

**TABLE 1
FORMER ROY A SCHMIDT UNIT 1 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)	pH (units)	EC (mmhos/cm)
COGCC Table 910-1 Soil Standard (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500	6-9	<4
SS01 @ 5.5'	3/2/2020	5.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	8.44	0.0949

Notes:

- Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective May 1, 2018.
 - 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
 ft. = Feet
 bgs = Below ground surface
 EC = Electrical conductivity
 mmhos/cm = millimhos per centimeter

TABLE 2
FORMER ROY A SCHMIDT UNIT 1 TANK BATTERY
VOC CONCENTRATIONS SUMMARY TABLE

Sample ID	Date Sampled	Depth (ft. bgs)	Sample Location ⁽¹⁾	Field Measured VOC Concentration ⁽²⁾ (ppm)
SS01 @ 5.5'	3/2/2020	5.5	Base	4.6
SS02 @ 3'	3/2/2020	3	North Sidewall	0.6
SS03 @ 3'	3/2/2020	3	West Sidewall	0.7
SS04 @ 3'	3/2/2020	3	South Sidewall	1.4
SS05 @ 3'	3/2/2020	3	East Sidewall	1.1

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).

ft. = Feet

bgs = Below ground surface

ppm = Parts per million

= Sample submitted for laboratory analysis.

ATTACHMENT A

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 06, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Roy A Schmidt Unit 1

Work Order #2003012

Enclosed are the results of analyses for samples received by Summit Scientific on 03/02/20 18:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized 'M' and 'P'.

Muri Premer For Paul Shrewsbury
President



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

Project: Roy A Schmidt Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/06/20 11:45

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5.5'	2003012-01	Soil	03/02/20 10:00	03/02/20 18:00

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.

2003012

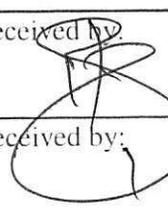
Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: PDC / Tasman	Project Manager: Mark Longhurst
Address: 6855 W 119th Ave	E-Mail: mark.longhurst@PDCE.com
City/State/Zip: Broomfield/ CO/ 80020	
Phone: 303-487-1228	Project Name: Roy A Schmidt Unit 1
Sampler Name: Cody Gressell	Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC	Hold	
1	SS01 @ 5.5'	3/2/20	1000	1			X			X			X	X	X			
2	SS02 @ 3'	I	1003	1			X			X						X		
3	SS03 @ 3'	I	1006	1			X			X						X		
4	SS04 @ 3'	I	1009	1			X			X						X		
5	SS05 @ 3'	I	1012	1			X			X						X		
6																		
7																		
8																		
9																		
10																		

Relinquished by: Cody Gressell	Date/Time: 3/2/20 1555	Received by: Tasman's Lock Box	Date/Time: 3/2/20 1555	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: 3.4 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 03/02/2020 1800	Received by: 	Date/Time: 03/02/2020 1800		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2003012

Client: PDC/TASMAN Client Project ID: Roy A Schmidt Unit 1

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

Matrix (check all that apply): _____ Air Soil/Solid _____ Water _____ Other: _____
(Describe)

Temp (°C)	3.4
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? 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⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?		✓		
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? 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⁾ ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):

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

TS
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

03/02/2020
Date/Time 1035



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

Project: Roy A Schmidt Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 11:45

SS01@5.5'
2003012-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	2003028	03/03/20	03/03/20	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: **03/02/20 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		100 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	2003029	"	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		92.5 %		30-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/02/20 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.44			pH Units	1	2003050	03/05/20	03/05/20	EPA 9045D	

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/06/20 11:45

SS01@5.5'
2003012-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1

Date Sampled: **03/02/20 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0949	0.0100	mmhos/cm	1	2003051	03/05/20	03/05/20	EPA 120.1	

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 11:45

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 2003028 - EPA 5030 Soil MS

Blank (2003028-BLK1)

Prepared: 03/03/20 Analyzed: 03/04/20

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	0.0394		"	0.0400		98.5	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	21-167			

LCS (2003028-BS1)

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0865	0.0020	mg/kg	0.100		86.5	70-130			
Toluene	0.0922	0.0050	"	0.100		92.2	70-130			
Ethylbenzene	0.0794	0.0050	"	0.100		79.4	70-130			
m,p-Xylene	0.162	0.010	"	0.200		80.8	70-130			
o-Xylene	0.0786	0.0050	"	0.100		78.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

Matrix Spike (2003028-MS1)

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0916	0.0020	mg/kg	0.100	ND	91.6	70-130			
Toluene	0.0905	0.0050	"	0.100	ND	90.5	70-130			
Ethylbenzene	0.0872	0.0050	"	0.100	ND	87.2	70-130			
m,p-Xylene	0.173	0.010	"	0.200	ND	86.3	70-130			
o-Xylene	0.0838	0.0050	"	0.100	ND	83.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/06/20 11:45

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 2003028 - EPA 5030 Soil MS

Matrix Spike Dup (2003028-MSD1)

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

Benzene	0.0956	0.0020	mg/kg	0.100	ND	95.6	70-130	4.17	30	
Toluene	0.0939	0.0050	"	0.100	ND	93.9	70-130	3.64	30	
Ethylbenzene	0.0890	0.0050	"	0.100	ND	89.0	70-130	1.98	30	
m,p-Xylene	0.172	0.010	"	0.200	ND	86.2	70-130	0.104	30	
o-Xylene	0.0837	0.0050	"	0.100	ND	83.7	70-130	0.107	30	
Surrogate: 1,2-Dichloroethane-d4	0.0426		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	21-167			

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/06/20 11:45

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 2003029 - EPA 3550A

Blank (2003029-BLK1)

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003029-BS1)

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) 595 50 mg/kg 500 119 70-130

Matrix Spike (2003029-MS1)

Source: 2003012-01

Prepared & Analyzed: 03/03/20

C10-C28 (DRO) 490 50 mg/kg 500 14.5 95.0 70-130

Matrix Spike Dup (2003029-MSD1)

Source: 2003012-01

Prepared: 03/03/20 Analyzed: 03/04/20

C10-C28 (DRO) 541 50 mg/kg 500 14.5 105 70-130 9.97 20

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/06/20 11:45

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 2003050 - General Preparation

LCS (2003050-BS1)

Prepared & Analyzed: 03/05/20

pH	9.18	pH Units	9.18	100	95-105
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Duplicate (2003050-DUP1)

Source: 2002311-01

Prepared & Analyzed: 03/05/20

pH	9.37	pH Units	9.36	0.107	20
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PDC Energy
 1775 Sherman St. STE. 3000
 Denver CO, 80203

Project: Roy A Schmidt Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 03/06/20 11:45

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 2003051 - General Preparation

Blank (2003051-BLK1)

Prepared & Analyzed: 03/05/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2003051-BS1)

Prepared & Analyzed: 03/05/20

Specific Conductance (EC) 0.749 0.0100 mmhos/cm 0.750 99.9 90-110

Duplicate (2003051-DUP1)

Source: 2002311-01

Prepared & Analyzed: 03/05/20

Specific Conductance (EC) 2.19 0.0100 mmhos/cm 2.17 0.665 20

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

Project: Roy A Schmidt Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 11:45

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