
TABLES

Table 1
Matt #1 Production Facility Historic Release
Soil Analytical Summary
October 19, 2017 through October 23, 2017
Weld County, Colorado

Sample Number	Sample Date	Sample Depth (ft-bgs)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	TPH (mg/kg)	Sample Location
*COGCC Table 910-1 Concentration Levels				0.17	85	100	175	23	500	500	500	
SS01 @6.5 East Wall	10/19/2017	6.5	53.1	ND	ND	ND	ND	ND	ND	ND	ND	40.294951, -104.848122
SS02 @5.0 East Wall	10/19/2017	5.0	48.6	ND	ND	ND	ND	ND	ND	ND	ND	40.294951, -104.848122
SS03 @5.0 South Wall	10/19/2017	5.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND	40.294900, -104.848191
SS04 @6.0 North Wall	10/19/2017	6.0	272.2	ND	ND	ND	ND	ND	56	290	346	40.295072, -104.848101
SS05 @5.5 North Wall	10/19/2017	5.5	58.8	ND	ND	ND	ND	ND	7.7	240	247.7	40.295072, -104.848101
North Test Pit @6.0	10/20/2017	6.0	20.8	ND	ND	ND	ND	ND	ND	ND	ND	40.295107, -104.848072
East Test Pit @6.0	10/20/2017	6.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND	40.294985, -104.848015
SS06 NE Wall @ 6.0'	10/23/2017	6.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND	40.295027, -104.848057
SS07 NW Wall @ 6.0'	10/23/2017	6.0	10.0	ND	ND	ND	ND	ND	ND	ND	ND	40.295095, -104.848095
SS09 West Wall @ 6.0'	10/23/2017	6.0	0.0	ND	ND	ND	ND	ND	ND	ND	ND	40.295001, -104.848301

*Colorado Oil and Gas Conservation Commission (COGCC), 900 Series, Exploration and Production Waste Management, Table 910-1, Concentration Levels, January 30, 2015

ft-bgs - Feet below ground surface

mg/kg - Milligrams per kilogram

PID - Photo-ionization detector

ppm - Parts per million

BTEX - Benzene, toluene, ethylbenzene, total xylenes

GRO - Gasoline range organics

DRO - Diesel range organics

TPH - Total petroleum hydrocarbons (GRO+DRO concentrations)

ND - Sample not reported above laboratory reporting limit

NA - Not analyzed

Bold - Above COGCC Table 910-1 concentration level

Table 2
Matt #1 Production Facility Historic Release
Groundwater Analytical Summary
October 24, 2017
Weld County, Colorado

Sample Number	Sample Date	Depth to Groundwater (ft-bgs)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Sample Location
*COGCC Table 910-1 Concentration Levels			5	560	700	1,400	
PitGW01	10/24/2017	6.0	ND	ND	ND	ND	Center of Excavation

*Colorado Oil and Gas Conservation Commission (COGCC), 900 Series, Exploration and Production Waste Management, Table 910-1, Concentration Levels, January 30, 2015

ft-bgs - Feet below ground surface

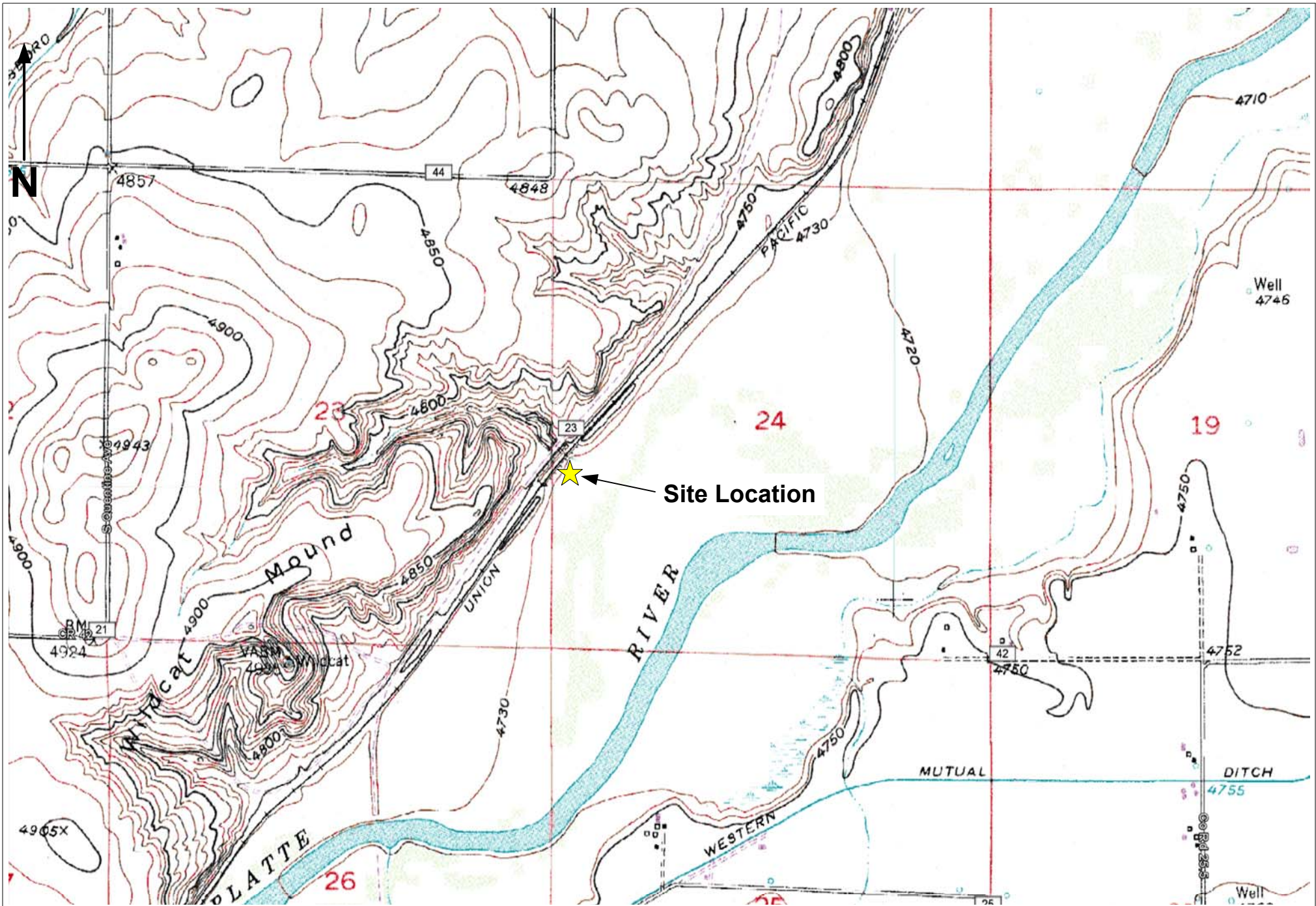
µg/L - Micrograms per liter

ND - Sample not reported above laboratory reporting limit

NA - Not analyzed

Bold - Above COGCC Table 910-1 concentration level

FIGURES



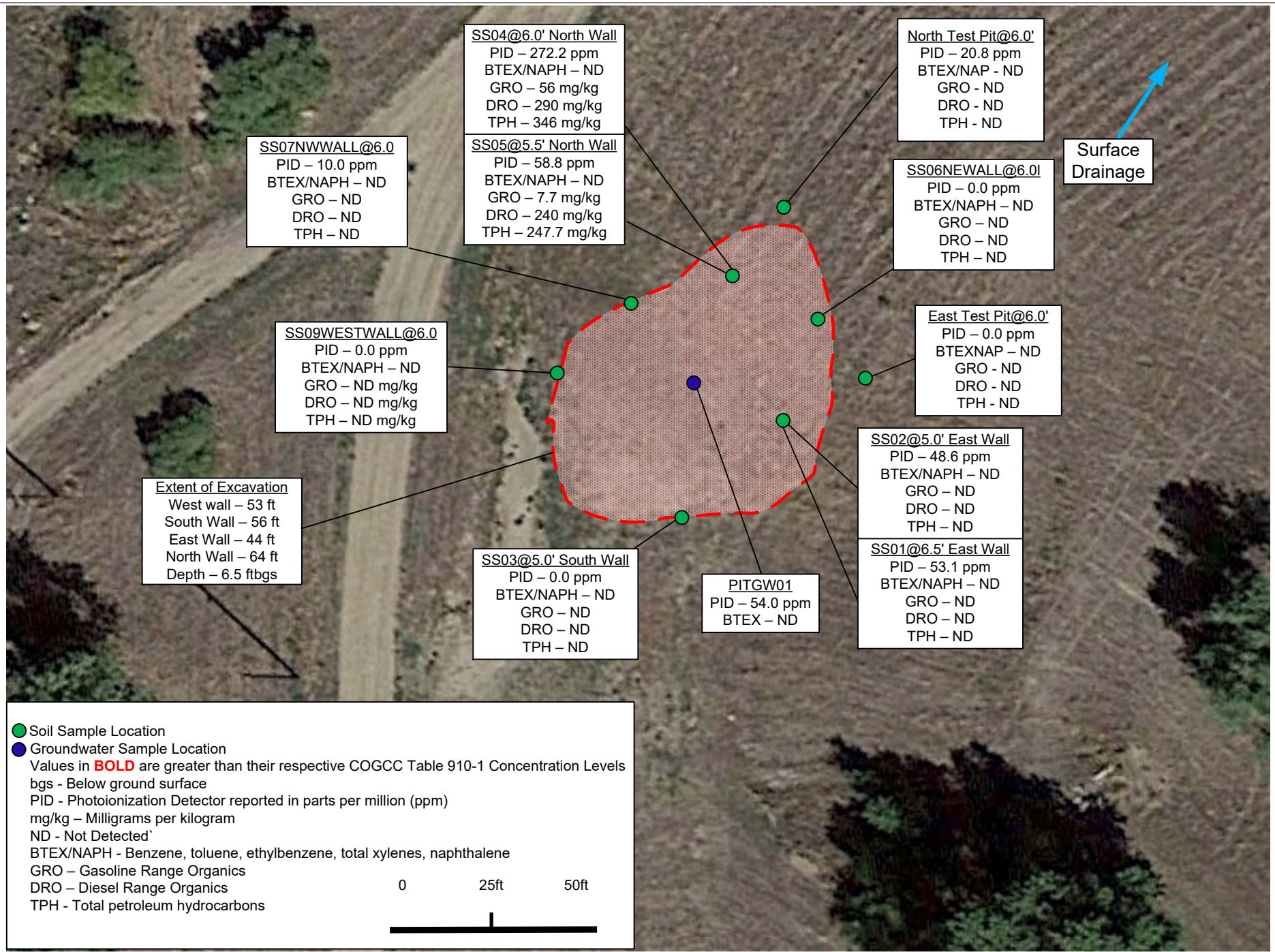
PROJECT NO: 017-2923
 DRAWN BY: JED
 DATE: 10/31/2017

Site Location Map
 PDC Energy, Inc.
 Former Matt #1 Production Facility
 NWSW S24 T4N R67W
 Weld County, Colorado



4690 Table Mountain Drive
 Suite 200
 Golden, CO 80403
 TEL 303-237-2072
 FAX 303-237-2659

FIGURE
 1



● Soil Sample Location
 ● Groundwater Sample Location
 Values in **BOLD** are greater than their respective COGCC Table 910-1 Concentration Levels
 bgs - Below ground surface
 PID - Photoionization Detector reported in parts per million (ppm)
 mg/kg – Milligrams per kilogram
 ND - Not Detected
 BTEX/NAPH - Benzene, toluene, ethylbenzene, total xylenes, naphthalene
 GRO – Gasoline Range Organics
 DRO – Diesel Range Organics
 TPH - Total petroleum hydrocarbons

0 25ft 50ft

PROJECT NO: 017-2923
 DRAWN BY: JED/PTW
 DATE: 10/31/2017

Excavation and Sample Locations Diagram
 PDC Energy, Inc.
 Former Matt #1 Production Facility
 NWSW S24 T4N R67W
 Weld County, Colorado

OLSSON ASSOCIATES
 4690 Table Mountain Drive
 Suite 200
 Golden, CO 80403
 TEL 303-237-2072
 FAX 303-237-2659

FIGURE
 2

**ATTACHMENT A
SOIL AND GROUNDWATER
CONFIRMATION SAMPLES
LABORATORY REPORTS**

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 20, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Matt #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/19/17 16:12. 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: Matt #1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6.5 EW	1710215-01	Soil	10/19/17 10:25	10/19/17 16:12
SS02@5.0 EW	1710215-02	Soil	10/19/17 10:28	10/19/17 16:12
SS03@5.0 SW	1710215-03	Soil	10/19/17 11:09	10/19/17 16:12
SS04@6.0 NW	1710215-04	Soil	10/19/17 13:44	10/19/17 16:12
SS05@5.5 NW	1710215-05	Soil	10/19/17 13:50	10/19/17 16:12

Summit Scientific

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

Project: Matt #1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

1710215

Summit Scientific

741 Corporate Circle Suite I • 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: Jason Davidson

Project Manager: Mark Longhurst
E-Mail: j.davidson@sssaassociates.com, karen.olson@pdce.com
Project Name: Matt #1
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX (8260B)	Naphthalene (8260B)	TPH-GRO (8260B)		TPH-DRO (8015)
SS0106.5 EW	10/19/17	10:25	1			X			X			X	X	X	X	
SS0205.0 EW		10:28	1			X			X			X	X	X	X	
SS0305.0 SW		11:04	1			X			X			X	X	X	X	
SS0406.0 NW		13:49	1			X			X			X	X	X	X	
SS0505.5 NW		13:50	1			X			X			X	X	X	X	
Relinquished by: <i>Jason Davidson</i>	Date/Time: 10/19/17 16:12	Received by: <i>[Signature]</i>	Date/Time: 10-19-17	Turn Around Time (Check)				Notes:								
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	<input checked="" type="checkbox"/>	72 Hours	<input type="checkbox"/>	24 Hours	<input type="checkbox"/>	Standard	<input type="checkbox"/>					
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	48 Hours	<input type="checkbox"/>											
				Sample Integrity:												
				Temperature Upon Receipt: 71												
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>												

www.s2scientific.com



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

Project: Matt #1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/20/17 06:01

1710215

Sample Receipt Checklist

S2 Work Order: _____
 Client: PDC Client Project ID: MATT #1
 Shipped Via: H.D. ON ICE Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Cooler ID				
Temp (°C)	<u>7.1</u>			

Thermometer ID: 51857155-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⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.			<input checked="" type="checkbox"/>	
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.

Murip.
 Custodian Printed Name

MS 10-19-17
 Signature or Initials of Custodian

18:00
 Date/Time



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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

SS01@6.5 EW
1710215-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/17 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710214	10/19/17	10/19/17	8015M	

Date Sampled: **10/19/17 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/17 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710212	10/19/17	10/19/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/17 10:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.9 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

SS02@5.0 EW
1710215-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/17 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710214	10/19/17	10/19/17	8015M	

Date Sampled: **10/19/17 10:28**

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: **10/19/17 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710212	10/19/17	10/19/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/17 10:28**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

SS03@5.0 SW
1710215-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/17 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710214	10/19/17	10/19/17	8015M	

Date Sampled: **10/19/17 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/17 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710212	10/19/17	10/19/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/17 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

SS04@6.0 NW
1710215-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/17 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	290	50	mg/kg	1	1710214	10/19/17	10/19/17	8015M	

Date Sampled: **10/19/17 13:44**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/17 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710212	10/19/17	10/19/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	56	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/17 13:44**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		113 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		111 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		106 %	21-167		"	"	"	"	

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

SS05@5.5 NW
1710215-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/19/17 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	240	50	mg/kg	1	1710214	10/19/17	10/19/17	8015M	

Date Sampled: **10/19/17 13:50**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/19/17 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710212	10/19/17	10/19/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.7	0.50	"	"	"	"	"	"	

Date Sampled: **10/19/17 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		120 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.2 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		85.1 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Matt #1
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/20/17 06:01

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1710214 - EPA 3550A

Blank (1710214-BLK1)				Prepared: 10/19/17 Analyzed: 10/20/17							
C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	13.4		"	12.5		107	30-150				
LCS (1710214-BS1)				Prepared: 10/19/17 Analyzed: 10/20/17							
C10-C28 (DRO)	586	50	mg/kg	499		117	73-134				
<i>Surrogate: o-Terphenyl</i>	14.2		"	12.5		113	30-150				
Matrix Spike (1710214-MS1)				Source: 1710215-01		Prepared: 10/19/17 Analyzed: 10/20/17					
C10-C28 (DRO)	518	50	mg/kg	499	18.8	100	50-148				
<i>Surrogate: o-Terphenyl</i>	14.0		"	12.5		112	30-150				
Matrix Spike Dup (1710214-MSD1)				Source: 1710215-01		Prepared: 10/19/17 Analyzed: 10/20/17					
C10-C28 (DRO)	501	50	mg/kg	499	18.8	96.6	50-148	3.30		20	
<i>Surrogate: o-Terphenyl</i>	13.9		"	12.5		111	30-150				

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

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 1710212 - EPA 5030 Soil MS

Blank (1710212-BLK1)

Prepared & Analyzed: 10/19/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0484</i>		<i>"</i>	<i>0.0400</i>		<i>121</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0380</i>		<i>"</i>	<i>0.0400</i>		<i>95.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>93.9</i>	<i>21-167</i>			

LCS (1710212-BS1)

Prepared & Analyzed: 10/19/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0606	0.0020	"	0.100		60.6	58-130			
Toluene	0.101	0.0050	"	0.100		101	61-134			
Ethylbenzene	0.126	0.0050	"	0.0992		127	74-139			
m,p-Xylene	0.244	0.010	"	0.200		122	73-137			
o-Xylene	0.148	0.0050	"	0.0980		152	73-141			S-02
Xylenes (total)	0.392	0.010	"				0-200			
Gasoline Range Hydrocarbons	1.73	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0371</i>		<i>"</i>	<i>0.0400</i>		<i>92.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0545</i>		<i>"</i>	<i>0.0400</i>		<i>136</i>	<i>21-167</i>			

Matrix Spike (1710212-MS1)

Source: 1710215-01

Prepared & Analyzed: 10/19/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0761	0.0020	"	0.100	ND	76.1	30-131			
Toluene	0.0791	0.0050	"	0.100	ND	79.1	30-134			
Ethylbenzene	0.104	0.0050	"	0.0992	ND	104	22-153			
m,p-Xylene	0.205	0.010	"	0.200	ND	103	10-159			
o-Xylene	0.102	0.0050	"	0.0980	ND	104	31-151			
Xylenes (total)	0.307	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	1.41	0.50	"		0.335		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0465</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0330</i>		<i>"</i>	<i>0.0400</i>		<i>82.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0562</i>		<i>"</i>	<i>0.0400</i>		<i>141</i>	<i>21-167</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: Matt #1
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/20/17 06:01

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 1710212 - EPA 5030 Soil MS

Matrix Spike Dup (1710212-MSD1)	Source: 1710215-01			Prepared & Analyzed: 10/19/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	10-158			42	
Benzene	0.0719	0.0020	"	0.100	ND	71.9	30-131	5.63	34	
Toluene	0.0946	0.0050	"	0.100	ND	94.6	30-134	17.9	30	
Ethylbenzene	0.100	0.0050	"	0.0992	ND	101	22-153	3.38	24	
m,p-Xylene	0.193	0.010	"	0.200	ND	96.7	10-159	6.02	68	
o-Xylene	0.0973	0.0050	"	0.0980	ND	99.3	31-151	4.78	38	
Xylenes (total)	0.290	0.010	"		ND		30-160	5.61	30	
Gasoline Range Hydrocarbons	1.73	0.50	"		0.335		30-160	20.1	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0471</i>		<i>"</i>	<i>0.0400</i>		<i>118</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>96.1</i>	<i>21-167</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: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/20/17 06:01

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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

October 24, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Matt #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/20/17 11:23. 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: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NorthTestPit@6'	1710232-01	Soil	10/20/17 09:11	10/20/17 11:23
EastTestPit@6'	1710232-02	Soil	10/20/17 09:35	10/20/17 11:23

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: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

Summit Scientific

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

17/6232

Page 1 of 1

Client: PDC Energy
Address:
City/State/Zip:
Phone: Fax:
Sampler Name: Jason Davidson

Project Manager: Mark Longhurst
E-Mail:
Project Name: Matt #1
Project Number: 017-2923

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)	BTX (R10)	Metal Ion (R10)		TPH-GRO (R10)
North Test Pit @ G.D	10/20/17	9:11	1			X									HOLD SAMPLES UNTIL DIRECTED BY OLSSON. DO NOT ANALYZE. 2um sample RTN 10/23/17
East Test Pit @ G.D	↓	9:35	1			X									
Relinquished by: Jason Davidson	Date/Time: 10/20/17 11:23	Received by: [Signature]	Date/Time: 10-20-17	Turn Around Time (Check)				Notes:							
				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>											
				24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>											
				48 Hours <input type="checkbox"/>											
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:											
				Temperature Upon Receipt: 10.1											
				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											

www.s2scientific.com

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: Matt #1
 Project Number: 017-2923
 Project Manager: Mark Longhurst

Reported:
 10/24/17 07:18

Sample Receipt Checklist

S2 Work Order: 1710232
 Client: PDC Client Project ID: Matt 1
 Shipped Via: _____ Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>6.1</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			<u>same day</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>no email we should have it</u>
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? if yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

 Custodian Printed Name

 Signature or Initials of Custodian

 Date/Time



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

Project: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

NorthTestPit@6'
1710232-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/17 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710249	10/23/17	10/23/17	8015M	

Date Sampled: **10/20/17 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710248	10/23/17	10/23/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/20/17 09:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		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: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

EastTestPit@6'
1710232-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/20/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710249	10/23/17	10/23/17	8015M	

Date Sampled: **10/20/17 09:35**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/20/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710248	10/23/17	10/23/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/20/17 09:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	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: Matt #1
 Project Number: 017-2923
 Project Manager: Mark Longhurst

Reported:
 10/24/17 07:18

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1710249 - EPA 3550A

Blank (1710249-BLK1)				Prepared: 10/23/17 Analyzed: 10/24/17							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	13.6		"	12.5		109	30-150				
LCS (1710249-BS1)				Prepared: 10/23/17 Analyzed: 10/24/17							
C10-C28 (DRO)	552	50	mg/kg	499		111	73-134				
Surrogate: <i>o</i> -Terphenyl	17.2		"	12.5		137	30-150				
Matrix Spike (1710249-MS1)				Source: 1710231-01		Prepared: 10/23/17 Analyzed: 10/24/17					
C10-C28 (DRO)	530	50	mg/kg	499	12.5	104	50-148				
Surrogate: <i>o</i> -Terphenyl	14.6		"	12.5		116	30-150				
Matrix Spike Dup (1710249-MSD1)				Source: 1710231-01		Prepared: 10/23/17 Analyzed: 10/24/17					
C10-C28 (DRO)	530	50	mg/kg	499	12.5	104	50-148	0.0153		20	
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106	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: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

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 1710248 - EPA 5030 Soil MS

Blank (1710248-BLK1)

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

LCS (1710248-BS1)

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0897	0.0020	"	0.100		89.7	58-130			
Toluene	0.0894	0.0050	"	0.100		89.4	61-134			
Ethylbenzene	0.0907	0.0050	"	0.0992		91.4	74-139			
m,p-Xylene	0.170	0.010	"	0.200		85.4	73-137			
o-Xylene	0.0836	0.0050	"	0.0980		85.3	73-141			
Xylenes (total)	0.254	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.31	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0361</i>		<i>"</i>	<i>0.0400</i>		<i>90.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0452</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

Matrix Spike (1710248-MS1)

Source: 1710231-01

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0993	0.0020	"	0.100	ND	99.3	30-131			
Toluene	0.0980	0.0050	"	0.100	ND	98.0	30-134			
Ethylbenzene	0.111	0.0050	"	0.0992	ND	111	22-153			
m,p-Xylene	0.207	0.010	"	0.200	ND	103	10-159			
o-Xylene	0.100	0.0050	"	0.0980	ND	102	31-151			
Xylenes (total)	0.307	0.010	"		ND		30-160			
Gasoline Range Hydrocarbons	2.93	0.50	"		ND		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>			

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: Matt #1
 Project Number: 017-2923
 Project Manager: Mark Longhurst

Reported:
 10/24/17 07:18

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 1710248 - EPA 5030 Soil MS

Matrix Spike Dup (1710248-MSD1)	Source: 1710231-01			Prepared & Analyzed: 10/23/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	108	10-158		42	
Benzene	0.108	0.0020	"	0.100	ND	108	30-131	8.78	34	
Toluene	0.108	0.0050	"	0.100	ND	108	30-134	9.31	30	
Ethylbenzene	0.120	0.0050	"	0.0992	ND	121	22-153	7.90	24	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	10-159	7.66	68	
o-Xylene	0.109	0.0050	"	0.0980	ND	112	31-151	8.60	38	
Xylenes (total)	0.332	0.010	"		ND		30-160	7.97	30	
Gasoline Range Hydrocarbons	3.24	0.50	"		ND		30-160	10.0	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>21-167</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: Matt #1
Project Number: 017-2923
Project Manager: Mark Longhurst

Reported:
10/24/17 07:18

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

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 24, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Matt #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/23/17 15:00. 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: Matt #1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06NEWall@6'	1710231-01	Soil	10/23/17 09:20	10/23/17 15:00
SS07NWWall@6'	1710231-02	Soil	10/23/17 11:35	10/23/17 15:00
SS09WestWall@6'	1710231-03	Soil	10/23/17 11:55	10/23/17 15:00

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: Matt #1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

Summit Scientific 1710231

S₂

741 Corporate Circle, Suite J&K ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: PDC Project Manager: Mark Longhurst
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: MATT #1
Sampler Name: Front Yard Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested				Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BERK 2108	SAD 2108	DKO 2115		NAP 2108
1	SS06 NE Wall 106.0	10/23/17	0920	1			✓						✓	✓	✓	✓	
2	SS07 NW Wall 106.0	10/23/17	1135	1			✓						✓	✓	✓	✓	
3	SS09 West Wall 106.0	10/23/17	1155	1			✓						✓	✓	✓	✓	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>AKL</u>	Date/Time: <u>10/23/17 15:00</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10-23-17 15:00</u>	Turn Around Time (Check)	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/> 72 hours <input type="checkbox"/>	
				24 hours <input type="checkbox"/> Standard <input type="checkbox"/>	
				48 hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>13.1</u>	
				Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

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

Project: Matt #1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/24/17 07:17

Sample Receipt Checklist

S2 Work Order: 1710231
 Client: PDC Client Project ID: Matt 1.
 Shipped Via: _____ Airbill #: _____
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Matrix (check all that apply): Air Soil/Solid Water Other: _____
 (Describe)

Cooler ID					
Temp (°C)	<u>14</u>	<u>13.1</u>			

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>			<u>same day</u>
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>no email we should have it</u>
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

MC
 Custodian Printed Name

MC
 Signature or Initials of Custodian

10/23/17
 Date/Time



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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

SS06NEWall@6'
1710231-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/23/17 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710249	10/23/17	10/23/17	8015M	

Date Sampled: **10/23/17 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		109 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/23/17 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710248	10/23/17	10/23/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/17 09:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %	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: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

SS07NWWall@6'
1710231-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/23/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710249	10/23/17	10/23/17	8015M	

Date Sampled: **10/23/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		105 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/23/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710248	10/23/17	10/23/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/17 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

SS09WestWall@6'
1710231-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/23/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710249	10/23/17	10/23/17	8015M	

Date Sampled: **10/23/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		106 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/23/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710248	10/23/17	10/23/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **10/23/17 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Summit Scientific

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

Project: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1710249 - EPA 3550A

Blank (1710249-BLK1)				Prepared: 10/23/17 Analyzed: 10/24/17							
C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	13.6		"	12.5		109	30-150				
LCS (1710249-BS1)				Prepared: 10/23/17 Analyzed: 10/24/17							
C10-C28 (DRO)	552	50	mg/kg	499		111	73-134				
Surrogate: <i>o</i> -Terphenyl	17.2		"	12.5		137	30-150				
Matrix Spike (1710249-MS1)				Source: 1710231-01		Prepared: 10/23/17 Analyzed: 10/24/17					
C10-C28 (DRO)	530	50	mg/kg	499	12.5	104	50-148				
Surrogate: <i>o</i> -Terphenyl	14.6		"	12.5		116	30-150				
Matrix Spike Dup (1710249-MSD1)				Source: 1710231-01		Prepared: 10/23/17 Analyzed: 10/24/17					
C10-C28 (DRO)	530	50	mg/kg	499	12.5	104	50-148	0.0153		20	
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106	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: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

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 1710248 - EPA 5030 Soil MS

Blank (1710248-BLK1)

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>21-167</i>		

LCS (1710248-BS1)

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg					66-138		
Benzene	0.0897	0.0020	"	0.100		89.7		58-130		
Toluene	0.0894	0.0050	"	0.100		89.4		61-134		
Ethylbenzene	0.0907	0.0050	"	0.0992		91.4		74-139		
m,p-Xylene	0.170	0.010	"	0.200		85.4		73-137		
o-Xylene	0.0836	0.0050	"	0.0980		85.3		73-141		
Xylenes (total)	0.254	0.010	"					0-200		
Gasoline Range Hydrocarbons	2.31	0.50	"					30-150		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0361</i>		<i>"</i>	<i>0.0400</i>		<i>90.3</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0452</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>21-167</i>		

Matrix Spike (1710248-MS1)

Source: 1710231-01

Prepared & Analyzed: 10/23/17

Naphthalene	ND	0.010	mg/kg		ND			10-158		
Benzene	0.0993	0.0020	"	0.100	ND	99.3		30-131		
Toluene	0.0980	0.0050	"	0.100	ND	98.0		30-134		
Ethylbenzene	0.111	0.0050	"	0.0992	ND	111		22-153		
m,p-Xylene	0.207	0.010	"	0.200	ND	103		10-159		
o-Xylene	0.100	0.0050	"	0.0980	ND	102		31-151		
Xylenes (total)	0.307	0.010	"		ND			30-160		
Gasoline Range Hydrocarbons	2.93	0.50	"		ND			30-160		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>		<i>21-167</i>		

Summit Scientific

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

Project: Matt #1
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/24/17 07:17

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 1710248 - EPA 5030 Soil MS

Matrix Spike Dup (1710248-MSD1)	Source: 1710231-01			Prepared & Analyzed: 10/23/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	108	10-158		42	
Benzene	0.108	0.0020	"	0.100	ND	108	30-131	8.78	34	
Toluene	0.108	0.0050	"	0.100	ND	108	30-134	9.31	30	
Ethylbenzene	0.120	0.0050	"	0.0992	ND	121	22-153	7.90	24	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	10-159	7.66	68	
o-Xylene	0.109	0.0050	"	0.0980	ND	112	31-151	8.60	38	
Xylenes (total)	0.332	0.010	"		ND		30-160	7.97	30	
Gasoline Range Hydrocarbons	3.24	0.50	"		ND		30-160	10.0	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>21-167</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: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/24/17 07:17

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

October 29, 2017

Mark Longhurst
PDC Energy
1775 Sherman St. STE. 3000
Denver, CO 80203
RE: Matt #1

Enclosed are the results of analyses for samples received by Summit Scientific on 10/27/17 17:08. 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: Matt #1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/29/17 12:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
pitGW01	1710305-01	Water	10/27/17 13:45	10/27/17 17:08

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: Matt #1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/29/17 12:36

Sample Receipt Checklist

S2 Work Order: 1710305
 Client: PDC Client Project ID: MATT #1
 Shipped Via: H.D. ON ICE (UPS, FedEx, Hand Delivered, Pick-up, etc.) Airbill #: _____
 Matrix (check all that apply): _____ Air _____ Soil/Solid Water _____ Other: _____ (Describe)

Cooler ID					
Temp (°C)	9.9				

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, HNO3, ect	<input checked="" type="checkbox"/>			HCL
If samples are acid preserved for metals, is the pH ≤ 2 ^{(1)?} Record the pH in Comments.			<input checked="" type="checkbox"/>	
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.				

Musip
 Custodian Printed Name

[Signature] 10-27-17
 Signature or Initials of Custodian

12:30
 Date/Time



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

Project: Matt #1
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/29/17 12:36

pitGW01
1710305-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/27/17 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	1.0	ug/l	1	1710270	10/28/17	10/28/17	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **10/27/17 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		<i>120 %</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>109 %</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: Matt #1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
10/29/17 12:36

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 1710270 - EPA 5030 Water MS

Blank (1710270-BLK1)

Prepared & Analyzed: 10/27/17

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	37-154			
Surrogate: Toluene-d8	13.4		"	13.3		101	45-149			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103	45-146			

LCS (1710270-BS1)

Prepared & Analyzed: 10/27/17

Benzene	44.2	1.0	ug/l	50.0		88.4	51-132			
Toluene	39.5	1.0	"	50.0		78.9	51-138			
Ethylbenzene	44.7	1.0	"	50.0		89.4	58-146			
m,p-Xylene	73.0	2.0	"	100		73.0	57-144			
o-Xylene	44.9	1.0	"	50.0		89.7	53-146			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109	37-154			
Surrogate: Toluene-d8	13.6		"	13.3		102	45-149			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.8	45-146			

Matrix Spike (1710270-MS1)

Source: 1710262-01

Prepared & Analyzed: 10/27/17

Benzene	49.4	1.0	ug/l	50.0	ND	98.8	34-141			
Toluene	45.3	1.0	"	50.0	ND	90.6	27-151			
Ethylbenzene	52.7	1.0	"	50.0	ND	105	29-160			
m,p-Xylene	86.6	2.0	"	100	ND	86.6	20-166			
o-Xylene	52.5	1.0	"	50.0	ND	105	33-159			
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.0	37-154			
Surrogate: Toluene-d8	13.8		"	13.3		103	45-149			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	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: Matt #1
 Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 10/29/17 12:36

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 1710270 - EPA 5030 Water MS

Matrix Spike Dup (1710270-MSD1)	Source: 1710262-01			Prepared & Analyzed: 10/27/17						
Benzene	49.1	1.0	ug/l	50.0	ND	98.3	34-141	0.568	32	
Toluene	44.1	1.0	"	50.0	ND	88.3	27-151	2.59	25	
Ethylbenzene	52.9	1.0	"	50.0	ND	106	29-160	0.379	50	
m,p-Xylene	85.5	2.0	"	100	ND	85.5	20-166	1.30	36	
o-Xylene	51.7	1.0	"	50.0	ND	103	33-159	1.52	26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>13.2</i>		<i>"</i>	<i>13.3</i>		<i>98.9</i>	<i>37-154</i>			
<i>Surrogate: Toluene-d8</i>	<i>13.5</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>100</i>	<i>45-146</i>			

Summit Scientific

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Reported:
10/29/17 12:36

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