

TABLE 1
FORMER LH MILLER UNIT 1 TANK BATTERY
SOIL ANALYTICAL RESULTS SUMMARY TABLE

Sample ID	Date Sampled	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH ⁽²⁾ (mg/kg)
COGCC Table 910-1 Soil Standard (mg/kg) ⁽¹⁾			0.17	85	100	175	23	500
SS01 @ 5'	1/6/2021	5	<0.0020	<0.0050	<0.0050	<0.010	0.019	57
SS02 @ 3'	1/8/2021	3	0.26	<0.0050	3.6	48	0.15	1,580
SS03 @ 10'	1/11/2021	10	<0.0020	<0.0050	<0.0050	0.038	<0.010	0.92
SS04 @ 3'	1/11/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	26
SS05 @ 9'	1/11/2021	9	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS06 @ 8'	1/12/2021	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS07 @ 3'	1/12/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS08 @ 7'	1/12/2021	7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS09 @ 3'	1/12/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	6.3
SS10 @ 7'	1/12/2021	7	<0.0020	<0.0050	<0.0050	<0.010	0.023	10
SS11 @ 3'	1/13/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS12 @ 7'	1/13/2021	7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS13 @ 3'	1/13/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS14 @ 7'	1/13/2021	7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS15 @ 3'	1/13/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS16 @ 7'	1/13/2021	7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	8.9
SS17 @ 3'	1/13/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS18 @ 7'	1/13/2021	7	<0.0020	<0.0050	<0.0050	<0.010	<0.010	4.9
SS19 @ 3'	1/13/2021	3	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS20 @ 7'	1/13/2021	7	<0.0020	<0.0050	0.0074	<0.010	0.043	15
SS21 @ 8'	1/13/2021	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50
SS22 @ 8'	1/13/2021	8	<0.0020	<0.0050	<0.0050	<0.010	<0.010	<50

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 LH MILLER UNIT 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	1/14/2021	<1.0	<1.0	<1.0	6.6	~ 6

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

January 07, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101038

Enclosed are the results of analyses for samples received by Summit Scientific on 01/06/21 17:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/07/21 14:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@5'	2101038-01	Soil	01/06/21 15:03	01/06/21 17:36

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.

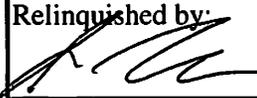
Summit Scientific 2101038

S₂

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

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

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	SS01 @ 5'	1/6/21	1503	1			X			X			X	X			
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: 	Date/Time: 1/6/21 1503	Received by: Tasman's Lock Box	Date/Time: 1/6/21 1503	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 2.1 Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 1-6-21 17:28	Received by: 	Date/Time: 1-6-21 17:28		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 2101038

Client: POC/HASMAN Client Project ID: LH MILLER UNIT 1

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

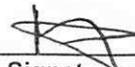
Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	<u>2.1</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? 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 checked="" type="checkbox"/>	<u>SAME DAY TAT</u>
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.				

Muri P.
Custodian Printed Name or Initials


Signature of Custodian

1-6-21
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/07/21 14:20

SS01@5'
2101038-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/06/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0048	01/06/21	01/06/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.019	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	57	0.50	"	"	"	"	"	"	

Date Sampled: **01/06/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		126 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/06/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0050	"	01/06/21	EPA 8015M	

Date Sampled: **01/06/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		124 %	30-150		"	"	"	"	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/07/21 14:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0048 - EPA 5030 Soil MS

Blank (BEA0048-BLK1)

Prepared & Analyzed: 01/06/21

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	0.0392		"	0.0400		98.1	23-173			
Surrogate: Toluene-d8	0.0377		"	0.0400		94.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	21-167			

LCS (BEA0048-BS1)

Prepared & Analyzed: 01/06/21

Benzene	0.0729	0.0020	mg/kg	0.100		72.9	70-130			
Toluene	0.0864	0.0050	"	0.100		86.4	70-130			
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130			
m,p-Xylene	0.218	0.010	"	0.200		109	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0378		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

Matrix Spike (BEA0048-MS1)

Source: 2101037-01

Prepared: 01/06/21 Analyzed: 01/07/21

Benzene	0.0730	0.0020	mg/kg	0.100	ND	73.0	70-130			
Toluene	0.0862	0.0050	"	0.100	ND	86.2	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.214	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0428		"	0.0400		107	21-167			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/07/21 14:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0048 - EPA 5030 Soil MS

Matrix Spike Dup (BEA0048-MSD1)	Source: 2101037-01			Prepared: 01/06/21 Analyzed: 01/07/21						
Benzene	0.0726	0.0020	mg/kg	0.100	ND	72.6	70-130	0.577	30	
Toluene	0.0867	0.0050	"	0.100	ND	86.7	70-130	0.555	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	2.43	30	
m,p-Xylene	0.217	0.010	"	0.200	ND	108	70-130	1.37	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 01/07/21 14:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control

Summit Scientific

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

Batch BEA0050 - EPA 3550A

Blank (BEA0050-BLK1)

Prepared & Analyzed: 01/06/21

C10-C28 (DRO) ND 50 mg/kg

LCS (BEA0050-BS1)

Prepared & Analyzed: 01/06/21

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

Matrix Spike (BEA0050-MS1)

Source: 2101037-01

Prepared & Analyzed: 01/06/21

C10-C28 (DRO) 521 50 mg/kg 500 16.0 101 70-130

Matrix Spike Dup (BEA0050-MSD1)

Source: 2101037-01

Prepared & Analyzed: 01/06/21

C10-C28 (DRO) 522 50 mg/kg 500 16.0 101 70-130 0.193 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: LH Miller Unit 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/07/21 14:20

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

January 10, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101065

Enclosed are the results of analyses for samples received by Summit Scientific on 01/08/21 17:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/10/21 23:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@3'	2101065-01	Soil	01/08/21 13:45	01/08/21 17:22

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.

Sample Receipt Checklist

S2 Work Order 2101065

Client: PDC/TASMAN Client Project ID: LH MILLER UNIT 1

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

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

Temp (°C)	<u>1.7</u>
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<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"/>	<u>SAME DAY TAT</u>
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.

Mimi P.
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1-8-21
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/10/21 23:02

SS02@3'
2101065-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/08/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	0.26	0.0020		mg/kg	1	BEA0076	01/08/21	01/08/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	3.6	0.50		"	100	"	"	"	"	
Xylenes (total)	48	1.0		"	"	"	"	"	"	
Naphthalene	0.15	0.010		"	1	"	"	"	"	
Gasoline Range Hydrocarbons	1300	50		"	100	"	"	"	"	

Date Sampled: **01/08/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: 1,2-Dichloroethane-d4</i>		58.3 %		23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %		20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		134 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/08/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	280	50		mg/kg	1	BEA0077	"	01/08/21	EPA 8015M	

Date Sampled: **01/08/21 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: o-Terphenyl</i>		118 %		30-150		"	"	"	"	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/10/21 23:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0076 - EPA 5030 Soil MS

Blank (BEA0076-BLK1)

Prepared & Analyzed: 01/08/21

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	0.0512		"	0.0400		128		23-173			
Surrogate: Toluene-d8	0.0461		"	0.0400		115		20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101		21-167			

LCS (BEA0076-BS1)

Prepared & Analyzed: 01/08/21

Benzene	0.0976	0.0020	mg/kg	0.100		97.6		70-130			
Toluene	0.0780	0.0050	"	0.100		78.0		70-130			
Ethylbenzene	0.0894	0.0050	"	0.100		89.4		70-130			
m,p-Xylene	0.167	0.010	"	0.200		83.7		70-130			
o-Xylene	0.0840	0.0050	"	0.100		84.0		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0410		"	0.0400		103		23-173			
Surrogate: Toluene-d8	0.0425		"	0.0400		106		20-170			
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2		21-167			

Matrix Spike (BEA0076-MS1)

Source: 2101056-01

Prepared & Analyzed: 01/08/21

Benzene	0.0760	0.0020	mg/kg	0.100	ND	76.0		70-130			
Toluene	0.0871	0.0050	"	0.100	ND	87.1		70-130			
Ethylbenzene	0.103	0.0050	"	0.100	ND	103		70-130			
m,p-Xylene	0.193	0.010	"	0.200	ND	96.4		70-130			
o-Xylene	0.0952	0.0050	"	0.100	ND	95.2		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103		23-173			
Surrogate: Toluene-d8	0.0407		"	0.0400		102		20-170			
Surrogate: 4-Bromofluorobenzene	0.0383		"	0.0400		95.7		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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/10/21 23:02

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0076 - EPA 5030 Soil MS

Matrix Spike Dup (BEA0076-MSD1)	Source: 2101056-01			Prepared & Analyzed: 01/08/21						
Benzene	0.0776	0.0020	mg/kg	0.100	ND	77.6	70-130	2.11	30	
Toluene	0.0883	0.0050	"	0.100	ND	88.3	70-130	1.40	30	
Ethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130	2.51	30	
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	70-130	2.84	30	
o-Xylene	0.0974	0.0050	"	0.100	ND	97.4	70-130	2.18	30	
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.6	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/10/21 23:02

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEA0077 - EPA 3550A

Blank (BEA0077-BLK1)

Prepared & Analyzed: 01/08/21

C10-C28 (DRO) ND 50 mg/kg

LCS (BEA0077-BS1)

Prepared & Analyzed: 01/08/21

C10-C28 (DRO) 518 50 mg/kg 500 104 70-130

Matrix Spike (BEA0077-MS1)

Source: 2101056-01

Prepared & Analyzed: 01/08/21

C10-C28 (DRO) 498 50 mg/kg 500 58.4 88.0 70-130

Matrix Spike Dup (BEA0077-MSD1)

Source: 2101056-01

Prepared & Analyzed: 01/08/21

C10-C28 (DRO) 506 50 mg/kg 500 58.4 89.5 70-130 1.56 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: LH Miller Unit 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/10/21 23:02

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

January 11, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101079

Enclosed are the results of analyses for samples received by Summit Scientific on 01/11/21 17:36. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@10'	2101079-01	Soil	01/11/21 11:30	01/11/21 17:36
SS04@3'	2101079-02	Soil	01/11/21 15:00	01/11/21 17:36
SS05@9'	2101079-03	Soil	01/11/21 15:03	01/11/21 17:36

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.

Sample Receipt Checklist

S2 Work Order 2101079

Client: POCKTASMAN Client Project ID: LIT MILLER UNIT

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>47</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"/>	<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.				

TC
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

01/11/2020
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

SS03@10'
2101079-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/21 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEA0096	01/11/21	01/11/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.038	0.010		"	"	"	"	"	"	
Naphthalene	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.92	0.50		"	"	"	"	"	"	

Date Sampled: **01/11/21 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		108 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/21 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEA0097	01/11/21	01/11/21	EPA 8015M	

Date Sampled: **01/11/21 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		128 %		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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

SS04@3'
2101079-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0096	01/11/21	01/11/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	26	0.50	"	"	"	"	"	"	

Date Sampled: **01/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		74.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0097	01/11/21	01/11/21	EPA 8015M	

Date Sampled: **01/11/21 15:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		134 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

SS05@9'
2101079-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/11/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0096	01/11/21	01/11/21	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: **01/11/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/11/21 15:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0097	01/11/21	01/11/21	EPA 8015M	

Date Sampled: **01/11/21 15:03**

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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0096 - EPA 5030 Soil MS

Blank (BEA0096-BLK1)

Prepared & Analyzed: 01/11/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		96.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0475		"	0.0400		119	21-167			

LCS (BEA0096-BS1)

Prepared & Analyzed: 01/11/21

Benzene	0.0968	0.0020	mg/kg	0.100		96.8	70-130			
Toluene	0.0963	0.0050	"	0.100		96.3	70-130			
Ethylbenzene	0.108	0.0050	"	0.100		108	70-130			
m,p-Xylene	0.219	0.010	"	0.200		110	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0474		"	0.0400		118	21-167			

Matrix Spike (BEA0096-MS1)

Source: 2101076-01

Prepared & Analyzed: 01/11/21

Benzene	0.0956	0.0020	mg/kg	0.100	ND	95.6	70-130			
Toluene	0.0953	0.0050	"	0.100	ND	95.3	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.216	0.010	"	0.200	0.00399	106	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0472		"	0.0400		118	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: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 01/11/21 22:41

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0096 - EPA 5030 Soil MS

Matrix Spike Dup (BEA0096-MSD1)	Source: 2101076-01			Prepared & Analyzed: 01/11/21						
Benzene	0.0956	0.0020	mg/kg	0.100	ND	95.6	70-130	0.00	30	
Toluene	0.0953	0.0050	"	0.100	ND	95.3	70-130	0.00	30	
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	0.00	30	
m,p-Xylene	0.216	0.010	"	0.200	0.00399	106	70-130	0.00	30	
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130	0.00	30	
Surrogate: 1,2-Dichloroethane-d4	0.0440		"	0.0400		110	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0472		"	0.0400		118	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/11/21 22:41

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEA0097 - EPA 3550A

Blank (BEA0097-BLK1)

Prepared & Analyzed: 01/11/21

C10-C28 (DRO) ND 50 mg/kg

LCS (BEA0097-BS1)

Prepared & Analyzed: 01/11/21

C10-C28 (DRO) 435 50 mg/kg 500 86.9 70-130

Matrix Spike (BEA0097-MS1)

Source: 2101076-01

Prepared & Analyzed: 01/11/21

C10-C28 (DRO) 566 50 mg/kg 500 13.3 111 70-130

Matrix Spike Dup (BEA0097-MSD1)

Source: 2101076-01

Prepared & Analyzed: 01/11/21

C10-C28 (DRO) 542 50 mg/kg 500 13.3 106 70-130 4.41 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: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/11/21 22:41

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

January 14, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101092

Enclosed are the results of analyses for samples received by Summit Scientific on 01/12/21 14:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury
President



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

Project: LH Miller Unit 1
Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS06@8'	2101092-01	Soil	01/12/21 09:20	01/12/21 14:45
SS07@3'	2101092-02	Soil	01/12/21 09:25	01/12/21 14:45
SS08@7'	2101092-03	Soil	01/12/21 09:30	01/12/21 14:45
SS09@3'	2101092-04	Soil	01/12/21 13:00	01/12/21 14:45
SS10@7'	2101092-05	Soil	01/12/21 13:05	01/12/21 14:45

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

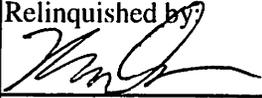
210109Z

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: LH Miller Unit I
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	
1	SS06 @ 8'	1/12/21	920	1			X			X			X	X		
2	SS07 @ 3'		925										X	X		
3	SS08 @ 7'		930													
4	SS09 @ 3'		1300													
5	SS10 @ 7'		1305										X	X		
6																
7																
8																
9																
10																

Relinquished by: 	Date/Time: 1/12/21 1445	Received by: 	Date/Time: 1-12-21 14:45	Turn Around Time (Check) Same Day <input checked="" type="checkbox"/> 72 hours ___ 24 hours ___ Standard ___ 48 hours ___ Sample Integrity: Temperature Upon Receipt: 3.4 Samples Intact: <input checked="" type="checkbox"/> Yes No	Notes:
Relinquished by: Fasman's Lock Box	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

Sample Receipt Checklist

S2 Work Order 9T 2101092

Client: PDC/Tasman Client Project ID: LH Miller Unit 1

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

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

Temp (°C)	3.4
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?	✓			Same Day TAT
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.

MP
Custodian Printed Name or Initials

Muri Premer
Signature of Custodian

1/12/21
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 12:00

SS06@8'
2101092-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/21 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0104	01/12/21	01/12/21	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: **01/12/21 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/21 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0103	01/12/21	01/12/21	EPA 8015M	

Date Sampled: **01/12/21 09:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

SS07@3'
2101092-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/21 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0104	01/12/21	01/12/21	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: **01/12/21 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/21 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0103	01/12/21	01/12/21	EPA 8015M	

Date Sampled: **01/12/21 09:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		125 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

SS08@7'
2101092-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/21 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0104	01/12/21	01/12/21	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: **01/12/21 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		119 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/21 09:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0103	01/12/21	01/12/21	EPA 8015M	

Date Sampled: **01/12/21 09:30**

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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

SS09@3'
2101092-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0104	01/12/21	01/12/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.3	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0103	01/12/21	01/12/21	EPA 8015M	

Date Sampled: **01/12/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		131 %	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 12:00

SS10@7'
2101092-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/12/21 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0104	01/12/21	01/12/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.023	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	10	0.50	"	"	"	"	"	"	

Date Sampled: **01/12/21 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		159 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/12/21 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0103	01/12/21	01/12/21	EPA 8015M	

Date Sampled: **01/12/21 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		130 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0104 - EPA 5030 Soil MS

Blank (BEA0104-BLK1)

Prepared & Analyzed: 01/12/21

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	0.0413		"	0.0400		103		23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9		20-170			
Surrogate: 4-Bromofluorobenzene	0.0466		"	0.0400		117		21-167			

LCS (BEA0104-BS1)

Prepared & Analyzed: 01/12/21

Benzene	0.0913	0.0020	mg/kg	0.100		91.3		70-130			
Toluene	0.0933	0.0050	"	0.100		93.3		70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103		70-130			
m,p-Xylene	0.210	0.010	"	0.200		105		70-130			
o-Xylene	0.106	0.0050	"	0.100		106		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110		23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8		20-170			
Surrogate: 4-Bromofluorobenzene	0.0477		"	0.0400		119		21-167			

Matrix Spike (BEA0104-MS1)

Source: 2101081-03

Prepared & Analyzed: 01/12/21

Benzene	0.0912	0.0020	mg/kg	0.100	ND	91.2		70-130			
Toluene	0.0941	0.0050	"	0.100	0.00306	91.1		70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106		70-130			
m,p-Xylene	0.213	0.010	"	0.200	0.00741	103		70-130			
o-Xylene	0.108	0.0050	"	0.100	0.00312	105		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0438		"	0.0400		110		23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4		20-170			
Surrogate: 4-Bromofluorobenzene	0.0475		"	0.0400		119		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: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 01/14/21 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0104 - EPA 5030 Soil MS

Matrix Spike Dup (BEA0104-MSD1)	Source: 2101081-03			Prepared: 01/12/21 Analyzed: 01/13/21						
Benzene	0.0895	0.0020	mg/kg	0.100	ND	89.5	70-130	1.83	30	
Toluene	0.0935	0.0050	"	0.100	0.00306	90.4	70-130	0.704	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	1.23	30	
m,p-Xylene	0.211	0.010	"	0.200	0.00741	102	70-130	0.934	30	
o-Xylene	0.108	0.0050	"	0.100	0.00312	105	70-130	0.278	30	
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0400		114	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0485		"	0.0400		121	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 12:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEA0103 - EPA 3550A

Blank (BEA0103-BLK1)

Prepared & Analyzed: 01/12/21

C10-C28 (DRO) ND 50 mg/kg

LCS (BEA0103-BS1)

Prepared & Analyzed: 01/12/21

C10-C28 (DRO) 557 50 mg/kg 500 111 70-130

Matrix Spike (BEA0103-MS1)

Source: 2101081-03

Prepared & Analyzed: 01/12/21

C10-C28 (DRO) 506 50 mg/kg 500 36.8 93.9 70-130

Matrix Spike Dup (BEA0103-MSD1)

Source: 2101081-03

Prepared & Analyzed: 01/12/21

C10-C28 (DRO) 551 50 mg/kg 500 36.8 103 70-130 8.36 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: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/14/21 12:00

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

January 14, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101106

Enclosed are the results of analyses for samples received by Summit Scientific on 01/13/21 17:53. 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', written in a cursive style.

Paul Shrewsbury

President



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS11@3'	2101106-01	Soil	01/13/21 13:00	01/13/21 17:53
SS12@7'	2101106-02	Soil	01/13/21 13:03	01/13/21 17:53
SS13@3'	2101106-03	Soil	01/13/21 13:06	01/13/21 17:53
SS14@7'	2101106-04	Soil	01/13/21 13:09	01/13/21 17:53
SS15@3'	2101106-05	Soil	01/13/21 13:12	01/13/21 17:53
SS16@7'	2101106-06	Soil	01/13/21 13:15	01/13/21 17:53
SS17@3'	2101106-07	Soil	01/13/21 13:18	01/13/21 17:53
SS18@7'	2101106-08	Soil	01/13/21 13:21	01/13/21 17:53
SS19@3'	2101106-09	Soil	01/13/21 13:24	01/13/21 17:53
SS20@7'	2101106-10	Soil	01/13/21 13:27	01/13/21 17:53
SS21@8'	2101106-11	Soil	01/13/21 14:00	01/13/21 17:53
SS22@8'	2101106-12	Soil	01/13/21 14:03	01/13/21 17:53

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.

- 2101106.1

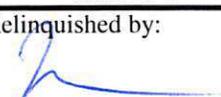
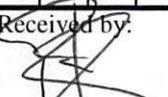
Summit Scientific

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

Page 1 of 2

Client: PDC/Tasman
 Address: _____
 City/State/Zip: _____
 Phone: _____ Fax: _____
 Sampler Name: Jake McCarver

Project Manager: Mark Longhurst
 E-Mail: Mark.Longhurst@pdce.com
 Project Name: LH Miller Unit 1
 Project Number: _____

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEXN	TPH - DRO												
SS11 @ 3'	1/13/2020	1:00	1			X			X				X	X											
SS12 @ 7'	1/13/2020	1:03	1			X			X				X	X											
SS13 @ 3'	1/13/2020	1:06	1			X			X				X	X											
SS14 @ 7'	1/13/2020	1:09	1			X			X				X	X											
SS15 @ 3'	1/13/2020	1:12	1			X			X				X	X											
SS16 @ 7'	1/13/2020	1:15	1			X			X				X	X											
SS17 @ 3'	1/13/2020	1:18	1			X			X				X	X											
SS18 @ 7'	1/13/2020	1:21	1			X			X				X	X											
SS19 @ 3'	1/13/2020	1:24	1			X			X				X	X											
SS20 @ 7'	1/13/2020	1:27	1			X			X				X	X											
Relinquished by: 				Date/Time: <u>1/13/20</u> <u>1545</u>				Received by: 				Date/Time: <u>01/13/2020</u> <u>1545</u>				Turn Around Time (Check)									
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>									
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				24 Hours <input type="checkbox"/> Standard <input type="checkbox"/>									
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				48 Hours <input type="checkbox"/>								Sample Integrity: Temperature Upon Receipt: <u>3.6</u>	
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									

2101106.2

Summit Scientific

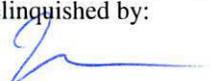
741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 2 of 2

Client: PDC/Tasman
Address: _____
City/State/Zip: _____
Phone: _____ Fax: _____
Sampler Name: Jake McCarver

Project Manager: Mark Longhurst
E-Mail: Mark.Longhurst@pdce.com
Project Name: LH Miller Unit 1
Project Number: _____

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:						Special Instructions					
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	GBTEXN	TPH - DRO										
SS21 @ 8'	1/13/2020	2:00	1			X		X					X	X									
SS22 @ 8'	1/13/2020	2:03	1			X		X					X	X									

Relinquished by: 	Date/Time: <u>1/13/20</u> <u>1545</u>	Received by: 	Date/Time: <u>01/13/2021</u> <u>1545</u>	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"/>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>3.6</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	

Sample Receipt Checklist

S2 Work Order 2101106

Client: POC/TASMAN Client Project ID: LH Miller Unit 1

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

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

Temp (°C)	<u>3.6</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.

TAS
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

01/13/2021
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 06:14

SS11@3'
2101106-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		131 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS12@7'
2101106-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		80.1 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS13@3'
2101106-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:06**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		139 %	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 06:14

SS14@7'
2101106-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		135 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS15@3'
2101106-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		138 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS16@7'
2101106-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	8.9	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/21 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		130 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		145 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		136 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS17@3'
2101106-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:18**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		138 %	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 06:14

SS18@7'
2101106-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		117 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		133 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS19@3'
2101106-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:24**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		138 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS20@7'
2101106-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0074	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	0.043	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	15	0.50	"	"	"	"	"	"	

Date Sampled: **01/13/21 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 13:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		138 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS21@8'
2101106-11 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		120 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		140 %	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: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

SS22@8'
2101106-12 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/13/21 14:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BEA0128	01/13/21	01/13/21	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: **01/13/21 14:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/13/21 14:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BEA0126	01/13/21	01/13/21	EPA 8015M	

Date Sampled: **01/13/21 14:03**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		138 %	30-150		"	"	"	"	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0128 - EPA 5030 Soil MS

Blank (BEA0128-BLK1)

Prepared & Analyzed: 01/13/21

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	0.0410		"	0.0400		103	23-173				
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170				
Surrogate: 4-Bromofluorobenzene	0.0476		"	0.0400		119	21-167				

LCS (BEA0128-BS1)

Prepared: 01/13/21 Analyzed: 01/14/21

Benzene	0.0869	0.0020	mg/kg	0.100		86.9	70-130				
Toluene	0.0944	0.0050	"	0.100		94.4	70-130				
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130				
m,p-Xylene	0.218	0.010	"	0.200		109	70-130				
o-Xylene	0.112	0.0050	"	0.100		112	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173				
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	20-170				
Surrogate: 4-Bromofluorobenzene	0.0483		"	0.0400		121	21-167				

Matrix Spike (BEA0128-MS1)

Source: 2101107-01

Prepared: 01/13/21 Analyzed: 01/14/21

Benzene	0.0944	0.0020	mg/kg	0.100	0.00777	86.6	70-130				
Toluene	0.0954	0.0050	"	0.100	ND	95.4	70-130				
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130				
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130				
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0431		"	0.0400		108	23-173				
Surrogate: Toluene-d8	0.0401		"	0.0400		100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0477		"	0.0400		119	21-167				

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 06:14

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0128 - EPA 5030 Soil MS

Matrix Spike Dup (BEA0128-MSD1)	Source: 2101107-01			Prepared: 01/13/21 Analyzed: 01/14/21						
Benzene	0.0946	0.0020	mg/kg	0.100	0.00777	86.8	70-130	0.254	30	
Toluene	0.0948	0.0050	"	0.100	ND	94.8	70-130	0.599	30	
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130	0.145	30	
m,p-Xylene	0.208	0.010	"	0.200	ND	104	70-130	0.303	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	0.286	30	
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0486		"	0.0400		122	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: LH Miller Unit 1

Project Number: [none]
 Project Manager: Mark Longhurst

Reported:
 01/14/21 06:14

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEA0126 - EPA 3550A

Blank (BEA0126-BLK1)

Prepared: 01/13/21 Analyzed: 01/14/21

C10-C28 (DRO) ND 50 mg/kg

LCS (BEA0126-BS1)

Prepared: 01/13/21 Analyzed: 01/14/21

C10-C28 (DRO) 563 50 mg/kg 500 113 70-130

Matrix Spike (BEA0126-MS1)

Source: 2101105-01

Prepared: 01/13/21 Analyzed: 01/14/21

C10-C28 (DRO) 648 50 mg/kg 500 429 43.8 70-130 QM-07

Matrix Spike Dup (BEA0126-MSD1)

Source: 2101105-01

Prepared: 01/13/21 Analyzed: 01/14/21

C10-C28 (DRO) 706 50 mg/kg 500 429 55.3 70-130 8.48 20 QM-07

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/14/21 06:14

Notes and Definitions

- 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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 15, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: LH Miller Unit 1

Work Order #2101116

Enclosed are the results of analyses for samples received by Summit Scientific on 01/14/21 13:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Paul Shrewsbury
President



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
01/15/21 16:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2101116-01	Water	01/14/21 12:20	01/14/21 13:00

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

S₂

2101116

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: LH Miller Unit 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	G-WO	1/14/21	1220	3	X				X				X					
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by:  Date/Time: 1/14/21 13:00	Received by:  Tasman's Lock Box Date/Time: 1-14-21 13:00	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:	
Relinquished by: Date/Time:	Received by: Date/Time:	Temperature Upon Receipt: 5.6 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order 210116

Client: PDC/Tasman Client Project ID: LH Miller Unit 1

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

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

Temp (°C)	5.6
-----------	-----

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 DayTAT
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 checked="" type="checkbox"/>	<input 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 Premer
Signature of Custodian

1/14/21
Date/Time



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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 01/15/21 16:35

GW01
2101116-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/14/21 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BEA0148	01/14/21	01/14/21	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	6.6	2.0	"	"	"	"	"	"	

Date Sampled: **01/14/21 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/15/21 16:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0148 - EPA 5030 Water MS

Blank (BEA0148-BLK1)

Prepared & Analyzed: 01/14/21

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103		23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101		20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100		21-167			

LCS (BEA0148-BS1)

Prepared & Analyzed: 01/14/21

Benzene	27.2	1.0	ug/l	33.3		81.7		51-132			
Toluene	31.9	1.0	"	33.3		95.6		51-138			
Ethylbenzene	35.7	1.0	"	33.3		107		58-146			
m,p-Xylene	71.0	2.0	"	66.7		106		57-144			
o-Xylene	36.0	1.0	"	33.3		108		53-146			
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		98.9		23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5		20-170			
Surrogate: 4-Bromofluorobenzene	13.6		"	13.3		102		21-167			

Matrix Spike (BEA0148-MS1)

Source: 2101117-01

Prepared & Analyzed: 01/14/21

Benzene	27.2	1.0	ug/l	33.3	ND	81.5		34-141			
Toluene	31.8	1.0	"	33.3	ND	95.4		27-151			
Ethylbenzene	36.0	1.0	"	33.3	ND	108		29-160			
m,p-Xylene	71.2	2.0	"	66.7	ND	107		20-166			
o-Xylene	36.5	1.0	"	33.3	ND	110		33-159			
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.1		23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.6		20-170			
Surrogate: 4-Bromofluorobenzene	13.3		"	13.3		99.5		21-167			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]

Project Manager: Mark Longhurst

Reported:
 01/15/21 16:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEA0148 - EPA 5030 Water MS

Matrix Spike Dup (BEA0148-MSD1)	Source: 2101117-01			Prepared & Analyzed: 01/14/21						
Benzene	26.9	1.0	ug/l	33.3	ND	80.6	34-141	1.11	30	
Toluene	32.0	1.0	"	33.3	ND	95.9	27-151	0.596	30	
Ethylbenzene	35.3	1.0	"	33.3	ND	106	29-160	1.91	30	
m,p-Xylene	70.3	2.0	"	66.7	ND	105	20-166	1.30	30	
o-Xylene	36.1	1.0	"	33.3	ND	108	33-159	1.24	30	
Surrogate: 1,2-Dichloroethane-d4	13.6		"	13.3		102	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

Summit Scientific

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

Project: LH Miller Unit 1

Project Number: [none]
Project Manager: Mark Longhurst

Reported:
01/15/21 16:35

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