

**TABLE 1**  
**FORMER RICE 22-1, 2 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**ORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1, 2, 4-TMB (mg/kg)	1, 3, 5-TMB (mg/kg)	Naphthalene (mg/kg)	TPH <sup>(4)</sup> (mg/kg)
<b>Residential SSL <sup>(1,2)</sup></b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>30</b>	<b>27</b>	<b>2</b>	<b>500</b>
<b>Protection of Groundwater SSL <sup>(1,2,3)</sup></b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0081</b>	<b>0.0087</b>	<b>0.0038</b>	<b>500</b>
SEP01-DL-E @ 2.5'	11/4/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SEP01-DL-B @ 4'	11/4/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
PWV01-B @ 4'	11/4/2021	4 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
PWV01-E @ 2.5'	11/4/2021	2.5 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
SEP01- FL @ 3'	11/4/2021	3 ft. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50
AST01 @ 0-6"	11/4/2021	0-6 in. bgs	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	150

**Notes:**

- Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.
  - Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
  - SSLs are applicable if a pathway for communication with groundwater is present.
  - Value calculated by adding TVPH-GRO, TEPH-DRO, and TEPH-ORO concentrations.
- COGCC = Colorado Oil and Gas Conservation Commission  
(<) = Analytical result is less than the indicated laboratory reporting limit.  
TVPH-GRO = Total volatile petroleum hydrocarbons - gasoline range organics  
TEPH-DRO = Total extractable petroleum hydrocarbons - diesel range organics  
TEPH-ORO = Total extractable petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
TMB = Trimethylbenzene  
ft. = Feet  
bgs = Below ground surface

**TABLE 2**  
**FORMER RICE 22-1, 2 TANK BATTERY**  
**SOIL ANALYTICAL RESULTS SUMMARY TABLE**  
**INORGANIC COMPOUNDS**

Sample ID	Date Sampled	Depth	pH (units)	EC (mmhos/cm)	SAR (units)	Boron (mg/L)
<b>Soil Suitability for Reclamation Standard <sup>(1)</sup></b>			<b>6-8.3</b>	<b>&lt;4</b>	<b>&lt;6</b>	<b>2</b>
SEP01-DL-E @ 2.5'	11/4/2021	2.5 ft. bgs	8.26	0.352	0.224	0.172
SEP01-DL-B @ 4'	11/4/2021	4 ft. bgs	8.22	0.400	0.577	0.184
PWV01-B @ 4'	11/4/2021	4 ft. bgs	8.10	1.81	5.40	0.515
PWV01-E @ 2.5'	11/4/2021	2.5 ft. bgs	8.02	0.190	0.110	0.0689

**Notes:**

1. Compounds referenced from the COGCC 2 CCR 404-1, Table 915-1, effective January 15, 2021.

COGCC = Colorado Oil and Gas Conservation Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

ft. = Feet

bgs = Below ground surface

**TABLE 3**  
**FORMER RICE 22-1, 2 TANK BATTERY**  
**FIELD DATA SUMMARY TABLE**

Sample ID	Date Sampled	Depth	GPS Data <sup>(1)</sup> Latitude / Longitude		PDOP Value	VOC Concentration <sup>(2)</sup> (ppm)
PWV01-W @ 2.5'	11/4/2021	2.5 ft. bgs	40.388233	-104.545163	1	0.2
WDL01 @ 2.5'	11/4/2021	2.5 ft. bgs	40.388227	-104.545208	1	0.6
AST01 @ 0-6"	11/4/2021	0-6 in. bgs	40.388273	-104.545196	1.2	0.3
SEP01-FL @ 3'	11/4/2021	3 ft. bgs	40.388072	-104.545185	1.2	2.4
SEP01-DL @ 3'	11/4/2021	3 ft. bgs	NC	NC	NC	10.4
MH01 @ 0-6"	11/4/2021	0-6 in. bgs	40.388066	-104.545278	1	0.5
ECD01 @ 0-6"	11/4/2021	0-6 in. bgs	40.388030	-104.545174	1	0.8
BKG01 @ 2.5'	11/4/2021	2.5 ft. bgs	40.387987	-104.545190	0.9	0.4
BKG01 @ 3'	11/4/2021	3 ft. bgs	40.387987	-104.545190	0.9	0.2
BKG01 @ 4'	11/4/2021	4 ft. bgs	40.387987	-104.545190	0.9	0.4
SEP01-DL-E @ 2.5'	11/4/2021	2.5 ft. bgs	40.388087	-104.545190	1	7.8
PWV01-B @ 4'	11/4/2021	4 ft. bgs	40.388239	-104.545185	1	0.3
PWV01-S @ 2.5'	11/4/2021	2.5 ft. bgs	40.388214	-104.545189	1	0.2
PWV01-N @ 2.5'	11/4/2021	2.5 ft. bgs	40.388254	-104.545181	1	0.2
PWV01-E @ 2.5'	11/4/2021	2.5 ft. bgs	40.388243	-104.545217	1	0.5
SEP01-DL-B @ 4'	11/4/2021	4 ft. bgs	40.388083	-104.545199	0.9	6.8
SEP01-DL-N @ 2.5'	11/4/2021	2.5 ft. bgs	40.388103	-104.545199	0.9	5.8
SEP01-DL-W @ 2.5'	11/4/2021	2.5 ft. bgs	40.388087	-104.545211	0.9	7.7
SEP01-DL-S @ 2.5'	11/4/2021	2.5 ft. bgs	40.388078	-104.545204	0.9	6.2

**Notes:**

1. Global Positioning System (GPS) data is provided in decimal degrees using World Geodetic System (WGS) 84 UTM Zone 13

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

in. = Inches

bgs = Below ground surface

NC = Data not collected

## Attachment A

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403


303.277.9310

November 09, 2021

Mark Longhurst  
PDC Energy  
1775 Sherman St. STE. 3000  
Denver, CO 80203  
RE: Rice 22-1,2 Tank Battery  
Work Order #2111088

Enclosed are the results of analyses for samples received by Summit Scientific on 11/04/21 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premier For Paul Shrewsbury  
President



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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-DL-B@4'	2111088-01	Soil	11/04/21 14:00	11/04/21 16:30
SEP01-DL-E@2.5'	2111088-05	Soil	11/04/21 14:08	11/04/21 16:30

Summit Scientific

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

2111088

Page 1 of 1

Project Name: Rice 22-1, 2 Tank Battery

Project Number: N/A

					Preservative				Matrix				Analysis Requested								Special Instructions											
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 8260B	TPH - (C6 - C36)	1,2,4 & 1,3,5-TMB	Boron - HWS	pH, EC, SAR	On Hold													pH, EC, SAR by saturated paste	
1	SEP01-DL-B @ 4'	11/4/21	1400	3			X			X			X	X	X	X	X	X														
2	SEP01-DL-N @ 2.5'	↓	1402	3			X			X									X													
3	SEP01-DL-W @ 2.5'		1404	3			X			X										X												
4	SEP01-DL-S @ 2.5'		1406	3			X			X											X											
5	SEP01-DL-E @ 2.5		1408	3			X			X				X	X	X	X	X														
6																																
7																																
8																																
9																																
10																																

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time	(Check)	Notes:
Mike Connolly	11/4/21 1630	Tasman's Lock Box	11/4/21 1630	Same Day	X 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours	Standard	
Tasman's Lock Box		[Signature]	11/4/21 1630	48 hours		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	Temperature Upon Receipt:	5.1
				Samples Intact:	Yes No	

S<sub>2</sub>

2111088

## Sample Receipt Checklist

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

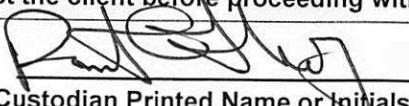
Client: BC/TasmanClient Project ID: Rice 22-1.2 Tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>5.1</u>
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Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? 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 ICE</u>
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input 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>Same day</u>
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? 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):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.
  
 Custodian Printed Name or Initials

11.4.21  
 Date/Time





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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-B@4'**  
**2111088-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0123	11/04/21	11/04/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0124	11/04/21	11/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 14:00**

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

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-B@4'**  
**2111088-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.184	0.0100	mg/L	1	BEK0126	11/05/21	11/08/21	EPA 6020B	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	37.1	0.0540	mg/L dry	1	BEK0096	11/04/21	11/08/21	EPA 6020B	
Magnesium	17.4	0.0540	"	"	"	"	"	"	
Sodium	17.0	0.0540	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.577	0.00100	units	1	BEK0197	11/09/21	11/09/21	Calculation	

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

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6		%	1	BEK0135	11/05/21	11/05/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.400	0.0100	mmhos/cm	1	BEK0138	11/05/21	11/05/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-B@4'**  
**2111088-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **11/04/21 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>8.22</b>			pH Units	1	BEK0137	11/05/21	11/05/21	EPA 9045D	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-E@2.5'**  
**2111088-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0123	11/04/21	11/04/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0124	11/04/21	11/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		126 %	30-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-E@2.5'**  
**2111088-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.172	0.0100	mg/L	1	BEK0126	11/05/21	11/08/21	EPA 6020B	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	39.9	0.0581	mg/L dry	1	BEK0096	11/04/21	11/08/21	EPA 6020B	
Magnesium	18.9	0.0581	"	"	"	"	"	"	
Sodium	6.87	0.0581	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.224	0.00100	units	1	BEK0197	11/09/21	11/09/21	Calculation	

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

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BEK0135	11/05/21	11/05/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.352	0.0100	mmhos/cm	1	BEK0138	11/05/21	11/05/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**SEP01-DL-E@2.5'**  
**2111088-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **11/04/21 14:08**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>8.26</b>			pH Units	1	BEK0137	11/05/21	11/05/21	EPA 9045D	

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1775 Sherman St. STE. 3000  
Denver CO, 80203

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

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

### Summit Scientific

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

#### Batch BEK0123 - EPA 5030 Soil MS

##### Blank (BEK0123-BLK1)

Prepared & Analyzed: 11/04/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0452		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	21-167			

##### LCS (BEK0123-BS1)

Prepared: 11/04/21 Analyzed: 11/05/21

Benzene	0.116	0.0020	mg/kg	0.125		93.2	70-130			
Toluene	0.132	0.0050	"	0.125		106	70-130			
Ethylbenzene	0.134	0.0050	"	0.125		107	70-130			
m,p-Xylene	0.251	0.010	"	0.250		100	70-130			
o-Xylene	0.123	0.0050	"	0.125		98.2	70-130			
1,2,4-Trimethylbenzene	0.132	0.0050	"	0.125		106	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.125		102	70-130			
Naphthalene	0.123	0.0038	"	0.125		98.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0444		"	0.0400		111	23-173			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	21-167			

##### Matrix Spike (BEK0123-MS1)

Source: 2111086-05

Prepared: 11/04/21 Analyzed: 11/05/21

Benzene	0.117	0.0020	mg/kg	0.125	ND	93.3	70-130			
Toluene	0.132	0.0050	"	0.125	ND	106	70-130			
Ethylbenzene	0.135	0.0050	"	0.125	ND	108	70-130			
m,p-Xylene	0.252	0.010	"	0.250	ND	101	70-130			
o-Xylene	0.124	0.0050	"	0.125	ND	99.4	70-130			
1,2,4-Trimethylbenzene	0.133	0.0050	"	0.125	ND	106	70-130			
1,3,5-Trimethylbenzene	0.127	0.0050	"	0.125	ND	102	70-130			
Naphthalene	0.134	0.0038	"	0.125	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0448		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		102	21-167			

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

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

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

**Batch BEK0123 - EPA 5030 Soil MS**

Matrix Spike Dup (BEK0123-MSD1)	Source: 2111086-05			Prepared: 11/04/21 Analyzed: 11/05/21						
Benzene	0.115	0.0020	mg/kg	0.125	ND	92.1	70-130	1.32	30	
Toluene	0.132	0.0050	"	0.125	ND	106	70-130	0.159	30	
Ethylbenzene	0.134	0.0050	"	0.125	ND	107	70-130	0.668	30	
m,p-Xylene	0.254	0.010	"	0.250	ND	102	70-130	0.972	30	
o-Xylene	0.124	0.0050	"	0.125	ND	99.5	70-130	0.145	30	
1,2,4-Trimethylbenzene	0.135	0.0050	"	0.125	ND	108	70-130	1.41	30	
1,3,5-Trimethylbenzene	0.128	0.0050	"	0.125	ND	102	70-130	0.517	30	
Naphthalene	0.137	0.0038	"	0.125	ND	110	70-130	2.12	30	
Surrogate: 1,2-Dichloroethane-d4	0.0449		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

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

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

**Batch BEK0124 - EPA 3550A**

**Blank (BEK0124-BLK1)**

Prepared: 11/04/21 Analyzed: 11/05/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BEK0124-BS1)**

Prepared: 11/04/21 Analyzed: 11/05/21

C10-C28 (DRO)	458	50	mg/kg	500	91.5	70-130
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**Matrix Spike (BEK0124-MS1)**

Source: 2111086-05

Prepared: 11/04/21 Analyzed: 11/05/21

C10-C28 (DRO)	521	50	mg/kg	500	49.2	94.3	70-130
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**Matrix Spike Dup (BEK0124-MSD1)**

Source: 2111086-05

Prepared: 11/04/21 Analyzed: 11/05/21

C10-C28 (DRO)	518	50	mg/kg	500	49.2	93.8	70-130	0.483	20
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Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BEK0126 - EPA 3050B**

**Blank (BEK0126-BLK1)**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron ND 0.0100 mg/L

**LCS (BEK0126-BS1)**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.09 0.0100 mg/L 5.00 102 80-120

**Duplicate (BEK0126-DUP1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 0.427 0.0100 mg/L 0.433 1.34 20

**Matrix Spike (BEK0126-MS1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.30 0.0100 mg/L 5.00 0.433 97.3 75-125

**Matrix Spike Dup (BEK0126-MSD1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.83 0.0100 mg/L 5.00 0.433 108 75-125 9.64 25

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEK0096 - General Preparation**

**Blank (BEK0096-BLK1)**

Prepared: 11/03/21 Analyzed: 11/08/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

**LCS (BEK0096-BS1)**

Prepared: 11/03/21 Analyzed: 11/08/21

Calcium	5.59	0.0500	mg/L wet	5.00	112	70-130
Magnesium	5.78	0.0500	"	5.00	116	70-130
Sodium	5.75	0.0500	"	5.00	115	70-130

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

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

**Summit Scientific**

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

**Batch BEK0135 - General Preparation**

Duplicate (BEK0135-DUP1)			Source: 2110398-02		Prepared & Analyzed: 11/05/21					
% Solids	93.6		%		94.4			0.857	20	

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEK0138 - General Preparation**

**Blank (BEK0138-BLK1)**

Prepared & Analyzed: 11/05/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEK0138-BS1)**

Prepared & Analyzed: 11/05/21

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 98.2 95-105

**Duplicate (BEK0138-DUP1)**

**Source: 2110400-04**

Prepared & Analyzed: 11/05/21

Specific Conductance (EC) 0.715 0.0100 mmhos/cm 0.720 0.669 20

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEK0137 - General Preparation**

**LCS (BEK0137-BS1)**

Prepared & Analyzed: 11/05/21

pH	9.15	pH Units	9.18	99.7	95-105
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**Duplicate (BEK0137-DUP1)**

**Source: 2110400-04**

Prepared & Analyzed: 11/05/21

pH	8.20	pH Units	8.18	0.244	20
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Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/09/21 14:50

### Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 11, 2021

Mark Longhurst

PDC Energy

1775 Sherman St. STE. 3000

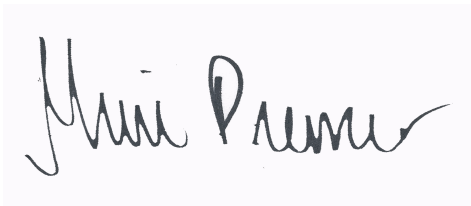
Denver, CO 80203

RE: Rice 22-1,2 Tank Battery

Work Order #2111099

Enclosed are the results of analyses for samples received by Summit Scientific on 11/04/21 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premer", on a light blue background.

Muri Premer For Paul Shrewsbury  
President





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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV01-B@4'	2111099-01	Soil	11/04/21 12:15	11/04/21 16:30
PWV01-E@2.5'	2111099-05	Soil	11/04/21 12:35	11/04/21 16:30
AST01@0-6"	2111099-06	Soil	11/04/21 12:55	11/04/21 16:30
SEP01-FL@3'	2111099-07	Soil	11/04/21 12:45	11/04/21 16:30

Summit Scientific

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## 2111099

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

Page 1 of 1

Client:	PDC / Tasman
Address:	6855 W 119th Ave
City/State/Zip:	Broomfield/ CO/ 80020
Phone:	303-487-1228
Sampler Name:	Mike Connolly

**Project Manager:** Mark Longhurst  
**E-Mail:** mark.longhurst@PDCE.com

Project Name: Rice 22-1,2 Tank Bottom  
Project Number: N/A

[illegible]

S<sub>2</sub>

2111099

## Sample Receipt Checklist

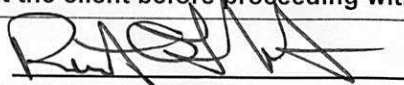
S2 Work Order# \_\_\_\_\_

Client: Pbc / Tasman Client Project ID: Rice 22, 1-2 tank BatteryShipped Via: ☐ H.D./P.U./FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)Temp (°C) 3.9

Thermometer ID: G86A9201901378

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? 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"/>	on ICE
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? 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):				

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

  
 Custodian Printed Name or Initials

11.4.21  
 Date/Time



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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-B@4'**  
**2111099-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEK0142	11/05/21	11/06/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		119 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0143	11/05/21	11/06/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:15**

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

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-B@4'**  
**2111099-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.515	0.0100	mg/L	1	BEK0126	11/05/21	11/08/21	EPA 6020B	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	85.1	0.0572	mg/L dry	1	BEK0191	11/09/21	11/10/21	EPA 6020B	
Magnesium	34.6	0.0572	"	"	"	"	"	"	
Sodium	234	0.0572	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.40	0.00100	units	1	BEK0258	11/11/21	11/11/21	Calculation	

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

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.4		%	1	BEK0161	11/08/21	11/08/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.81	0.0100	mmhos/cm	1	BEK0235	11/10/21	11/10/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-B@4'**  
**2111099-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **11/04/21 12:15**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>8.10</b>			pH Units	1	BEK0234	11/10/21	11/10/21	EPA 9045D	

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-E@2.5'**  
**2111099-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0142	11/05/21	11/06/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0143	11/05/21	11/06/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:35**

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

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-E@2.5'**  
**2111099-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0689	0.0100	mg/L	1	BEK0126	11/05/21	11/08/21	EPA 6020B	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.7	0.0535	mg/L dry	1	BEK0191	11/09/21	11/10/21	EPA 6020B	
Magnesium	6.10	0.0535	"	"	"	"	"	"	
Sodium	2.35	0.0535	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.110	0.00100	units	1	BEK0258	11/11/21	11/11/21	Calculation	

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

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BEK0161	11/08/21	11/08/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.190	0.0100	mmhos/cm	1	BEK0235	11/10/21	11/10/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**PWV01-E@2.5'**  
**2111099-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **11/04/21 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>pH</b>	<b>8.02</b>			pH Units	1	BEK0234	11/10/21	11/10/21	EPA 9045D	

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**AST01@0-6"**  
**2111099-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0142	11/05/21	11/06/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		121 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	150	50	mg/kg	1	BEK0143	11/05/21	11/06/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		119 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**SEP01-FL@3'**  
**2111099-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/04/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEK0142	11/05/21	11/06/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		122 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/04/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEK0143	11/05/21	11/06/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/04/21 12:45**

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

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

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

### Summit Scientific

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

#### Batch BEK0142 - EPA 5030 Soil MS

##### Blank (BEK0142-BLK1)

Prepared: 11/05/21 Analyzed: 11/06/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0470		"	0.0400		118	23-173			
Surrogate: Toluene-d8	0.0524		"	0.0400		131	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

##### LCS (BEK0142-BS1)

Prepared: 11/05/21 Analyzed: 11/06/21

Benzene	0.0700	0.0020	mg/kg	0.0750		93.4	70-130			
Toluene	0.0717	0.0050	"	0.0750		95.6	70-130			
Ethylbenzene	0.0705	0.0050	"	0.0750		94.0	70-130			
m,p-Xylene	0.144	0.010	"	0.150		96.1	70-130			
o-Xylene	0.0763	0.0050	"	0.0750		102	70-130			
1,2,4-Trimethylbenzene	0.0692	0.0050	"	0.0750		92.2	70-130			
1,3,5-Trimethylbenzene	0.0657	0.0050	"	0.0750		87.6	70-130			
Naphthalene	0.0719	0.0038	"	0.0750		95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0474		"	0.0400		119	20-170			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	21-167			

##### Matrix Spike (BEK0142-MS1)

Source: 2111064-01

Prepared: 11/05/21 Analyzed: 11/06/21

Benzene	0.0682	0.0020	mg/kg	0.0750	ND	90.9	70-130			
Toluene	0.0706	0.0050	"	0.0750	ND	94.1	70-130			
Ethylbenzene	0.0723	0.0050	"	0.0750	ND	96.4	70-130			
m,p-Xylene	0.148	0.010	"	0.150	ND	98.9	70-130			
o-Xylene	0.0784	0.0050	"	0.0750	ND	105	70-130			
1,2,4-Trimethylbenzene	0.0730	0.0050	"	0.0750	ND	97.3	70-130			
1,3,5-Trimethylbenzene	0.0690	0.0050	"	0.0750	ND	92.0	70-130			
Naphthalene	0.0793	0.0038	"	0.0750	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0475		"	0.0400		119	20-170			
Surrogate: 4-Bromofluorobenzene	0.0426		"	0.0400		106	21-167			

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

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

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

**Batch BEK0142 - EPA 5030 Soil MS**

Matrix Spike Dup (BEK0142-MSD1)	Source: 2111064-01			Prepared: 11/05/21 Analyzed: 11/06/21						
Benzene	0.0699	0.0020	mg/kg	0.0750	ND	93.2	70-130	2.43	30	
Toluene	0.0728	0.0050	"	0.0750	ND	97.1	70-130	3.14	30	
Ethylbenzene	0.0697	0.0050	"	0.0750	ND	92.9	70-130	3.76	30	
m,p-Xylene	0.142	0.010	"	0.150	ND	94.9	70-130	4.15	30	
o-Xylene	0.0770	0.0050	"	0.0750	ND	103	70-130	1.93	30	
1,2,4-Trimethylbenzene	0.0721	0.0050	"	0.0750	ND	96.1	70-130	1.24	30	
1,3,5-Trimethylbenzene	0.0671	0.0050	"	0.0750	ND	89.5	70-130	2.73	30	
Naphthalene	0.0887	0.0038	"	0.0750	ND	118	70-130	11.1	30	
Surrogate: 1,2-Dichloroethane-d4	0.0459		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0490		"	0.0400		122	20-170			
Surrogate: 4-Bromofluorobenzene	0.0441		"	0.0400		110	21-167			

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

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

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

**Batch BEK0143 - EPA 3550A**

**Blank (BEK0143-BLK1)**

Prepared: 11/05/21 Analyzed: 11/06/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

**LCS (BEK0143-BS1)**

Prepared: 11/05/21 Analyzed: 11/06/21

C10-C28 (DRO)	445	50	mg/kg	500	89.0	70-130
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**Matrix Spike (BEK0143-MS1)**

Source: 2111064-01

Prepared: 11/05/21 Analyzed: 11/06/21

C10-C28 (DRO)	457	50	mg/kg	500	ND	91.4	70-130
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**Matrix Spike Dup (BEK0143-MSD1)**

Source: 2111064-01

Prepared: 11/05/21 Analyzed: 11/06/21

C10-C28 (DRO)	477	50	mg/kg	500	ND	95.5	70-130	4.38	20
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Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BEK0126 - EPA 3050B**

**Blank (BEK0126-BLK1)**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron ND 0.0100 mg/L

**LCS (BEK0126-BS1)**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.09 0.0100 mg/L 5.00 102 80-120

**Duplicate (BEK0126-DUP1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 0.427 0.0100 mg/L 0.433 1.34 20

**Matrix Spike (BEK0126-MS1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.30 0.0100 mg/L 5.00 0.433 97.3 75-125

**Matrix Spike Dup (BEK0126-MSD1)**

**Source: 2111086-07**

Prepared: 11/05/21 Analyzed: 11/08/21

Boron 5.83 0.0100 mg/L 5.00 0.433 108 9.64 25

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BEK0191 - General Preparation**

**Blank (BEK0191-BLK1)**

Prepared: 11/09/21 Analyzed: 11/10/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

**LCS (BEK0191-BS1)**

Prepared: 11/09/21 Analyzed: 11/10/21

Calcium	5.61	0.0500	mg/L wet	5.00	112	70-130
Magnesium	5.46	0.0500	"	5.00	109	70-130
Sodium	5.36	0.0500	"	5.00	107	70-130

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

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

**Summit Scientific**

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

**Batch BEK0161 - General Preparation**

Duplicate (BEK0161-DUP1)		Source: 2111092-02		Prepared & Analyzed: 11/08/21						
% Solids	87.8		%		87.1			0.730	20	

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery  
Project Number: [none]  
Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BEK0235 - General Preparation**

**Blank (BEK0235-BLK1)**

Prepared & Analyzed: 11/10/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEK0235-BS1)**

Prepared & Analyzed: 11/10/21

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 101 95-105

**Duplicate (BEK0235-DUP1)**

**Source: 2111099-01**

Prepared & Analyzed: 11/10/21

Specific Conductance (EC) 1.83 0.0100 mmhos/cm 1.81 0.934 20

Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEK0234 - General Preparation**

**LCS (BEK0234-BS1)**

Prepared & Analyzed: 11/10/21

pH	9.01	pH Units	9.18	98.1	95-105
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**Duplicate (BEK0234-DUP1)**

Source: 2111099-01

Prepared & Analyzed: 11/10/21

pH	8.13	pH Units	8.10	0.370	20
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Summit Scientific

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

Project: Rice 22-1,2 Tank Battery

Project Number: [none]

Project Manager: Mark Longhurst

**Reported:**  
11/11/21 15:55

### 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