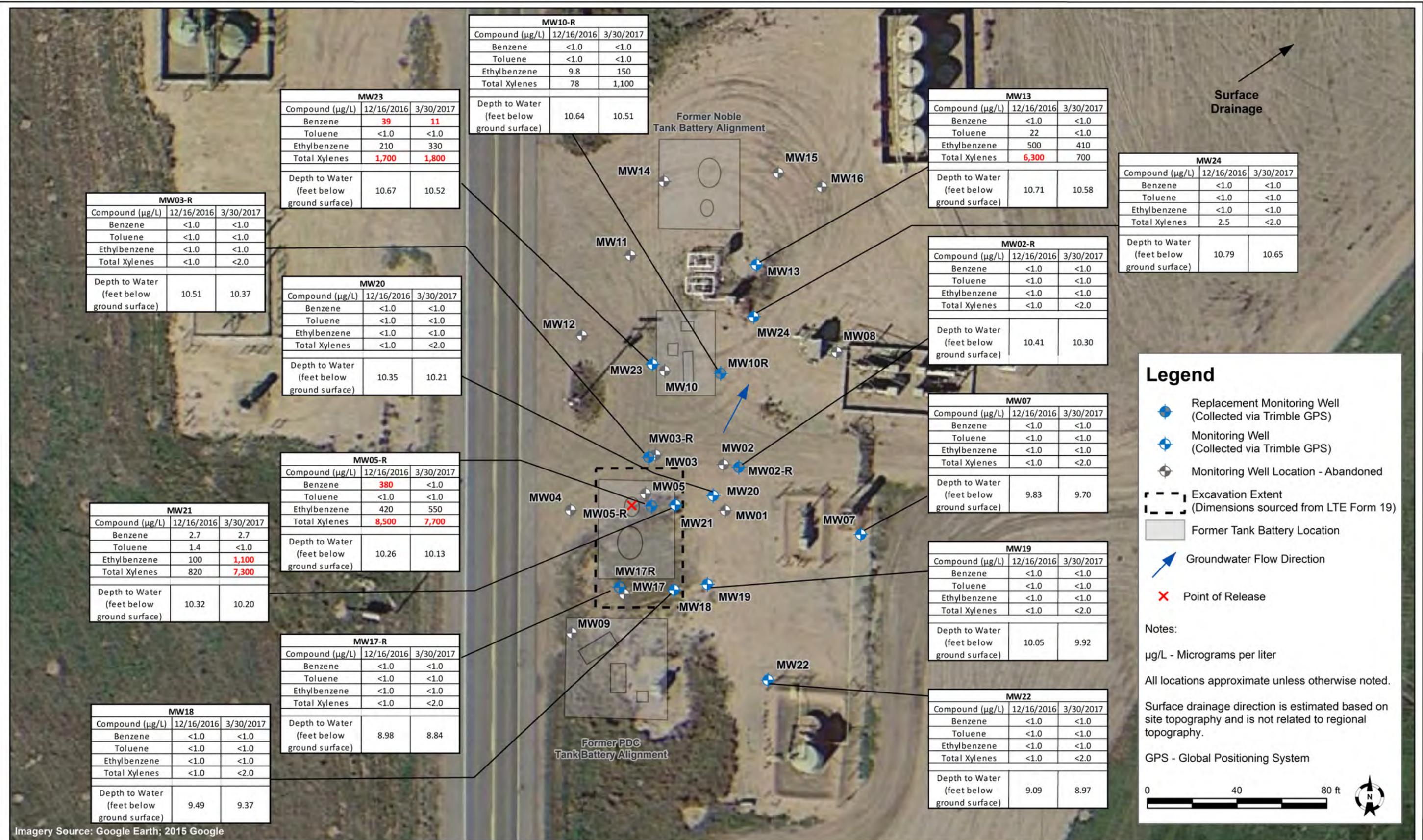
**BOLD** = Analytical result is not in compliance with COGCC groundwater standards.

**TABLE 2**  
**DECHANT 1-31A TANK BATTERY**  
**EFR / AS 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)
<b>Third Quarter 2015</b>						
7/8/2015	MW10R, MW18, MW20, MW21	6	15	MW10R, MW21	20	20
7/22/2015		6	0		20	35
8/5/2015		6	0		20	35
8/19/2015		6	0		20	37.5
9/2/2015		6	0		20	35
9/16/2015		6	60		20	37.5
9/28/2015		6	0		20	40
<b>Quarterly Totals</b>		<b>42</b>	<b>75</b>		-	-
<b>Fourth Quarter 2015</b>						
10/14/2015	MW10R, MW18,	6	10	MW10R, MW21	20	42.5
10/28/2015	MW20, MW21	6	0		20	30
11/14/2015	MW10R, MW18, MW21	6	4		20	40
11/25/2015	MW10R, MW18, MW20, MW21	6	15		20	30
12/10/2015		6	60		20	30
12/22/2015		6	10		20	30
<b>Quarterly Totals</b>		<b>36</b>	<b>99</b>			-

**Notes:**

EFR = Enhanced fluid recovery  
AS = Air sparge  
psi = Pounds per square inch  
cfm = Cubic feet per minute



DATE: April 2017  
 DESIGNED BY: C. Hamlin  
 DRAWN BY: D. Arnold



**PDC Energy - DJ Basin**  
**Dechant 1-31 A Tank Battery**  
 SWSW Section 31, Township 3 North, Range 64 West  
 Weld County, Colorado

GROUNDWATER ANALYTICAL  
 RESULTS MAP

FIGURE  
 1



DATE: April 2017  
 DESIGNED BY: C. Hamlin  
 DRAWN BY: D. Arnold



**PDC Energy - DJ Basin**  
**Dechant 1-31 A Tank Battery**  
 SWSW Section 31, Township 3 North, Range 64 West  
 Weld County, Colorado

REMEDATION SYSTEM  
 OVERVIEW MAP

FIGURE  
 2

## **ATTACHMENT A**

# Summit Scientific

---

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 05, 2017

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Dechant 1-31A

Enclosed are the results of analyses for samples received by Summit Scientific on 03/30/17 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ben Shrewsbury', with a long, sweeping horizontal stroke extending to the right.

Ben Shrewsbury  
Laboratory Manager



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

Project: Dechant 1-31A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/05/17 15:18

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW02R	1703302-01	Water	03/30/17 11:20	03/30/17 16:30
MW03R	1703302-02	Water	03/30/17 11:18	03/30/17 16:30
MW05R	1703302-03	Water	03/30/17 11:34	03/30/17 16:30
MW07	1703302-04	Water	03/30/17 11:37	03/30/17 16:30
MW10R	1703302-05	Water	03/30/17 11:07	03/30/17 16:30
MW13	1703302-06	Water	03/30/17 10:53	03/30/17 16:30
MW17R	1703302-07	Water	03/30/17 12:01	03/30/17 16:30
MW18	1703302-08	Water	03/30/17 12:18	03/30/17 16:30
MW19	1703302-09	Water	03/30/17 12:15	03/30/17 16:30
MW20	1703302-10	Water	03/30/17 11:55	03/30/17 16:30
MW21	1703302-11	Water	03/30/17 11:48	03/30/17 16:30
MW22	1703302-12	Water	03/30/17 12:39	03/30/17 16:30
MW23	1703302-13	Water	03/30/17 11:06	03/30/17 16:30
MW24	1703302-14	Water	03/30/17 10:50	03/30/17 16:30

Summit Scientific

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

Project: Dechant 1-31A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
04/05/17 15:18

# Summit Scientific

1703302.1

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

Page 1 of 2

Client: PDC / Tasman Geosciences	Project Manager: Mark Longhurst
Address: 6899 Pecos St, Unit C	E-Mail: mark.longhurst@pdce.com
City/State/Zip: Denver, CO 80221	Project Name: <u>Dechant 1-31A</u>
Phone: 303-487-1228 Fax:	Project Number: N/A
Sampler Name: <u>Max Garza, Mitch Weller</u>	

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX - 8260			
MW02R	3/30/17	11:20	5		X		X					X			
MW03K		11:18													
MW05K		11:34													
MW07		11:37													
MW08R		11:07													
MW13		10:53													
MW17K		12:01													
MW18		12:18													
MW19		12:15													
MW20		11:55													

Relinquished by: <u>Max Garza</u>	Date/Time: <u>3/30/17 1630</u>	Received by: <u>MW</u>	Date/Time: <u>3/30/17 1630</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>	Notes: <u>on ice</u>
Relinquished by: <u>MW</u>	Date/Time: <u>3/30/17 1710</u>	Received by: <u>OS</u>	Date/Time: <u>3-30 1710</u>		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:		

Sample Integrity: Temperature Upon Receipt: 1.7°C  
Intact:  Yes  No

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Summit Scientific

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

Project: Dechant 1-31A

Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
04/05/17 15:18

# Summit Scientific

1703302.2

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

Page 2 of 2

Client: PDC / Tasman Geosciences  
Address: 6899 Pecos St, Unit C  
City/State/Zip: Denver, CO 80221  
Phone: 303-487-1228 Fax:  
Sampler Name: Max Garza, Mitch Weiler

Project Manager: Mark Longhurst  
E-Mail: mark.longhurst@pdce.com  
Project Name: Dechant 1-31A  
Project Number: N/A

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX - 8260			
MW21	3/30/17	11:48	3		X		X					X			
MW22		12:39													
MW23		11:06													
MW24		11:30													
Relinquished by: Max Garza 3/30/17 1630				Received by: MD 3/30/17 1630				Turn Around Time (Check)				Notes:			
Relinquished by: MD 3/30/17 1710				Received by: MS 3-30 1710				Same Day <input type="checkbox"/> 72 Hours <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> Standard 48 Hours <input type="checkbox"/>				on ice			
Relinquished by:				Received in Lab by:				Sample Integrity:				Temperature Upon Receipt: 1.7°C			
								Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							

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

Project: Dechant 1-31A

Project Number: [none]  
 Project Manager: Mark Longhurst

Reported:  
 04/05/17 15:18

**Sample Receipt Checklist**

S2 Work Order: 1703302  
 Client: PDC/Tasman Client Project ID: Dechant 1-31A  
 Shipped Via: PIU Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	<u>1.7</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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?				
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ?			<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):				

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

Nakita [Signature] 3/30/17 1710  
 Custodian Printed Name Signature of Initials of Custodian Date/Time



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

Project: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW02R**  
**1703302-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		102 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Dechant 1-31A

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW03R**  
**1703302-02 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW05R**  
**1703302-03 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>550</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>7700</b>	200	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.5 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		104 %	45-146		"	"	"	"	

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

Project: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW07**  
**1703302-04 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	45-146		"	"	"	"	

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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW10R**  
**1703302-05 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>150</b>	1.0	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>1100</b>	50	"	25	"	"	"	"	

Date Sampled: **03/30/17 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.0 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW13**  
**1703302-06 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>410</b>	25	"	25	"	"	"	"	
<b>Xylenes (total)</b>	<b>700</b>	50	"	"	"	"	"	"	

Date Sampled: **03/30/17 10:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.6 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		103 %	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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW17R**  
**1703302-07 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 12:01**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.2 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

Summit Scientific

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

Project: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW18**  
**1703302-08 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		100 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	45-146		"	"	"	"	

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

Project: Dechant 1-31A

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW19**  
**1703302-09 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>101 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>102 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>102 %</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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW20**  
**1703302-10 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>102 %</i>	<i>37-154</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: Toluene-d8</i>		<i>98.0 %</i>	<i>45-149</i>		<i>"</i>	<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>101 %</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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW21**  
**1703302-11 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>2.7</b>	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1100</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>7300</b>	200	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.4 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	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: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW22**  
**1703302-12 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 12:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		93.5 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	45-146		"	"	"	"	

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

Project: Dechant 1-31A

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW23**  
**1703302-13 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>11</b>	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>330</b>	100	"	100	"	"	"	"	
<b>Xylenes (total)</b>	<b>1800</b>	200	"	"	"	"	"	"	

Date Sampled: **03/30/17 11:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.8 %	37-154		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		96.7 %	45-149		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		101 %	45-146		"	"	"	"	

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

Project: Dechant 1-31A

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

**MW24**  
**1703302-14 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/30/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1703362	04/01/17	04/01/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/30/17 10:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.3 %	37-154		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	45-149		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	45-146		"	"	"	"	

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

Project: Dechant 1-31A  
Project Number: [none]  
Project Manager: Mark Longhurst

Reported:  
04/05/17 15:18

**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 1703362 - EPA 5030 Water MS**

**Blank (1703362-BLK1)**

Prepared & Analyzed: 04/01/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.5		"	13.3		101	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	45-146			

**LCS (1703362-BS1)**

Prepared & Analyzed: 04/01/17

Benzene	29.3	1.0	ug/l	33.3		88.0	51-132			
Toluene	33.9	1.0	"	33.3		102	51-138			
Ethylbenzene	38.3	1.0	"	33.1		116	58-146			
m,p-Xylene	78.8	2.0	"	66.5		118	57-144			
o-Xylene	36.2	1.0	"	32.7		111	53-146			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		99.1	45-149			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.7	45-146			

**Matrix Spike (1703362-MS1)**

Source: 1703302-01

Prepared & Analyzed: 04/01/17

Benzene	29.4	1.0	ug/l	33.3	ND	88.3	34-141			
Toluene	33.9	1.0	"	33.3	ND	102	27-151			
Ethylbenzene	38.6	1.0	"	33.1	ND	117	29-160			
m,p-Xylene	80.4	2.0	"	66.5	ND	121	20-166			
o-Xylene	37.0	1.0	"	32.7	ND	113	33-159			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105	37-154			
Surrogate: Toluene-d8	13.2		"	13.3		98.9	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	45-146			

Summit Scientific

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

Project: Dechant 1-31A  
 Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 04/05/17 15:18

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

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

**Batch 1703362 - EPA 5030 Water MS**

<b>Matrix Spike Dup (1703362-MSD1)</b>	<b>Source: 1703302-01</b>			<b>Prepared &amp; Analyzed: 04/01/17</b>						
Benzene	29.7	1.0	ug/l	33.3	ND	89.1	34-141	0.914	32	
Toluene	34.0	1.0	"	33.3	ND	102	27-151	0.501	25	
Ethylbenzene	38.0	1.0	"	33.1	ND	115	29-160	1.41	50	
m,p-Xylene	78.4	2.0	"	66.5	ND	118	20-166	2.56	36	
o-Xylene	36.2	1.0	"	32.7	ND	111	33-159	2.13	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>14.5</i>		<i>"</i>	<i>13.3</i>		<i>109</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-149</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.4</i>		<i>"</i>	<i>13.3</i>		<i>101</i>	<i>45-146</i>			

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

Project: Dechant 1-31A

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/05/17 15:18

### 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