

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

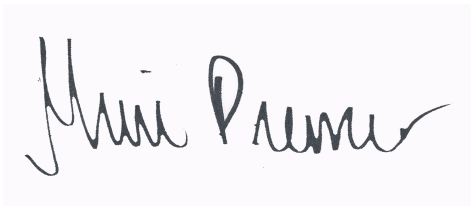
303.277.9310

November 25, 2020

Brent Hedstrom
Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie, WY 82070
RE: Federal NOAA 11-32
Work Order #2011158

Enclosed are the results of analyses for samples received by Summit Scientific on 11/12/20 11:10. 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



Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie WY, 82070

Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/25/20 13:08

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Surface casing	2011158-01	Water	11/03/20 00:00	11/12/20 11:10

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2011158

S₂

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

Client: Crestone Peak Resources

Project Manager: Brent Hedstrom

Address: 10188 East I-25 Frontage road

E-Mail: brent.hedstrom@crestonepr.com

City/State/Zip: Firestone, CO 80504

LOE C763241 Code 8503 COGCC 264390



Phone: 303-434-3007

Project Name: Federal NOAA 11-32

Sampler Name:

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Anion	Cations	TDS	BTEX 8020	DRO	GRO	RSK-175			
1	Surface casing	11/3/2020		9		X	X			X				X	X	X	X	X	X	X		
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 11/12/20 11:10	Received by: 	Date/Time: 11-12-20 11:10	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> Sample Integrity: Temperature Upon Receipt: 6.2 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

2011158

Sample Receipt Checklist

S2 Work Order _____

Client: Crestone Peak ResourcesClient Project ID: Federal NOAA 11-32Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

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

Temp (°C)	6.2
-----------	-----

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"/>	anions
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, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HNO ₃
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	add @ lab
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

11/12/20

Date/Time



Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie WY, 82070

Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/25/20 13:08

Surface casing
2011158-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	270	10		ug/l	10	BDK0195	11/17/20	11/19/20	EPA 8260B	
Toluene	840	10		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	1	"	"	"	"	
Xylenes (total)	100	20		"	10	"	"	"	"	
Gasoline Range Hydrocarbons	6900	5000		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		98.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	5.0		mg/L	1	BDK0196	11/17/20	11/19/20	EPA 8015M	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		65.6 %		58.9-148		"	"	"	"	

Dissolved Gases by RSK-175

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Methane	3.4	1.0		mg/L	100	BDK0224	11/17/20	11/20/20	RSK-175 mod	
Ethane	0.26	0.10		"	10	"	"	"	"	
Propane	0.32	0.10		"	"	"	"	"	"	

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Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
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**Surface casing
2011158-01 (Water)**

Summit Scientific

Dissolved Gases by RSK-175

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		107 %	70-130		BDK0224	11/17/20	11/20/20	RSK-175 mod	

Total Metals by EPA Method 200.8

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	127	50.0	ug/l	1	BDK0168	11/16/20	11/16/20	EPA 200.8	
Magnesium	2170	500	"	10	"	"	"	"	
Potassium	4180	500	"	"	"	"	"	"	
Sodium	562000	500	"	"	"	"	"	"	

Anions by EPA Method 300.0

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	153	12.0	mg/L	200	BDK0156	11/16/20	11/16/20	EPA 300.0	
Sulfate	268	60.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1980	10.0	mg/L	1	BDK0157	11/13/20	11/13/20	SM2540C	I-03

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Project: Federal NOAA 11-32

Project Number: [none]
 Project Manager: Brent Hedstrom

Reported:
 11/25/20 13:08

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 BDK0196 - EPA 3520B

Blank (BDK0196-BLK1)

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) ND 5.0 mg/L

LCS (BDK0196-BS1)

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 49.0 5.0 mg/L 50.0 98.0 70-130

Matrix Spike (BDK0196-MS1)

Source: 2011148-01

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 50.3 5.0 mg/L 50.0 4.26 92.0 70-130

Matrix Spike Dup (BDK0196-MSD1)

Source: 2011148-01

Prepared: 11/17/20 Analyzed: 11/19/20

C10-C28 (DRO) 49.0 5.0 mg/L 50.0 4.26 89.5 70-130 2.50 20

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Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/25/20 13:08

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 BDK0224 - GC

Blank (BDK0224-BLK1)

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	0.0397		"	0.0364		109	70-130			

LCS (BDK0224-BS1)

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	0.033	0.010	mg/L	0.0428		77.4	70-130			
Ethane	0.077	0.010	"	0.0798		96.2	70-130			
Propane	0.12	0.010	"	0.139		83.5	70-130			
Surrogate: Ethene	0.0692		"	0.0728		95.1	70-130			

Duplicate (BDK0224-DUP1)

Source: 2011145-01

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	3.5	1.0	mg/L		3.4			2.60	30	
Ethane	2.2	1.0	"		2.4			6.68	30	
Propane	2.0	1.0	"		2.0			0.603	30	
Surrogate: Ethene	0.0500		"	0.0364		137	70-130			S-06

Matrix Spike (BDK0224-MS1)

Source: 2011145-01

Prepared: 11/17/20 Analyzed: 11/19/20

Methane	4.3	1.0	mg/L	0.0428	3.4	NR	70-130			QM-02
Ethane	2.5	1.0	"	0.0798	2.4	198	70-130			QM-02
Propane	1.9	1.0	"	0.139	2.0	NR	70-130			QM-02
Surrogate: Ethene	0.0600		"	0.0728		82.4	70-130			

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Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/25/20 13:08

Total Metals by EPA Method 200.8 - Quality Control
Summit Scientific

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

Batch BDK0168 - EPA 200.8

Blank (BDK0168-BLK1)

Prepared & Analyzed: 11/16/20

Calcium	ND	50.0	ug/l							
Magnesium	ND	50.0	"							
Potassium	ND	50.0	"							
Sodium	ND	50.0	"							

LCS (BDK0168-BS1)

Prepared & Analyzed: 11/16/20

Calcium	5300	50.0	ug/l	5000	106	85-115				
Magnesium	4470	50.0	"	5000	89.4	85-115				
Potassium	4330	50.0	"	5000	86.5	85-115				
Sodium	4260	50.0	"	5000	85.2	85-115				

Duplicate (BDK0168-DUP1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	6060	50.0	ug/l	6120			0.927	20		
Magnesium	12000	50.0	"	11700			2.35	20		
Potassium	4360	50.0	"	5230			18.2	20		
Sodium	255000	50.0	"	330000			25.8	20		QM-02

Matrix Spike (BDK0168-MS1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	11600	50.0	ug/l	5000	6120	109	70-130			
Magnesium	15600	50.0	"	5000	11700	77.6	70-130			
Potassium	11300	50.0	"	5000	5230	122	70-130			
Sodium	214000	50.0	"	5000	330000	NR	70-130			QM-02

Matrix Spike Dup (BDK0168-MSD1)

Source: 2011178-01

Prepared & Analyzed: 11/16/20

Calcium	11500	50.0	ug/l	5000	6120	108	70-130	0.436	25	
Magnesium	16400	50.0	"	5000	11700	93.6	70-130	4.99	25	
Potassium	9810	50.0	"	5000	5230	91.6	70-130	14.4	25	
Sodium	254000	50.0	"	5000	330000	NR	70-130	17.1	25	QM-02

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Project: Federal NOAA 11-32

Project Number: [none]
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Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BDK0156 - General Preparation

Blank (BDK0156-BLK1)

Prepared & Analyzed: 11/16/20

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

LCS (BDK0156-BS1)

Prepared & Analyzed: 11/16/20

Chloride	2.97	0.0600	mg/L	3.00	99.0	90-110			
Sulfate	15.8	0.300	"	15.0	105	90-110			

Duplicate (BDK0156-DUP1)

Source: 2011144-01

Prepared & Analyzed: 11/16/20

Sulfate	38.2	60.0	mg/L		38.6		1.04	20	
Chloride	13.4	12.0	"		14.6		8.57	20	

Matrix Spike (BDK0156-MS1)

Source: 2011144-01

Prepared & Analyzed: 11/16/20

Sulfate	3060	60.0	mg/L	3000	38.6	101	80-120		
Chloride	569	12.0	"	600	14.6	92.4	80-120		

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 2020 E. Grand Avenue, Suite 515
 Laramie WY, 82070

Project: Federal NOAA 11-32

Project Number: [none]
 Project Manager: Brent Hedstrom

Reported:
 11/25/20 13:08

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BDK0157 - General Preparation

Blank (BDK0157-BLK1)

Prepared & Analyzed: 11/13/20

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BDK0157-DUP1)

Source: 2011145-01

Prepared & Analyzed: 11/13/20

Total Dissolved Solids 1500 10.0 mg/L 1490 0.267 20

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2020 E. Grand Avenue, Suite 515
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Project: Federal NOAA 11-32

Project Number: [none]
Project Manager: Brent Hedstrom

Reported:
11/25/20 13:08

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- I-03 This sample was recieved and analyzed outside of the recommended holding time.
- 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