

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

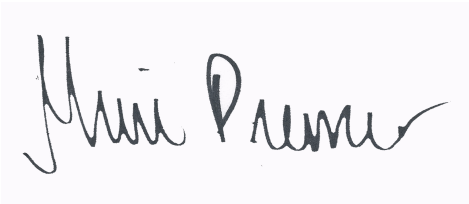
303.277.9310

February 15, 2021

Brent Hedstrom
Crestone Peak Resources
2020 E. Grand Avenue, Suite 515
Laramie, WY 82070
RE: Horn Libsack 1
Work Order #2102081

Enclosed are the results of analyses for samples received by Summit Scientific on 02/04/21 09:50. 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: Horn Libsack 1
Project Number: COGCC 242428
Project Manager: Brent Hedstrom

Reported:
02/15/21 14:32

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Surface Casing	2102081-01	Water	01/20/21 00:00	02/04/21 09:50

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S₂

2102081

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

Phone: 303-434-3007

Project Name: Horn Libsack I

COGCC 242428

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	1/20/2021		3										X	X	X	X	X	X	X	X	LOE W768125 Code 8503
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: *BH* Date/Time: *2-4-21 9:50 AM* Received by: *[Signature]* Date/Time: *02/04/2021 9:50 AM*

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Turn Around Time (Check)
 Same Day _____ 72 hours _____
 24 hours _____ Standard
 48 hours _____
 Sample Integrity:
 Temperature Upon Receipt: _____
 Samples Intact: Yes No

Notes:

Sample Receipt Checklist

S2 Work Order 2102081

Client: CRESTONE PEAK Client Project ID: HORN LIBSACK 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)	3.7
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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.	✓			
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?		✓		
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	✓			HNO3
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?			✓	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

RZ
Custodian Printed Name or Initials


Signature of Custodian

2/4/21
Date/Time



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Surface Casing
2102081-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	650000	10000	ug/l	10000	BEB0117	02/08/21	02/10/21	EPA 8260B	
Toluene	8300000	10000	"	"	"	"	"	"	
Ethylbenzene	1000000	10000	"	"	"	"	"	"	
Xylenes (total)	11000000	20000	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	330000000	5000000	"	"	"	"	"	"	

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	205 %	23-173	"	"	"	"	"	"	S-02
Surrogate: Toluene-d8	128 %	20-170	"	"	"	"	"	"	S-02
Surrogate: 4-Bromofluorobenzene	352 %	21-167	"	"	"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	380000	50	mg/L	10	BEB0118	02/08/21	02/09/21	EPA 8015M	

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	789 %	58.9-148	"	"	"	"	"	"	S-02

Dissolved Gases by RSK-175

I-03, R-03

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	5.8	1.0	mg/L	100	BEB0099	02/05/21	02/10/21	RSK-175 mod	
Ethane	15	1.0	"	"	"	"	"	"	
Propane	22	1.0	"	"	"	"	"	"	

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Surface Casing
2102081-01 (Water)

Summit Scientific

Dissolved Gases by RSK-175

I-03, R-03

Date Sampled: **01/20/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		8.24 %	70-130		BEB0099	02/05/21	02/10/21	RSK-175 mod	S-06

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Reported:
02/15/21 14:32

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 BEB0117 - EPA 5030 Water MS

Blank (BEB0117-BLK1)

Prepared: 02/08/21 Analyzed: 02/09/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Gasoline Range Hydrocarbons	ND	500	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	18.7		"	13.3		141	23-173			
<i>Surrogate: Toluene-d8</i>	11.7		"	13.3		87.7	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.4		"	13.3		100	21-167			

LCS (BEB0117-BS1)

Prepared: 02/08/21 Analyzed: 02/09/21

Benzene	38.4	1.0	ug/l	33.3		115	70-130			
Toluene	34.2	1.0	"	33.3		103	70-130			
Ethylbenzene	40.2	1.0	"	33.3		120	70-130			
m,p-Xylene	66.0	2.0	"	66.7		99.0	70-130			
o-Xylene	38.2	1.0	"	33.3		114	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	18.2		"	13.3		136	23-173			
<i>Surrogate: Toluene-d8</i>	11.8		"	13.3		88.1	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.6		"	13.3		102	21-167			

Matrix Spike (BEB0117-MS1)

Source: 2102107-02

Prepared: 02/08/21 Analyzed: 02/09/21

Benzene	38.6	1.0	ug/l	33.3	ND	116	70-130			
Toluene	35.1	1.0	"	33.3	ND	105	70-130			
Ethylbenzene	41.3	1.0	"	33.3	ND	124	70-130			
m,p-Xylene	66.7	2.0	"	66.7	ND	100	70-130			
o-Xylene	39.0	1.0	"	33.3	ND	117	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	18.5		"	13.3		139	23-173			
<i>Surrogate: Toluene-d8</i>	11.9		"	13.3		89.5	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.8		"	13.3		103	21-167			

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 02/15/21 14:32

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BEB0117 - EPA 5030 Water MS

Matrix Spike Dup (BEB0117-MSD1)

Source: 2102107-02

Prepared: 02/08/21 Analyzed: 02/09/21

Benzene	38.6	1.0	ug/l	33.3	ND	116	70-130	0.104	30	
Toluene	35.2	1.0	"	33.3	ND	106	70-130	0.540	30	
Ethylbenzene	40.4	1.0	"	33.3	ND	121	70-130	2.06	30	
m,p-Xylene	65.5	2.0	"	66.7	ND	98.2	70-130	1.88	30	
o-Xylene	38.1	1.0	"	33.3	ND	114	70-130	2.26	30	
Surrogate: 1,2-Dichloroethane-d4	19.2		"	13.3		144	23-173			
Surrogate: Toluene-d8	12.1		"	13.3		91.0	20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		104	21-167			

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Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BEB0118 - EPA 3520B

Blank (BEB0118-BLK1)

Prepared: 02/08/21 Analyzed: 02/09/21

C10-C28 (DRO) ND 5.0 mg/L

LCS (BEB0118-BS1)

Prepared: 02/08/21 Analyzed: 02/09/21

C10-C28 (DRO) 46.1 5.0 mg/L 50.0 92.3 70-130

LCS Dup (BEB0118-BSD1)

Prepared: 02/08/21 Analyzed: 02/09/21

C10-C28 (DRO) 41.9 5.0 mg/L 50.0 83.7 70-130 9.69 20

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02/15/21 14:32

Dissolved Gases by RSK-175 - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BEB0099 - GC

Blank (BEB0099-BLK1)

Prepared: 02/05/21 Analyzed: 02/08/21

Methane	ND	0.010	mg/L								
Ethane	ND	0.010	"								
Propane	ND	0.010	"								
Surrogate: Ethene	0.0383		"	0.0364		105	70-130				

LCS (BEB0099-BS1)

Prepared: 02/05/21 Analyzed: 02/08/21

Methane	0.030	0.010	mg/L	0.0428		71.3	70-130				
Ethane	0.10	0.010	"	0.0798		126	70-130				
Propane	0.17	0.010	"	0.139		120	70-130				
Surrogate: Ethene	0.0723		"	0.0728		99.3	70-130				

Duplicate (BEB0099-DUP1)

Source: 2102074-01

Prepared: 02/05/21 Analyzed: 02/09/21

Methane	1.3	1.0	mg/L		1.4			9.38	30		
Ethane	0.022	0.010	"		0.023			4.94	30		
Propane	0.054	0.010	"		0.056			3.99	30		
Surrogate: Ethene	0.0352		"	0.0364		96.7	70-130				

Matrix Spike (BEB0099-MS1)

Source: 2102074-01

Prepared: 02/05/21 Analyzed: 02/08/21

Methane	1.9	0.10	mg/L	0.0428	1.4	NR	70-130				QL-01
Ethane	0.11	0.010	"	0.0798	0.023	106	70-130				
Propane	0.24	0.010	"	0.139	0.056	130	70-130				
Surrogate: Ethene	0.0760		"	0.0728		104	70-130				

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02/15/21 14:32

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.
- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- R-03 The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
- QL-01 Sample results for the QC batch were accepted based on LCS/LCSD percent recoveries and RPD values.
- 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