

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 01, 2022

Karen Olson

PDC Energy

1775 Sherman St. STE. 3000

Denver, CO 80203

RE: DWR Permit #137465

Work Order #2202304

Enclosed are the results of analyses for samples received by Summit Scientific on 02/23/22 14:00. 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: DWR Permit #137465

Project Number: AFE #EX-000335
Project Manager: Karen Olson

Reported:
03/01/22 10:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EFF-022322-1052	2202304-01	Water	02/23/22 10:52	02/23/22 14:00
INF-022322-1153	2202304-02	Water	02/23/22 11:53	02/23/22 14:00

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

2202309

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

Client: PDC Energy / Tasman Geosciences Project Manager: Karen Olson
Address: 6855 W. 119th Ave. E-Mail: Karen.Olson@pdce.com; chamlin@tasman-geo.com
City/State/Zip: Broomfield / CO / 80020
Phone: 303-487-1228 Project Name: DWR Permit # 137465
Sampler Name: Boyce Goldade Project Number: AFE # EX-000335

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	RSK-175 (Dissolved Gases)	DIC	Gas Composition	DIC Methane (Carbon)	DIC Methane (Hydrogen)			
1	EFF-022322-1052	2/23/22	1052	3			X		X					X						4th containers for INF-022322-1153 Sample is Isoflask S/N FOA11
2	INF-022322-1153			3			X		X					X						
3	INF-022322-1153	2/23/22	1153	3			X		X					X						
4	INF-022322-1153	2/23/22	1153	1				X	X						X	X	X			DIC Analysis by Isoflask
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: <u>Boyce J Goldade</u>	Date/Time: <u>2/23/22 @ 1400</u>	Received by: <u>[Signature]</u>	Date/Time: <u>22322 1400</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: <u>1.6</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Notes: Please provide data in PDF and COGCC EDD formats. COGCC Facility No.: 765500
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2202304

Client: ADCenergy/Tasman Client Project ID: DWR Permit # 137465

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

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

Temp (°C) 16

Thermometer ID: G86A9201901378

	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 if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ILS</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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>24 hrs</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 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, etc.	<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.

[Signature]
Custodian Printed Name or Initials

2.23.22
Date/Time



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

Project: DWR Permit #137465
 Project Number: AFE #EX-000335
 Project Manager: Karen Olson

Reported:
 03/01/22 10:34

EFF-022322-1052
2202304-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **02/23/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	4.6	1.0	mg/L	100	BFB0287	02/24/22	02/24/22	RSK-175 mod	
Ethane	1.8	1.0	"	"	"	"	"	"	
Propane	1.7	1.0	"	"	"	"	"	"	

Date Sampled: **02/23/22 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: Ethene</i>		126 %	70-130		"	"	"	"	

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: DWR Permit #137465
 Project Number: AFE #EX-000335
 Project Manager: Karen Olson

Reported:
 03/01/22 10:34

INF-022322-1153
2202304-02 (Water)

Summit Scientific

Dissolved Gases by RSK-175

Date Sampled: **02/23/22 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Methane	9.6	1.0		mg/L	100	BFB0287	02/24/22	02/24/22	RSK-175 mod	
Ethane	2.5	1.0		"	"	"	"	"	"	
Propane	2.9	0.10		"	10	"	"	"	"	

Date Sampled: **02/23/22 11:53**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<i>Surrogate: Ethene</i>		170 %			70-130	"	"	"	"	S-04

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: DWR Permit #137465

Project Number: AFE #EX-000335
Project Manager: Karen Olson

Reported:
03/01/22 10:34

Dissolved Gases by RSK-175 - Quality Control

Summit Scientific

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

Batch BFB0287 - GC

Blank (BFB0287-BLK1)

Prepared & Analyzed: 02/24/22

Methane	ND	0.010	mg/L								
Ethane	ND	0.010	"								
Propane	ND	0.010	"								
<i>Surrogate: Ethene</i>	<i>0.0450</i>		<i>"</i>	<i>0.0364</i>		<i>124</i>	<i>70-130</i>				

LCS (BFB0287-BS1)

Prepared & Analyzed: 02/24/22

Methane	0.039	0.010	mg/L	0.0428		90.3	70-130				
Ethane	0.090	0.010	"	0.0798		113	70-130				
Propane	0.16	0.010	"	0.139		114	70-130				
<i>Surrogate: Ethene</i>	<i>0.0942</i>		<i>"</i>	<i>0.0728</i>		<i>129</i>	<i>70-130</i>				

Duplicate (BFB0287-DUP1)

Source: 2202304-01

Prepared & Analyzed: 02/24/22

Methane	2.7	1.0	mg/L		4.6			50.5	30		QR-03
Ethane	0.84	1.0	"		1.8			71.8	30		QR-03
Propane	0.59	1.0	"		1.7			95.6	30		QR-03
<i>Surrogate: Ethene</i>	<i>0.0451</i>		<i>"</i>	<i>0.0364</i>		<i>124</i>	<i>70-130</i>				

Matrix Spike (BFB0287-MS1)

Source: 2202304-01

Prepared & Analyzed: 02/24/22

Methane	4.5	1.0	mg/L	0.0428	4.6	NR	70-130				QM-05
Ethane	2.5	1.0	"	0.0798	1.8	852	70-130				QM-05
Propane	2.6	1.0	"	0.139	1.7	670	70-130				QM-05
<i>Surrogate: Ethene</i>	<i>0.150</i>		<i>"</i>	<i>0.0728</i>		<i>206</i>	<i>70-130</i>				<i>QM-05</i>

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: DWR Permit #137465

Project Number: AFE #EX-000335
Project Manager: Karen Olson

Reported:
03/01/22 10:34

Notes and Definitions

- S-04 A sample matrix effect prevented complete surrogate recovery.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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