

TABLE 1
FORMER FRENCH 5, 41-4, SITZMAN 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)
COGCC Table 910-1 Soil Standard (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500
S01 @ 9'	3/2/2020	9	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S02 @ 5'	3/2/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S03 @ 8'	3/2/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S04 @ 5'	3/2/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S05 @ 8'	3/2/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S06 @ 5'	3/2/2020	5	<0.0020	0.074	0.77	1.0	0.44	3,060
S07 @ 8'	3/2/2020	8	<0.0020	0.016	0.35	0.078	0.27	810
S08 @ 9'	3/3/2020	9	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S09 @ 5'	3/3/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S10 @ 8'	3/3/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S11 @ 5'	3/4/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S12 @ 8'	3/4/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S13 @ 9.5'	3/4/2020	9.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S14 @ 9.5'	3/5/2020	9.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S15 @ 5'	3/5/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S16 @ 8'	3/5/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S17 @ 5'	3/5/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S18 @ 8'	3/5/2020	8	0.016	<0.0050	0.0072	0.070	<0.010	6.3
S19 @ 5'	3/6/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	5.8
S20 @ 8'	3/6/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	4.9
S21 @ 10'	3/6/2020	10	<0.0020	<0.0050	0.0065	<0.010	0.017	0.93
S22 @ 9'	3/10/2020	9	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S23 @ 11'	3/10/2020	11	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S24 @ 5'	3/11/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S25 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S26 @ 10.5'	3/11/2020	10.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	69
S27 @ 5'	3/11/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S28 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	97
S29 @ 5'	3/11/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	15
S30 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S31 @ 10.5'	3/11/2020	10.5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S32 @ 5'	3/11/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S33 @ 8'	3/11/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	3.5
S34 @ 5'	3/12/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S35 @ 8'	3/12/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S36 @ 11'	3/12/2020	11	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S37 @ 11'	3/12/2020	11	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
S38 @ 5'	3/12/2020	5	<0.0020	<0.0050	<0.0050	<0.010	<0.010	13
S39 @ 8'	3/12/2020	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	15

TABLE 1
FORMER FRENCH 5, 41-4, SITZMAN 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)
COGCC Table 910-1 Soil Standard (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500

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

BOLD = Analytical result is in exceedance of COGCC soil standards.

TABLE 2
FORMER FRENCH 5, 41-4, SITZMAN 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 @ 4'	2/28/2020	4	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50	8.67	0.328

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 3
FORMER FRENCH 5, 41-4, SITZMAN 1 TANK BATTERY
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Depth to Water (ft. bgs) ⁽²⁾
COGCC Table 910-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	
GW01	3/12/2020	<1.0	<1.0	1.5	<2.0	~8

Notes:

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective May 1, 2018.

2. Depth to groundwater measured from ground surface.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L= Micrograms per liter

ft. = Feet

bgs = Below ground surface

(<) = Analytical result is less than the indicated laboratory reporting limit.

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

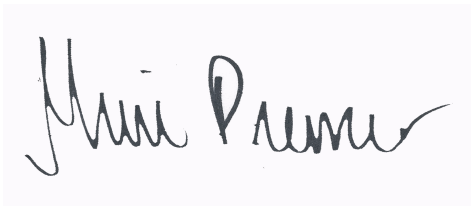
Denver, CO 80203

RE: French 41-4,5

Work Order #2002312

Enclosed are the results of analyses for samples received by Summit Scientific on 02/28/20 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 "Muri Premer", is displayed on a light purple rectangular background.

Muri Premer For Paul Shrewsbury
President



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

Project: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@4'	2002312-01	Soil	02/28/20 12:40	02/28/20 17:30

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

2002312

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

Page 1 of 1

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: French 41-4,5
Sampler Name: Cody Gessell 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 @ 4'	2/28/20	1240	1			X			X				X	X	X			
2	SS02 @ 3'	1	1243	1													X		
3	SS03 @ 3'	1	1246	1													X		
4	SS04 @ 3'	1	1249	1													X		
5	SS05 @ 3'	1	1252	1													X		
6																			
7																			
8																			
9																			
10																			

Relinquished by: Cody Gessell	Date/Time: 2/28/20 1430	Received by: Tasman's Lock Box	Date/Time: 2/28/20 1430	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> X 48 hours _____	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 6/28/2026 1430	Received by:	Date/Time: 6/28/2020 1730	Sample Integrity: Temperature Upon Receipt: 3.8	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Sample Receipt Checklist

S2 Work Order 2002312

Client: PDC/TASMAN Client Project ID: French 41-4.5

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

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

Temp (°C)	<u>3.8</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⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met 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 samples with holding times due within 48 hours sample 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"/>	
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.				

Custodian Printed Name or Initials

Signature of Custodian

Date/Time

1805 02/28/20



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

Project: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

SS01@4'
2002312-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/28/20 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003004	03/02/20	03/04/20	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: **02/28/20 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/28/20 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003003	03/02/20	03/04/20	EPA 8015M	

Date Sampled: **02/28/20 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/28/20 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
pH	8.67		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: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

SS01@4'
2002312-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1

Date Sampled: **02/28/20 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.328	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: French 41-4,5

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch 2003004 - EPA 5030 Soil MS

Blank (2003004-BLK1)

Prepared: 03/02/20 Analyzed: 03/03/20

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	0.0397		"	0.0400		99.2	23-173			
Surrogate: Toluene-d8	0.0389		"	0.0400		97.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

LCS (2003004-BS1)

Prepared: 03/02/20 Analyzed: 03/03/20

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.123	0.0050	"	0.100		123	70-130			
Ethylbenzene	0.102	0.0050	"	0.100		102	70-130			
m,p-Xylene	0.241	0.010	"	0.200		120	70-130			
o-Xylene	0.123	0.0050	"	0.100		123	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		96.9	21-167			

Matrix Spike (2003004-MS1)

Source: 2002305-01

Prepared: 03/02/20 Analyzed: 03/03/20

Benzene	0.112	0.0020	mg/kg	0.100	ND	112	70-130			
Toluene	0.125	0.0050	"	0.100	ND	125	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.248	0.010	"	0.200	ND	124	70-130			
o-Xylene	0.127	0.0050	"	0.100	ND	127	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	21-167			

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

Project: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

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 2003004 - EPA 5030 Soil MS

Matrix Spike Dup (2003004-MSD1)	Source: 2002305-01			Prepared: 03/02/20 Analyzed: 03/03/20						
Benzene	0.119	0.0020	mg/kg	0.100	ND	119	70-130	5.38	30	
Toluene	0.102	0.0050	"	0.100	ND	102	70-130	20.4	30	
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130	6.95	30	
m,p-Xylene	0.233	0.010	"	0.200	ND	116	70-130	6.20	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	18.0	30	
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	21-167			

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

Project: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

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 2003003 - EPA 3550A

Blank (2003003-BLK1)

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003003-BS1)

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 495 50 mg/kg 500 99.0 70-130

Matrix Spike (2003003-MS1)

Source: 2002307-01

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 549 50 mg/kg 500 14.0 107 70-130

Matrix Spike Dup (2003003-MSD1)

Source: 2002307-01

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 563 50 mg/kg 500 14.0 110 70-130 2.52 20

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

Project: French 41-4,5

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

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 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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Summit Scientific

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

Project: French 41-4,5
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 10:40

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

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: French 41-4,5

Project Number: [none]

Project Manager: Mark Longhurst

Reported:

03/06/20 10:40

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 03, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000


Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003005

Enclosed are the results of analyses for samples received by Summit Scientific on 03/02/20 18:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S01@9'	2003005-01	Soil	03/02/20 14:00	03/02/20 18:15
S02@5'	2003005-02	Soil	03/02/20 14:20	03/02/20 18:15
S03@8'	2003005-03	Soil	03/02/20 14:25	03/02/20 18:15
S04@5'	2003005-04	Soil	03/02/20 15:15	03/02/20 18:15
S05@8'	2003005-05	Soil	03/02/20 15:20	03/02/20 18:15
S06@5'	2003005-06	Soil	03/02/20 15:35	03/02/20 18:15
S07@8'	2003005-07	Soil	03/02/20 15:40	03/02/20 18:15

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

S₂

2003005

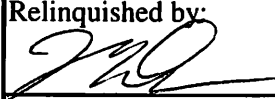
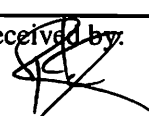
4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

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: ^{NO} French 1, 41-4, 5 French 5, 41-4, Sitzmen 1
 Sampler Name: Max Dahlgren 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		
1	So1 @ 9'	3/2/20	1400	2			X			X				X	X			
2	So2 @ 5'		1420															
3	So3 @ 8'		1425															
4	So4 @ 5'		1515															
5	So5 @ 8'		1520															
6	So6 @ 6'		1535															
7	So7 @ 8'		1540															
8																		
9																		
10																		

Relinquished by: 	Date/Time: 3/2/20 1715	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check)	Notes:
				Same Day <input checked="" type="checkbox"/> 72 hours	
				24 hours	
				48 hours	
Relinquished by: Tasman's Lock Box	Date/Time: 03/02/2020 1800	Received by: 	Date/Time: 03/02/2020 1800	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 3.4	
				Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order 2003005

Client: PDC/TAGMAN

Client Project ID: FRENCH S, 41-4, SITZMAN 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)	<u>3.4</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 samples with holding times due within 48 hours sample 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				
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.

RE
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1806 03/02/2020
Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S01@9'
2003005-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	03/02/20	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 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 14:00**

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

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S02@5'
2003005-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	03/02/20	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 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S03@8'
2003005-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	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 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 14:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S04@5'
2003005-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	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 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 15:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 15:15**

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

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S05@8'
2003005-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	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 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 15:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S06@5'
2003005-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	03/03/20	EPA 8260B	
Toluene	0.074	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.77	0.0050	"	"	"	"	"	"	
Xylenes (total)	1.0	0.010	"	"	"	"	"	"	
Naphthalene	0.44	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2300	5.0	"	10	"	"	"	"	E

Date Sampled: **03/02/20 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		374 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	760	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

S07@8'
2003005-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/02/20 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003023	03/02/20	03/03/20	EPA 8260B	
Toluene	0.016	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.35	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.078	0.010	"	"	"	"	"	"	
Naphthalene	0.27	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	810	5.0	"	10	"	"	"	"	E

Date Sampled: **03/02/20 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		214 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/02/20 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003022	03/02/20	03/03/20	EPA 8015M	

Date Sampled: **03/02/20 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		125 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

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 2003023 - EPA 5030 Soil MS

Blank (2003023-BLK1)

Prepared: 03/02/20 Analyzed: 03/03/20

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	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

LCS (2003023-BS1)

Prepared: 03/02/20 Analyzed: 03/03/20

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0934	0.0050	"	0.100		93.4	70-130			
m,p-Xylene	0.189	0.010	"	0.200		94.3	70-130			
o-Xylene	0.0916	0.0050	"	0.100		91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

Matrix Spike (2003023-MS1)

Source: 2003001-01

Prepared: 03/02/20 Analyzed: 03/03/20

Benzene	0.104	0.0020	mg/kg	0.100	0.00750	96.4	70-130			
Toluene	0.112	0.0050	"	0.100	0.0110	101	70-130			
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130			
m,p-Xylene	0.212	0.010	"	0.200	0.00642	103	70-130			
o-Xylene	0.142	0.0050	"	0.100	0.0432	98.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0400		99.4	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0436		"	0.0400		109	21-167			

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

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 2003023 - EPA 5030 Soil MS

Matrix Spike Dup (2003023-MSD1)

Source: 2003001-01

Prepared: 03/02/20 Analyzed: 03/03/20

Benzene	0.107	0.0020	mg/kg	0.100	0.00750	99.8	70-130	3.15	30	
Toluene	0.116	0.0050	"	0.100	0.0110	105	70-130	3.24	30	
Ethylbenzene	0.0901	0.0050	"	0.100	ND	90.1	70-130	22.6	30	
m,p-Xylene	0.215	0.010	"	0.200	0.00642	104	70-130	1.36	30	
o-Xylene	0.149	0.0050	"	0.100	0.0432	106	70-130	5.13	30	
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0376		"	0.0400		93.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

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 2003022 - EPA 3550A

Blank (2003022-BLK1)

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003022-BS1)

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 645 50 mg/kg 500 129 70-130

Matrix Spike (2003022-MS1)

Source: 2003001-01

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 613 50 mg/kg 500 20.9 118 70-130

Matrix Spike Dup (2003022-MSD1)

Source: 2003001-01

Prepared: 03/02/20 Analyzed: 03/03/20

C10-C28 (DRO) 590 50 mg/kg 500 20.9 114 70-130 3.77 20

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/03/20 12:13

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.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 18, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003015

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/20 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S08@9'	2003015-01	Soil	03/03/20 11:00	03/03/20 17:30
S09@5'	2003015-02	Soil	03/03/20 13:40	03/03/20 17:30
S10@8'	2003015-03	Soil	03/03/20 13:45	03/03/20 17:30

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

S₂

2003015

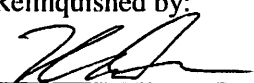
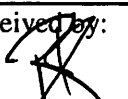
4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

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:	French S. 41-4, Sitzman 1
Sampler Name:	Max Dahlgren	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B CBTEXN	8015 DRO	pH / EC			
1	S08 @ 9'	3/3/20	1100	1			X			X				X	X				
2	S09 @ 5'		1340	1			X			X				X	X				
3	S10 @ 8'		1345	1			X			X				X	X				
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	3/3/20 1630	Tasman's Lock Box		Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	03/03/2020 1735		03/03/2020 1730	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	2.7	
				Samples Intact:	Yes	

Sample Receipt Checklist

S2 Work Order 2003015

Client: PDC / TASMAN

Client Project ID: FRENCH 5, 41-4, SITZMAN 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)	2.7
-----------	-----

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

RZ

Custodian Printed Name or Initials

Signature of Custodian

3/3/20

Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

S08@9'
2003015-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/20 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: **03/03/20 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/20 11:00**

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

Date Sampled: **03/03/20 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		109 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

S09@5'
2003015-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/20 13:40**

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: **03/03/20 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/20 13:40**

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: **03/03/20 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.7 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

S10@8'
2003015-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/03/20 13:45**

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: **03/03/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/03/20 13:45**

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: **03/03/20 13:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.1 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

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 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			

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

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 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			

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

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 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

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/18/20 13:29

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 05, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003026

Enclosed are the results of analyses for samples received by Summit Scientific on 03/04/20 17:54. 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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S11@5'	2003026-01	Soil	03/04/20 09:45	03/04/20 17:54
S12@8'	2003026-02	Soil	03/04/20 09:50	03/04/20 17:54
S13@9.5'	2003026-03	Soil	03/04/20 11:00	03/04/20 17:54

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

S₂

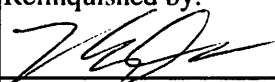
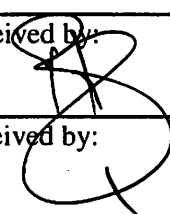
2003026

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

Page 1 of 1

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: French 5, 41-4, Sitzman 1
Sampler Name: Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC			
1	S1105'	3/4/20	945	1			X			X				X	X				
2	S1208'		950				X			X				X	X				
3	S1309.5'		1100				X			X				X	X				
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 3/4/20 1600	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check) 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"/>	Notes: on ice
Relinquished by: Tasman's Lock Box	Date/Time: 03/04/2020 1800	Received by: 	Date/Time: 03/04/2020 1800	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 7.7 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Sample Receipt Checklist

S2 Work Order 2003026

Client: PDC Client Project ID: French 5, 41-4, Sitzman

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

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

Temp (°C)	<u>7.9</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⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			on ice
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?	✓	✓		fast
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.

Custodian Printed Name or Initials

Signature of Custodian

Date/Time

3-4-20 1700



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

S11@5'
2003026-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/04/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	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: **03/04/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		95.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/04/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 09:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		121 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

S12@8'
2003026-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/04/20 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	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: **03/04/20 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		98.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.7 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/04/20 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 09:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

S13@9.5'
2003026-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/04/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003039	03/04/20	03/04/20	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: **03/04/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/04/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003037	"	03/04/20	EPA 8015M	

Date Sampled: **03/04/20 11:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		111 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

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 2003039 - EPA 5030 Soil MS

Blank (2003039-BLK1)

Prepared: 03/04/20 Analyzed: 03/05/20

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	0.0399		"	0.0400		99.8	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

LCS (2003039-BS1)

Prepared: 03/04/20 Analyzed: 03/05/20

Benzene	0.0967	0.0020	mg/kg	0.100		96.7	70-130			
Toluene	0.0961	0.0050	"	0.100		96.1	70-130			
Ethylbenzene	0.0871	0.0050	"	0.100		87.1	70-130			
m,p-Xylene	0.173	0.010	"	0.200		86.7	70-130			
o-Xylene	0.0845	0.0050	"	0.100		84.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	23-173			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	21-167			

Matrix Spike (2003039-MS1)

Source: 2003025-03

Prepared: 03/04/20 Analyzed: 03/05/20

Benzene	0.0891	0.0020	mg/kg	0.100	ND	89.1	70-130			
Toluene	0.0880	0.0050	"	0.100	ND	88.0	70-130			
Ethylbenzene	0.0829	0.0050	"	0.100	ND	82.9	70-130			
m,p-Xylene	0.161	0.010	"	0.200	ND	80.4	70-130			
o-Xylene	0.0773	0.0050	"	0.100	ND	77.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0392		"	0.0400		98.0	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0524		"	0.0400		131	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

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 2003039 - EPA 5030 Soil MS

Matrix Spike Dup (2003039-MSD1)		Source: 2003025-03			Prepared: 03/04/20 Analyzed: 03/05/20					
Benzene	0.110	0.0020	mg/kg	0.100	ND	110	70-130	21.0	30	
Toluene	0.107	0.0050	"	0.100	ND	107	70-130	19.1	30	
Ethylbenzene	0.0955	0.0050	"	0.100	ND	95.5	70-130	14.1	30	
m,p-Xylene	0.183	0.010	"	0.200	ND	91.3	70-130	12.7	30	
o-Xylene	0.0895	0.0050	"	0.100	ND	89.5	70-130	14.6	30	
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0575		"	0.0400		144	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

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 2003037 - EPA 3550A

Blank (2003037-BLK1)

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003037-BS1)

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 568 50 mg/kg 500 114 70-130

Matrix Spike (2003037-MS1)

Source: 2003025-03

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 636 50 mg/kg 500 ND 127 70-130

Matrix Spike Dup (2003037-MSD1)

Source: 2003025-03

Prepared & Analyzed: 03/04/20

C10-C28 (DRO) 608 50 mg/kg 500 ND 122 70-130 4.57 20

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/05/20 06:17

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

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: French 5,41-4, Sitzman 1

Work Order #2003057

Enclosed are the results of analyses for samples received by Summit Scientific on 03/05/20 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S14@9.5'	2003057-01	Soil	03/05/20 09:00	03/05/20 17:30
S15@5'	2003057-02	Soil	03/05/20 10:30	03/05/20 17:30
S16@8'	2003057-03	Soil	03/05/20 10:35	03/05/20 17:30
S17@5'	2003057-04	Soil	03/05/20 11:10	03/05/20 17:30
S18@8'	2003057-05	Soil	03/05/20 11:15	03/05/20 17:30

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

S₂

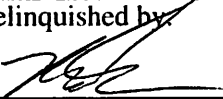
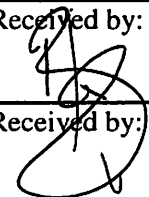
2003057

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

Page 1 of 1

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: French S 41-4, S. tzman 1
Sampler Name: Max Dagher Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC			
1	S14 @ 9.5'	3/5/20	900	2			X			X				X	X				
2	S15 @ 5'		1030				X			X				X	X				
3	S16 @ 8'		1035				X			X				X	X				
4	S17 @ 5'		1110				X			X				X	X				
5	S18 @ 8'		1115				X			X				X	X				
6																			
7																			
8																			
9																			
10																			

Relinquished by: 	Date/Time: 3/3/20 1630	Received by: Tasman's Lock Box	Date/Time:	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 03/05/2020 1730	Received by: 	Date/Time: 03/05/2020 1730	Sample Integrity:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Temperature Upon Receipt: 5.5 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order

2003057

Client: PDC / TASMAN

Client Project ID: FRENCH 5,41-4 SITZMAN 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)

5.5

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"/>	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<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):

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

RZ

Custodian Printed Name or Initials

Signature of Custodian

3/5/20

Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

S14@9.5'
2003057-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/06/20	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: **03/05/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		118 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/06/20	EPA 8015M	

Date Sampled: **03/05/20 09:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

S15@5'
2003057-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/06/20	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: **03/05/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/06/20	EPA 8015M	

Date Sampled: **03/05/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		102 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

S16@8'
2003057-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/06/20	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: **03/05/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		92.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/06/20	EPA 8015M	

Date Sampled: **03/05/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		101 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

S17@5'
2003057-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003067	03/05/20	03/06/20	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: **03/05/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/06/20	EPA 8015M	

Date Sampled: **03/05/20 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		129 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

S18@8'
2003057-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/05/20 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.016	0.0020	mg/kg	1	2003067	03/05/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0072	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.070	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.3	0.50	"	"	"	"	"	"	

Date Sampled: **03/05/20 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		90.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		121 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/05/20 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003068	03/05/20	03/06/20	EPA 8015M	

Date Sampled: **03/05/20 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

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 2003067 - EPA 5030 Soil MS

Blank (2003067-BLK1)

Prepared: 03/05/20 Analyzed: 03/06/20

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	0.0368		"	0.0400		92.1	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0452		"	0.0400		113	21-167			

LCS (2003067-BS1)

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	0.114	0.0020	mg/kg	0.100		114	70-130			
Toluene	0.118	0.0050	"	0.100		118	70-130			
Ethylbenzene	0.0807	0.0050	"	0.100		80.7	70-130			
m,p-Xylene	0.155	0.010	"	0.200		77.5	70-130			
o-Xylene	0.0754	0.0050	"	0.100		75.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0365		"	0.0400		91.4	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	21-167			

Matrix Spike (2003067-MS1)

Source: 2003054-01

Prepared: 03/05/20 Analyzed: 03/06/20

Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130			
Toluene	0.121	0.0050	"	0.100	ND	121	70-130			
Ethylbenzene	0.0817	0.0050	"	0.100	ND	81.7	70-130			
m,p-Xylene	0.158	0.010	"	0.200	ND	79.2	70-130			
o-Xylene	0.0763	0.0050	"	0.100	ND	76.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0375		"	0.0400		93.8	23-173			
Surrogate: Toluene-d8	0.0445		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0446		"	0.0400		112	21-167			

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

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 2003067 - EPA 5030 Soil MS

Matrix Spike Dup (2003067-MSD1)		Source: 2003054-01			Prepared: 03/05/20 Analyzed: 03/06/20					
Benzene	0.108	0.0020	mg/kg	0.100	ND	108	70-130	7.83	30	
Toluene	0.118	0.0050	"	0.100	ND	118	70-130	2.67	30	
Ethylbenzene	0.0878	0.0050	"	0.100	ND	87.8	70-130	7.26	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.7	70-130	7.88	30	
o-Xylene	0.0792	0.0050	"	0.100	ND	79.2	70-130	3.74	30	
Surrogate: 1,2-Dichloroethane-d4	0.0365		"	0.0400		91.3	23-173			
Surrogate: Toluene-d8	0.0428		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 2003068 - EPA 3550A

Blank (2003068-BLK1)

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003068-BS1)

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 571 50 mg/kg 500 114 70-130

Matrix Spike (2003068-MS1)

Source: 2003054-01

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 549 50 mg/kg 500 16.1 107 70-130

Matrix Spike Dup (2003068-MSD1)

Source: 2003054-01

Prepared: 03/05/20 Analyzed: 03/06/20

C10-C28 (DRO) 575 50 mg/kg 500 16.1 112 70-130 4.61 20

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: French 5,41-4, Sitzman 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/06/20 06:14

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 09, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003075

Enclosed are the results of analyses for samples received by Summit Scientific on 03/06/20 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S19@5'	2003075-01	Soil	03/06/20 09:30	03/06/20 14:30
S20@8'	2003075-02	Soil	03/06/20 09:35	03/06/20 14:30
S21@10'	2003075-03	Soil	03/06/20 10:30	03/06/20 14:30

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.

2003075

Summit Scientific



S₂

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

Page 1 of 1

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: French 5, 41-4, 5, 42, 43, 44
Sampler Name: Max Dahlgren Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions			
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC						
1	S19 @ 5'	3/6/20	930	1			X			X					X	X						
2	S20 @ 8'		935	1			X			X					X	X						
3	S21 @ 10'		1030	1			X			X					X	X						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 3/6/20 1430	Received by: Tasman's Lock Box 	Date/Time: 03-06-2020 14:30	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/>	Notes: ON ICE
Relinquished by: Tasman's Lock Box	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: 15.5 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2003075

Client: PDC/Tasman

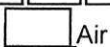
Client Project ID: French 5,41-4,Sitzman 1

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

Airbill #: _____



Matrix (check all that apply):



(Describe)

Temp (°C)

15.5

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On Ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same Day TAT
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

MP

Custodian Printed Name or Initials

Muri Presner

Signature of Custodian

3/6/20

Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

S19@5'
2003075-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	5.8	0.50	"	"	"	"	"	"	

Date Sampled: **03/06/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		98.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/06/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003087	"	03/06/20	EPA 8015M	

Date Sampled: **03/06/20 09:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

S20@8'
2003075-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/20 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.9	0.50	"	"	"	"	"	"	

Date Sampled: **03/06/20 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/06/20 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003087	"	03/06/20	EPA 8015M	

Date Sampled: **03/06/20 09:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		108 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

S21@10'
2003075-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003088	03/06/20	03/06/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0065	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.017	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.93	0.50	"	"	"	"	"	"	

Date Sampled: **03/06/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/06/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003087	"	03/06/20	EPA 8015M	

Date Sampled: **03/06/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

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 2003088 - EPA 5030 Soil MS

Blank (2003088-BLK1)

Prepared & Analyzed: 03/06/20

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	0.0370		"	0.0400		92.6	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

LCS (2003088-BS1)

Prepared & Analyzed: 03/06/20

Benzene	0.106	0.0020	mg/kg	0.100		106	70-130			
Toluene	0.105	0.0050	"	0.100		105	70-130			
Ethylbenzene	0.0878	0.0050	"	0.100		87.8	70-130			
m,p-Xylene	0.175	0.010	"	0.200		87.3	70-130			
o-Xylene	0.0849	0.0050	"	0.100		84.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Matrix Spike (2003088-MS1)

Source: 2003075-01

Prepared & Analyzed: 03/06/20

Benzene	0.113	0.0020	mg/kg	0.100	ND	113	70-130			
Toluene	0.112	0.0050	"	0.100	ND	112	70-130			
Ethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130			
m,p-Xylene	0.179	0.010	"	0.200	0.00378	87.6	70-130			
o-Xylene	0.0859	0.0050	"	0.100	ND	85.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0388		"	0.0400		97.0	23-173			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.6	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

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 2003088 - EPA 5030 Soil MS

Matrix Spike Dup (2003088-MSD1)		Source: 2003075-01			Prepared & Analyzed: 03/06/20					
Benzene	0.106	0.0020	mg/kg	0.100	ND	106	70-130	6.39	30	
Toluene	0.104	0.0050	"	0.100	ND	104	70-130	7.56	30	
Ethylbenzene	0.0898	0.0050	"	0.100	ND	89.8	70-130	1.46	30	
m,p-Xylene	0.178	0.010	"	0.200	0.00378	87.0	70-130	0.740	30	
o-Xylene	0.0867	0.0050	"	0.100	ND	86.7	70-130	0.938	30	
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.1	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

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 2003087 - EPA 3550A

Blank (2003087-BLK1)

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003087-BS1)

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 632 50 mg/kg 500 126 70-130

Matrix Spike (2003087-MS1)

Source: 2003075-01

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 627 50 mg/kg 500 16.8 122 70-130

Matrix Spike Dup (2003087-MSD1)

Source: 2003075-01

Prepared & Analyzed: 03/06/20

C10-C28 (DRO) 651 50 mg/kg 500 16.8 127 70-130 3.77 20

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/09/20 06:50

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 11, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003104

Enclosed are the results of analyses for samples received by Summit Scientific on 03/10/20 17:34. 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: French 5,41-4, Sitzman 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S22@9'	2003104-01	Soil	03/10/20 09:15	03/10/20 17:34
S23@11'	2003104-02	Soil	03/10/20 10:30	03/10/20 17:34

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

S₂



2003104

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

Page 1 of 1

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:	French 5, 41-4, Sitzman 1
Sampler Name:	Max Dahlgren	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested				Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC		
1	S22 @ 9'	3/10/20	915	1			X			X				X	X			
2	S23 @ 11'	3/10/20	1030	1			X			X				X	X			
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	3/10/20 1600	Tasman's Lock Box		Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	03/10/2020 1730		03/10/2020 1730	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	SS	
				Samples Intact:	Yes No	

Sample Receipt Checklist

S2 Work Order 2003104

Client: PDC / TASMAN

Client Project ID: FRENCH 5, 41-4 SITZMAN 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)	5.5
-----------	-----

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

RZ

Custodian Printed Name or Initials

Signature of Custodian

3/10/20

Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

S22@9'
2003104-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/20 09:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/10/20	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: **03/10/20 09:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/20 09:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 09:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		83.8 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

S23@11'
2003104-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003122	03/10/20	03/10/20	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: **03/10/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003121	03/10/20	03/10/20	EPA 8015M	

Date Sampled: **03/10/20 10:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.4 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

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 2003122 - EPA 5030 Soil MS

Blank (2003122-BLK1)

Prepared & Analyzed: 03/10/20

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	0.0379		"	0.0400		94.6	23-173			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0422		"	0.0400		106	21-167			

LCS (2003122-BS1)

Prepared & Analyzed: 03/10/20

Benzene	0.0911	0.0020	mg/kg	0.100		91.1	70-130			
Toluene	0.0951	0.0050	"	0.100		95.1	70-130			
Ethylbenzene	0.0779	0.0050	"	0.100		77.9	70-130			
m,p-Xylene	0.152	0.010	"	0.200		76.0	70-130			
o-Xylene	0.0704	0.0050	"	0.100		70.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

Matrix Spike (2003122-MS1)

Source: 2003102-01

Prepared & Analyzed: 03/10/20

Benzene	0.0909	0.0020	mg/kg	0.100	0.00360	87.3	70-130			
Toluene	0.0940	0.0050	"	0.100	0.00306	91.0	70-130			
Ethylbenzene	0.0785	0.0050	"	0.100	ND	78.5	70-130			
m,p-Xylene	0.154	0.010	"	0.200	0.00459	74.8	70-130			
o-Xylene	0.0713	0.0050	"	0.100	ND	71.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	23-173			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

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 2003122 - EPA 5030 Soil MS

Matrix Spike Dup (2003122-MSD1)	Source: 2003102-01			Prepared & Analyzed: 03/10/20						
Benzene	0.0928	0.0020	mg/kg	0.100	0.00360	89.2	70-130	1.99	30	
Toluene	0.0984	0.0050	"	0.100	0.00306	95.4	70-130	4.55	30	
Ethylbenzene	0.0794	0.0050	"	0.100	ND	79.4	70-130	1.10	30	
m,p-Xylene	0.155	0.010	"	0.200	0.00459	75.3	70-130	0.601	30	
o-Xylene	0.0722	0.0050	"	0.100	ND	72.2	70-130	1.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0419		"	0.0400		105	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

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 2003121 - EPA 3550A

Blank (2003121-BLK1)

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003121-BS1)

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 591 50 mg/kg 500 118 70-130

Matrix Spike (2003121-MS1)

Source: 2003102-01

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 474 50 mg/kg 500 7.18 93.3 70-130

Matrix Spike Dup (2003121-MSD1)

Source: 2003102-01

Prepared & Analyzed: 03/10/20

C10-C28 (DRO) 531 50 mg/kg 500 7.18 105 70-130 11.5 20

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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/11/20 06:43

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 12, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003122

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/20 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 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury

President



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S24@5'	2003122-01	Soil	03/11/20 08:45	03/11/20 17:30
S25@8'	2003122-02	Soil	03/11/20 08:50	03/11/20 17:30
S26@10.5'	2003122-03	Soil	03/11/20 08:55	03/11/20 17:30
S27@5'	2003122-04	Soil	03/11/20 09:40	03/11/20 17:30
S28@8'	2003122-05	Soil	03/11/20 09:45	03/11/20 17:30
S29@5'	2003122-06	Soil	03/11/20 10:05	03/11/20 17:30
S30@8'	2003122-07	Soil	03/11/20 10:10	03/11/20 17:30
S31@10.5'	2003122-08	Soil	03/11/20 12:00	03/11/20 17:30
S32@5'	2003122-09	Soil	03/11/20 14:10	03/11/20 17:30
S33@8'	2003122-10	Soil	03/11/20 14:15	03/11/20 17:30

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

S₂

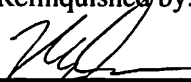

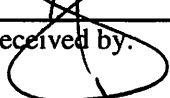
2003122

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

Page 1 of 1

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:	French 5, 41-4, S. 12man 1
Sampler Name:	Max Dahlgren	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC				
1	S24 @ 5'	3/11/20	845	1			x			x				x	x					
2	S25 @ 8'		850																	
3	S26 @ 10.5'		855																	
4	S27 @ 5'		940																	
5	S28 @ 8'		945																	
6	S29 @ 5'		1005																	
7	S30 @ 8'		1010																	
8	S31 @ 10.5'		1200																	
9	S32 @ 5'		1410																	
10	S33 @ 8'		1415																	

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	3/11/20 1610	Tasman's Lock Box		Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box	03/11/2020 1730		03/11/2020 1730	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt: 5.3		
				Samples Intact: Yes No		

Sample Receipt Checklist

S2 Work Order

2003122

Client: PDC / TASMAN

Client Project ID: FRENCH 5, 41-4, SITZMAN 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)

5.3

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"/>	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<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):

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

RZ

Custodian Printed Name or Initials

Signature of Custodian

3/11/20

Date/Time



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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S24@5'
2003122-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	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: **03/11/20 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/11/20	EPA 8015M	

Date Sampled: **03/11/20 08:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S25@8'
2003122-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 08:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	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: **03/11/20 08:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 08:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/11/20	EPA 8015M	

Date Sampled: **03/11/20 08:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.3 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S26@10.5'
2003122-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	19	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	50	50	mg/kg	1	2003147	03/11/20	03/11/20	EPA 8015M	

Date Sampled: **03/11/20 08:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S27@5'
2003122-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	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: **03/11/20 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/11/20	EPA 8015M	

Date Sampled: **03/11/20 09:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S28@8'
2003122-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	41	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		155 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	56	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 09:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		121 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S29@5'
2003122-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	15	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		117 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S30@8'
2003122-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	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: **03/11/20 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 10:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		120 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S31@10.5'
2003122-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	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: **03/11/20 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		111 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 12:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		104 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S32@5'
2003122-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/12/20	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: **03/11/20 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 14:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		95.3 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

S33@8'
2003122-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/11/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003145	03/11/20	03/11/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3.5	0.50	"	"	"	"	"	"	

Date Sampled: **03/11/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		113 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/11/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003147	03/11/20	03/12/20	EPA 8015M	

Date Sampled: **03/11/20 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.7 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

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 2003145 - EPA 5030 Soil MS

Blank (2003145-BLK1)

Prepared: 03/11/20 Analyzed: 03/12/20

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	0.0391		"	0.0400		97.8	23-173			
Surrogate: Toluene-d8	0.0423		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0440		"	0.0400		110	21-167			

LCS (2003145-BS1)

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0854	0.0020	mg/kg	0.100		85.4	70-130			
Toluene	0.0990	0.0050	"	0.100		99.0	70-130			
Ethylbenzene	0.0804	0.0050	"	0.100		80.4	70-130			
m,p-Xylene	0.161	0.010	"	0.200		80.4	70-130			
o-Xylene	0.0741	0.0050	"	0.100		74.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.6	23-173			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0423		"	0.0400		106	21-167			

Matrix Spike (2003145-MS1)

Source: 2003122-01

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0852	0.0020	mg/kg	0.100	ND	85.2	70-130			
Toluene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
Ethylbenzene	0.0802	0.0050	"	0.100	ND	80.2	70-130			
m,p-Xylene	0.160	0.010	"	0.200	ND	79.8	70-130			
o-Xylene	0.0744	0.0050	"	0.100	ND	74.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0433		"	0.0400		108	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

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 2003145 - EPA 5030 Soil MS

Matrix Spike Dup (2003145-MSD1)

Source: 2003122-01

Prepared: 03/11/20 Analyzed: 03/12/20

Benzene	0.0808	0.0020	mg/kg	0.100	ND	80.8	70-130	5.31	30	
Toluene	0.0982	0.0050	"	0.100	ND	98.2	70-130	1.58	30	
Ethylbenzene	0.0796	0.0050	"	0.100	ND	79.6	70-130	0.751	30	
m,p-Xylene	0.157	0.010	"	0.200	ND	78.6	70-130	1.52	30	
o-Xylene	0.0736	0.0050	"	0.100	ND	73.6	70-130	1.10	30	
Surrogate: 1,2-Dichloroethane-d4	0.0384		"	0.0400		96.1	23-173			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

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 2003147 - EPA 3550A

Blank (2003147-BLK1)

Prepared & Analyzed: 03/11/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003147-BS1)

Prepared & Analyzed: 03/11/20

C10-C28 (DRO) 569 50 mg/kg 500 114 70-130

Matrix Spike (2003147-MS1)

Source: 2003122-01

Prepared & Analyzed: 03/11/20

C10-C28 (DRO) 575 50 mg/kg 500 13.0 112 70-130

Matrix Spike Dup (2003147-MSD1)

Source: 2003122-01

Prepared & Analyzed: 03/11/20

C10-C28 (DRO) 588 50 mg/kg 500 13.0 115 70-130 2.27 20

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: French 5,41-4, Sitzman 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
03/12/20 08:07

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

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 13, 2020

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: French 5,41-4, Sitzman 1

Work Order #2003140

Enclosed are the results of analyses for samples received by Summit Scientific on 03/12/20 12:45. 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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S34@5'	2003140-01	Soil	03/12/20 08:15	03/12/20 12:45
S35@8'	2003140-02	Soil	03/12/20 08:20	03/12/20 12:45
S36@11'	2003140-03	Soil	03/12/20 09:00	03/12/20 12:45
S37@11'	2003140-04	Soil	03/12/20 09:15	03/12/20 12:45
S38@5'	2003140-05	Soil	03/12/20 10:30	03/12/20 12:45
S39@8'	2003140-06	Soil	03/12/20 10:35	03/12/20 12:45
GW01	2003140-07	Water	03/12/20 11:45	03/12/20 12:45

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

S₂

2003140


4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

Page 1 of 1

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:	French 5, 41-4, Sitzman 1
Sampler Name:	Max Dahlgren	Project Number:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH / EC			
1	S34 @ 5'	3/12/20	815	1			X			X				X	X				
2	S35 @ 8'		820	1															
3	S36 @ 11'		900	1															
4	S37 @ 11'		915	1															
5	S38 @ 5'		1030	1															
6	S39 @ 8'		1035	1															
7	GW01	3/12/20	1145	3	X				X				X						
8																			
9																			
10																			

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
	3/12/20 1245	Tasman's Lock Box	03-12-2020 12:45	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box				48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:		
				Temperature Upon Receipt:	38	
				Samples Intact:	Yes No	

Sample Receipt Checklist

S2 Work Order 2003140

Client: PDC/Tasman Client Project ID: French 5, 41-4, Sitzman 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)	<u>3.8</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⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same Day TAT
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<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) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

MP

Custodian Printed Name or Initials

Muri Premier

Signature of Custodian

3/12/20

Date/Time



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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S34@5'
2003140-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	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: **03/12/20 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		73.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		79.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 08:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.3 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S35@8'
2003140-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	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: **03/12/20 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		135 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		75.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		89.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 08:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		88.1 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S36@11'
2003140-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	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: **03/12/20 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		75.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		97.2 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S37@11'
2003140-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	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: **03/12/20 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		74.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 09:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		111 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S38@5'
2003140-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	13	0.50	"	"	"	"	"	"	

Date Sampled: **03/12/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		74.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		104 %	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: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

S39@8'
2003140-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	2003167	03/12/20	03/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	15	0.50	"	"	"	"	"	"	

Date Sampled: **03/12/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		77.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/12/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	2003168	03/12/20	03/12/20	EPA 8015M	

Date Sampled: **03/12/20 10:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		118 %	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: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

GW01
2003140-07 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/12/20 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	2003158	03/12/20	03/12/20	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	1.5	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	

Date Sampled: **03/12/20 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

Summit Scientific

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

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 2003158 - EPA 5030 Water MS

Blank (2003158-BLK1)

Prepared & Analyzed: 03/12/20

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.1		"	13.3		98.6	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

LCS (2003158-BS1)

Prepared & Analyzed: 03/12/20

Benzene	37.3	1.0	ug/l	33.3		112	51-132			
Toluene	41.2	1.0	"	33.3		124	51-138			
Ethylbenzene	41.3	1.0	"	33.3		124	58-146			
m,p-Xylene	75.2	2.0	"	66.7		113	57-144			
o-Xylene	39.3	1.0	"	33.3		118	53-146			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.5	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	12.6		"	13.3		94.9	21-167			

Matrix Spike (2003158-MS1)

Source: 2003127-01

Prepared & Analyzed: 03/12/20

Benzene	170	1.0	ug/l	33.3	96.9	218	34-141			QM-07
Toluene	41.2	1.0	"	33.3	ND	124	27-151			
Ethylbenzene	53.4	1.0	"	33.3	5.71	143	29-160			
m,p-Xylene	143	2.0	"	66.7	34.6	162	20-166			
o-Xylene	38.4	1.0	"	33.3	ND	115	33-159			
Surrogate: 1,2-Dichloroethane-d4	12.1		"	13.3		91.0	23-173			
Surrogate: Toluene-d8	14.2		"	13.3		107	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

Summit Scientific

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

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 2003158 - EPA 5030 Water MS

Matrix Spike Dup (2003158-MSD1)		Source: 2003127-01		Prepared: 03/12/20 Analyzed: 03/13/20						
Benzene	162	1.0	ug/l	33.3	96.9	195	34-141	4.69	30	QM-07
Toluene	38.8	1.0	"	33.3	ND	116	27-151	6.02	30	
Ethylbenzene	56.2	1.0	"	33.3	5.71	152	29-160	5.15	30	
m,p-Xylene	141	2.0	"	66.7	34.6	160	20-166	1.11	30	
o-Xylene	41.4	1.0	"	33.3	ND	124	33-159	7.55	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	11.0		"	13.3		82.8	23-173			
Surrogate: Toluene-d8	12.7		"	13.3		95.6	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

Batch 2003167 - EPA 5030 Soil MS

Blank (2003167-BLK1)		Prepared: 03/12/20 Analyzed: 03/13/20								
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	"							
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0471		"	0.0400		118	23-173			
Surrogate: Toluene-d8	0.0288		"	0.0400		71.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0323		"	0.0400		80.7	21-167			

LCS (2003167-BS1)		Prepared: 03/12/20 Analyzed: 03/13/20								
Benzene	0.0860	0.0020	mg/kg	0.100		86.0	70-130			
Toluene	0.0819	0.0050	"	0.100		81.9	70-130			
Ethylbenzene	0.0811	0.0050	"	0.100		81.1	70-130			
m,p-Xylene	0.140	0.010	"	0.200		70.1	70-130			
o-Xylene	0.0714	0.0050	"	0.100		71.4	70-130			
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.0	23-173			
Surrogate: Toluene-d8	0.0271		"	0.0400		67.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0312		"	0.0400		77.9	21-167			

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

Project: French 5,41-4, Sitzman 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

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 2003167 - EPA 5030 Soil MS

Matrix Spike (2003167-MS1)		Source: 2003139-01			Prepared: 03/12/20 Analyzed: 03/13/20					
Benzene	0.708	0.0020	mg/kg	0.100	3000000	NR	70-130			QM-07
Toluene	0.374	0.0050	"	0.100	3000000	NR	70-130			QM-07
Ethylbenzene	0.931	0.0050	"	0.100	3000000	NR	70-130			QM-07
m,p-Xylene	4.17	0.010	"	0.200	3000000	NR	70-130			QM-07
o-Xylene	0.324	0.0050	"	0.100	0.476	NR	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0806		"	0.0400		202	23-173			S-02
Surrogate: Toluene-d8	0.0319		"	0.0400		79.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.143		"	0.0400		358	21-167			S-02
Matrix Spike Dup (2003167-MSD1)		Source: 2003139-01			Prepared: 03/12/20 Analyzed: 03/13/20					
Benzene	0.816	0.0020	mg/kg	0.100	3000000	NR	70-130	14.2	30	QM-07
Toluene	0.401	0.0050	"	0.100	3000000	NR	70-130	6.93	30	QM-07
Ethylbenzene	0.990	0.0050	"	0.100	3000000	NR	70-130	6.18	30	QM-07
m,p-Xylene	4.07	0.010	"	0.200	3000000	NR	70-130	2.55	30	QM-07
o-Xylene	0.384	0.0050	"	0.100	0.476	NR	70-130	17.0	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0774		"	0.0400		193	23-173			S-02
Surrogate: Toluene-d8	0.0269		"	0.0400		67.3	20-170			
Surrogate: 4-Bromofluorobenzene	0.146		"	0.0400		364	21-167			S-02

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

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 2003168 - EPA 3550A

Blank (2003168-BLK1)

Prepared: 03/12/20 Analyzed: 03/13/20

C10-C28 (DRO) ND 50 mg/kg

LCS (2003168-BS1)

Prepared: 03/12/20 Analyzed: 03/13/20

C10-C28 (DRO) 631 50 mg/kg 500 126 70-130

Matrix Spike (2003168-MS1)

Source: 2003139-01

Prepared: 03/12/20 Analyzed: 03/13/20

C10-C28 (DRO) 678 50 mg/kg 500 46.3 126 70-130

Matrix Spike Dup (2003168-MSD1)

Source: 2003139-01

Prepared: 03/12/20 Analyzed: 03/13/20

C10-C28 (DRO) 662 50 mg/kg 500 46.3 123 70-130 2.28 20

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

Project: French 5,41-4, Sitzman 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
03/13/20 07:00

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.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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