

**TABLE 1**  
**FORMER PLATTE VALLEY 1 & 2 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(2)</sup> (mg/kg)	pH (units)	EC (mmhos/cm)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>23</b>	<b>500</b>	<b>6-9</b>	<b>&lt;4</b>
SS01 @ 5.5'	8/26/2019	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	7.90	0.510

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.
  2. TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.
- COGCC = Colorado Oil and Gas Conservation Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
GRO = Total volatile petroleum hydrocarbons - gasoline range organics  
DRO = Total extractable petroleum hydrocarbons - diesel range organics  
mg/kg = Milligrams per kilogram  
bgs = Below ground surface  
EC = Electrical conductivity  
mmhos/cm = millimhos per centimeter

**TABLE 2**  
**FORMER PLATTE VALLEY 1 & 2 TANK BATTERY**  
**VOC CONCENTRATIONS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (feet bgs)	Sample Location <sup>(1)</sup>	Field Measured VOC Concentration <sup>(2)</sup> (ppm)
SS01 @ 5.5'	8/26/2019	5.5	Base	0.8
SS02 @ 3'	8/26/2019	3	North Sidewall	2.9
SS03 @ 3'	8/26/2019	3	West Sidewall	1.3
SS04 @ 3'	8/26/2019	3	South Sidewall	2.2
SS05 @ 3'	8/26/2019	3	East Sidewall	2.1

**Notes:**

1. Refers to the sample location within the excavation area below the former produced water vessel.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

bgs = Below ground surface

ppm = Parts per million

= Sample submitted for laboratory analysis.

## **ATTACHMENT A**

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 03, 2019

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Platte Valley 1 & 2

Work Order # 1908313

Enclosed are the results of analyses for samples received by Summit Scientific on 08/26/19 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Platte Valley 1 & 2

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
09/03/19 12:24

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5.5'	1908313-01	Soil	08/26/19 10:38	08/26/19 17:30

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Summit Scientific

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# Summit Scientific

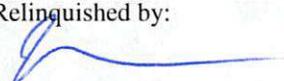
1908313

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

Page 1 of 1

Client: PDC  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Sampler Name: Jake McCarver

Project Manager: Mark Longhurst  
E-Mail: Mark.Longhurst@pdce.com  
Project Name: Platte Valley 1 & 2  
Project Number: \_\_\_\_\_

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)	GBTEXN (8260)	TPH - DRO	EC/pH	HOLD							
SS01 @ 5.5'	8/26/2019	10:38	1			X		X					X	X	X							
SS02 @ 3'	8/26/2019	10:41	1			X		X											X			
SS03 @ 3'	8/26/2019	10:44	1			X		X											X			
SS04 @ 3'	8/26/2019	10:47	1			X		X											X			
SS05 @ 3'	8/26/2019	10:50	1			X		X											X			
Relinquished by:  Date/Time: <u>8/26/19 11:54</u> <u>1730</u>				Received by:  Date/Time: <u>8/26/19 1730</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"/>						Hold SS02-SS05 please								
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: <u>3.6</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																		





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

Project: Platte Valley 1 & 2

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
09/03/19 12:24

**SS01@5.5'**  
**1908313-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1908349	08/27/19	08/28/19	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.0 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		94.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	1908350	08/27/19	08/28/19	EPA 8015M	

Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		96.9 %		30-150		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>7.90</b>			pH Units	1	1908359	08/28/19	08/28/19	EPA 9045D	

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

Project: Platte Valley 1 & 2

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
09/03/19 12:24

**SS01@5.5'**  
**1908313-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

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**Specific Conductance by EPA Method 120.1**

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Date Sampled: **08/26/19 10:38**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	<b>0.510</b>	0.0100		mmhos/cm	1	1908360	08/28/19	08/28/19	EPA 120.1	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Platte Valley 1 & 2

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
09/03/19 12:24

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1908349 - EPA 5030 Soil MS

##### Blank (1908349-BLK1)

Prepared: 08/27/19 Analyzed: 08/28/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Naphthalene	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173				
Surrogate: Toluene-d8	0.0385		"	0.0400		96.3	20-170				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167				

##### LCS (1908349-BS1)

Prepared & Analyzed: 08/27/19

Benzene	0.151	0.0020	mg/kg	0.150		100	70-130				
Toluene	0.151	0.0050	"	0.150		101	70-130				
Ethylbenzene	0.156	0.0050	"	0.150		104	70-130				
m,p-Xylene	0.309	0.010	"	0.300		103	70-130				
o-Xylene	0.154	0.0050	"	0.150		103	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	23-173				
Surrogate: Toluene-d8	0.0399		"	0.0400		99.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167				

##### Matrix Spike (1908349-MS1)

Source: 1908309-01

Prepared & Analyzed: 08/27/19

Benzene	0.157	0.0020	mg/kg	0.150	ND	105	70-130				
Toluene	0.157	0.0050	"	0.150	ND	105	70-130				
Ethylbenzene	0.164	0.0050	"	0.150	ND	110	70-130				
m,p-Xylene	0.328	0.010	"	0.300	ND	109	70-130				
o-Xylene	0.162	0.0050	"	0.150	ND	108	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.8	23-173				
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170				
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	21-167				

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 1775 Sherman St. STE. 3000  
 Denver CO, 80203

Project: Platte Valley 1 & 2

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 09/03/19 12:24

**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 1908349 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1908349-MSD1)</b>	<b>Source: 1908309-01</b>			<b>Prepared &amp; Analyzed: 08/27/19</b>						
Benzene	0.161	0.0020	mg/kg	0.150	ND	107	70-130	2.41	30	
Toluene	0.163	0.0050	"	0.150	ND	108	70-130	3.45	30	
Ethylbenzene	0.165	0.0050	"	0.150	ND	110	70-130	0.291	30	
m,p-Xylene	0.326	0.010	"	0.300	ND	109	70-130	0.560	30	
o-Xylene	0.162	0.0050	"	0.150	ND	108	70-130	0.389	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0373</i>		<i>"</i>	<i>0.0400</i>		<i>93.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>21-167</i>			

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Project: Platte Valley 1 & 2

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 Project Manager: Mark Longhurst

**Reported:**  
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**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 1908350 - EPA 3550A**

**Blank (1908350-BLK1)**

Prepared & Analyzed: 08/27/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1908350-BS1)**

Prepared & Analyzed: 08/27/19

C10-C28 (DRO) 471 50 mg/kg 500 94.3 70-130

**Matrix Spike (1908350-MS1)**

Source: 1908312-01

Prepared & Analyzed: 08/27/19

C10-C28 (DRO) 464 50 mg/kg 500 23.9 88.1 70-130

**Matrix Spike Dup (1908350-MSD1)**

Source: 1908312-01

Prepared & Analyzed: 08/27/19

C10-C28 (DRO) 447 50 mg/kg 500 23.9 84.6 70-130 3.88 20

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

Project: Platte Valley 1 & 2

Project Number: [none]  
 Project Manager: Mark Longhurst

**Reported:**  
 09/03/19 12:24

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

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

**Batch 1908359 - General Preparation**

**LCS (1908359-BS1)**

Prepared & Analyzed: 08/28/19

pH	9.45	pH Units	9.23	102	95-105
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**Duplicate (1908359-DUP1)**

Source: 1908286-01

Prepared & Analyzed: 08/28/19

pH	8.10	pH Units	8.07	0.371	20
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PDC Energy 1775 Sherman St. STE. 3000 Denver CO, 80203	Project: Platte Valley 1 & 2 Project Number: [none] Project Manager: Mark Longhurst	<b>Reported:</b> 09/03/19 12:24
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**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1908360 - General Preparation**

<b>Blank (1908360-BLK1)</b>		Prepared & Analyzed: 08/28/19									
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
<b>LCS (1908360-BS1)</b>		Prepared & Analyzed: 08/28/19									
Specific Conductance (EC)	0.762	0.0100	mmhos/cm	0.750	102	90-110					
<b>Duplicate (1908360-DUP1)</b>		<b>Source: 1908286-01</b>		Prepared & Analyzed: 08/28/19							
Specific Conductance (EC)	0.994	0.0100	mmhos/cm	0.989			0.454	20			

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

Project: Platte Valley 1 & 2

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
09/03/19 12:24

### 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