

TABLE 1  
FORMER STRONG 6-31 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 <sup>(2)</sup> (mg/kg)	pH (units)	EC (mmhos/cm)
COGCC Table 910-1 Soil Standard (mg/kg) <sup>(1)</sup>			0.17	85	100	175	23	500	6-9	<4
SS01 @ 5'	3/31/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	8.74	0.234

**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  
ft. = Feet  
bgs = Below ground surface  
EC = Electrical conductivity  
mmhos/cm = millimhos per centimeter

**TABLE 2**  
**FORMER STRONG 6-31 TANK BATTERY**  
**VOC CONCENTRATIONS SUMMARY TABLE**

Sample ID	Date Sampled	Depth (ft. bgs)	Sample Location <sup>(1)</sup>	Field Measured VOC Concentration <sup>(2)</sup> (ppm)
SS01 @ 5'	3/31/2020	5	Base	7.5
SS02 @ 3'	3/31/2020	3	North Sidewall	1.4
SS03 @ 3'	3/31/2020	3	West Sidewall	1.0
SS04 @ 3'	3/31/2020	3	South Sidewall	1.1
SS05 @ 3'	3/31/2020	3	East Sidewall	1.8

**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

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 07, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: Strong 6-31

Work Order #2003363

Enclosed are the results of analyses for samples received by Summit Scientific on 03/31/20 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: Strong 6-31

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5'	2003363-01	Soil	03/31/20 10:10	03/31/20 16:00

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.*

# Summit Scientific

2003363

2057 Table Mountain Drive ♦ Golden, Colorado 80601  
303.277.9310

Page 1 of 1

Client: PDCE / 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: Strong 6-31  
Sampler Name: Cody Cressell 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	\$260 BTEN	\$260B GBTEXN	\$015 DRO	pH/EC	Hold		
1	SS01 @ 5'	3/31/20	1010	1			X			X				X	X	X			
2	SS02 @ 3'		1013	1													X		
3	SS03 @ 3'		1016	1															
4	SS04 @ 3'		1019	1															
5	SS05 @ 3'		1022	1															
6																			
7																			
8																			
9																			
10																			

Relinquished by: Cody Cressell	Date/Time: 3/31/20 1117	Received by: Tasman's Lock Box Summit	Date/Time: 3/31/20 1117	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box Summit	Date/Time: 03/31/2020 1600	Received by: 	Date/Time: 03/31/2020 1600	Sample Integrity: Temperature Upon Receipt: 3.6	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

2003363

## Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: PDC / TASMAN

Client Project ID: STRONG 6 - 31

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

☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	3.6
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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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<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.

RZ

Custodian Printed Name or Initials

Signature of Custodian

3/31/20

Date/Time



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

Project: Strong 6-31  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

**SS01@5'**  
**2003363-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/31/20 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2004008	04/01/20	04/01/20	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: **03/31/20 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/31/20 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2004007	04/01/20	04/01/20	EPA 8015M	

Date Sampled: **03/31/20 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		84.3 %	30-150		"	"	"	"	

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

Date Sampled: **03/31/20 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.74		pH Units	1	2004016	04/02/20	04/02/20	EPA 9045D	

Summit Scientific

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

Project: Strong 6-31  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

**SS01@5'**  
**2003363-01 (Soil)**

**Summit Scientific**

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

**Specific Conductance by EPA Method 120.1**

Date Sampled: **03/31/20 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	<b>0.234</b>	0.0100		mmhos/cm	1	2004017	04/02/20	04/02/20	EPA 120.1	

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

Project: Strong 6-31

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

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

### Summit Scientific

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

#### Batch 2004008 - EPA 5030 Soil MS

##### Blank (2004008-BLK1)

Prepared & Analyzed: 04/01/20

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	0.0442		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0447		"	0.0400		112	21-167			

##### LCS (2004008-BS1)

Prepared & Analyzed: 04/01/20

Benzene	0.0704	0.0020	mg/kg	0.100		70.4	70-130			
Toluene	0.0778	0.0050	"	0.100		77.8	70-130			
Ethylbenzene	0.0880	0.0050	"	0.100		88.0	70-130			
m,p-Xylene	0.170	0.010	"	0.200		85.1	70-130			
o-Xylene	0.0856	0.0050	"	0.100		85.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0352		"	0.0400		88.0	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

##### Matrix Spike (2004008-MS1)

Source: 2003363-01

Prepared & Analyzed: 04/01/20

Benzene	0.0723	0.0020	mg/kg	0.100	ND	72.3	70-130			
Toluene	0.0737	0.0050	"	0.100	ND	73.7	70-130			
Ethylbenzene	0.0859	0.0050	"	0.100	ND	85.9	70-130			
m,p-Xylene	0.168	0.010	"	0.200	ND	84.2	70-130			
o-Xylene	0.0835	0.0050	"	0.100	ND	83.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0400		87.7	23-173			
Surrogate: Toluene-d8	0.0396		"	0.0400		98.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

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

Project: Strong 6-31  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

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

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

**Batch 2004008 - EPA 5030 Soil MS**

Matrix Spike Dup (2004008-MSD1)		Source: 2003363-01			Prepared & Analyzed: 04/01/20					
Benzene	0.0725	0.0020	mg/kg	0.100	ND	72.5	70-130	0.249	30	
Toluene	0.0771	0.0050	"	0.100	ND	77.1	70-130	4.49	30	
Ethylbenzene	0.0847	0.0050	"	0.100	ND	84.7	70-130	1.41	30	
m,p-Xylene	0.166	0.010	"	0.200	ND	82.9	70-130	1.54	30	
o-Xylene	0.0838	0.0050	"	0.100	ND	83.8	70-130	0.430	30	
Surrogate: 1,2-Dichloroethane-d4		0.0385	"	0.0400		96.2	23-173			
Surrogate: Toluene-d8		0.0404	"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene		0.0420	"	0.0400		105	21-167			

Summit Scientific

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

Project: Strong 6-31

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 2004007 - EPA 3550A**

**Blank (2004007-BLK1)**

Prepared & Analyzed: 04/01/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2004007-BS1)**

Prepared & Analyzed: 04/01/20

C10-C28 (DRO) 493 50 mg/kg 500 98.7 70-130

**Matrix Spike (2004007-MS1)**

Source: 2003363-01

Prepared & Analyzed: 04/01/20

C10-C28 (DRO) 435 50 mg/kg 500 38.1 79.3 70-130

**Matrix Spike Dup (2004007-MSD1)**

Source: 2003363-01

Prepared & Analyzed: 04/01/20

C10-C28 (DRO) 477 50 mg/kg 500 38.1 87.8 70-130 9.31 20

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

Project: Strong 6-31

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

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

**Summit Scientific**

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

**Batch 2004016 - General Preparation**

**LCS (2004016-BS1)**

Prepared & Analyzed: 04/02/20

pH	9.21	pH Units	9.18	100	95-105
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**Duplicate (2004016-DUP1)**

Source: 2003357-01

Prepared & Analyzed: 04/02/20

pH	8.76	pH Units	8.73	0.343	20
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Summit Scientific

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

Project: Strong 6-31

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

### Specific Conductance by EPA Method 120.1 - Quality Control

#### Summit Scientific

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

#### Batch 2004017 - General Preparation

##### Blank (2004017-BLK1)

Prepared & Analyzed: 04/02/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (2004017-BS1)

Prepared & Analyzed: 04/02/20

Specific Conductance (EC) 0.744 0.0100 mmhos/cm 0.750 99.3 90-110

##### Duplicate (2004017-DUP1)

Source: 2003357-01

Prepared & Analyzed: 04/02/20

Specific Conductance (EC) 0.288 0.0100 mmhos/cm 0.287 0.226 20

Summit Scientific

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

Project: Strong 6-31

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
04/07/20 10:22

### 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