

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 07, 2022

James Miller

Civitas Resources

650 Southgate Drive

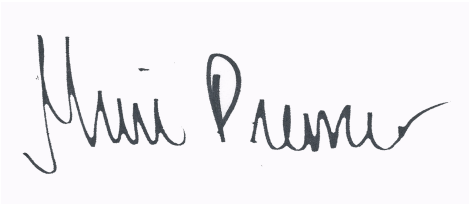
Windsor, CO 80550

RE: Federal NOAA 11-32

Work Order #2112412

Enclosed are the results of analyses for samples received by Summit Scientific on 12/23/21 08:45. 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

Project Manager



Civatas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Federal NOAA 11-32

Project Number: 8520.142
Project Manager: James Miller

Reported:
01/07/22 15:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bradenhead Fluid	2112412-01	Water	12/16/21 00:00	12/23/21 08:45

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2112412

S₂

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

Page 1 of 1

Client: Civitas Resources

Project Manager: James Miller

Address: 650 Southgate Drive

E-Mail: jmiller@civiresources.com

City/State/Zip: Windsor, CO 80550

AFE: COC763241

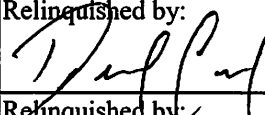
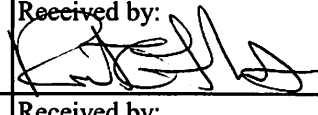
Phone: 720-984-7460

Project Name: Federal NOAA 11-32

Sampler Name:

Project Number: 8520.142

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	Bradenhead fluid	12/16		8		X			X					X	X	X	X	X	X	X		
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						

Relinquished by: 	Date/Time: 12/23 08:45	Received by: 	Date/Time: 12/23/21 08:45	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: 7.3 Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes: Please include Crestone Peak on sample results
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

S2 Work Order# 2112412

Sample Receipt Checklist

Client: Civitas Resources Client Project ID: Federal NOAA 11-32

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

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

Temp (°C) 7.3

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.	-			on ICE
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, etc.	-			HNO ₃
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.

[Signature]
Custodian Printed Name or Initials

12-23-21
Date/Time



Civatas Resources
650 Southgate Drive
Windsor CO, 80550

Project: Federal NOAA 11-32

Project Number: 8520.142
Project Manager: James Miller

Reported:
01/07/22 15:24

**Bradenhead Fluid
2112412-01 (Water)**

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

R-01

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	83	10	ug/l	10	BEL0609	12/28/21	01/06/22	EPA 8260B	
Toluene	100	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	20	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	5000	"	"	"	"	"	"	

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	112 %	23-173	"	"	"	"	"	"	
Surrogate: Toluene-d8	111 %	20-170	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	21-167	"	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	5.0	mg/L	1	BEL0613	12/28/21	12/29/21	EPA 8015M	

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	119 %	58.9-148	"	"	"	"	"	"	

Dissolved Gases by RSK-175

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Methane	5.6	1.0	mg/L	100	BEL0641	12/29/21	12/30/21	RSK-175 mod	
Ethane	2.7	1.0	"	"	"	"	"	"	

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Project: Federal NOAA 11-32

Project Number: 8520.142
Project Manager: James Miller

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**Bradenhead Fluid
2112412-01 (Water)**

Summit Scientific

Dissolved Gases by RSK-175

Propane	1.9	1.0	mg/L	100	BEL0641	12/29/21	12/30/21	RSK-175 mod
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Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: Ethene		110 %	70-130		"	"	"	"	

Total Metals by EPA Method 200.8

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4410	500	ug/l	10	BEL0630	12/29/21	12/29/21	EPA 200.8	
Magnesium	4210	500	"	"	"	"	"	"	
Potassium	9330	500	"	"	"	"	"	"	
Sodium	1720000	500	"	"	"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Bromide	4.20	4.00	mg/L	20	BEL0582	12/23/21	12/28/21	EPA 300.0	I-03
Chloride	339	12.0	"	200	"	"	"	"	I-03
Fluoride	ND	0.0400	"	1	"	"	"	"	I-03
Nitrate as N	ND	0.0500	"	"	"	"	"	"	I-03
Nitrite as N	11.6	1.20	"	20	"	"	"	"	I-03
Orthophosphate as P	135	20.0	"	200	"	"	"	"	I-03
Sulfate	543	60.0	"	"	"	"	"	"	I-03

Total Dissolved Solids by SM2540C

Date Sampled: **12/16/21 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	3110	10.0	mg/L	1	BEL0580	12/23/21	12/27/21	SM2540C	

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Project: Federal NOAA 11-32

Project Number: 8520.142
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Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BEL0609 - EPA 5030 Water MS

Blank (BEL0609-BLK1)

Prepared & Analyzed: 12/28/21

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>	14.9		"	13.3		112	23-173			
<i>Surrogate: Toluene-d8</i>	13.3		"	13.3		99.8	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.7		"	13.3		95.4	21-167			

LCS (BEL0609-BS1)

Prepared & Analyzed: 12/28/21

Benzene	38.4	1.0	ug/l	33.3		115	70-130			
Toluene	37.8	1.0	"	33.3		113	70-130			
Ethylbenzene	41.0	1.0	"	33.3		123	70-130			
m,p-Xylene	80.2	2.0	"	66.7		120	70-130			
o-Xylene	40.5	1.0	"	33.3		121	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	15.7		"	13.3		118	23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		99.2	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.7		"	13.3		95.3	21-167			

Matrix Spike (BEL0609-MS1)

Source: 2112414-01

Prepared & Analyzed: 12/28/21

Benzene	38.2	1.0	ug/l	33.3	ND	115	70-130			
Toluene	37.9	1.0	"	33.3	ND	114	70-130			
Ethylbenzene	40.6	1.0	"	33.3	ND	122	70-130			
m,p-Xylene	79.4	2.0	"	66.7	ND	119	70-130			
o-Xylene	38.7	1.0	"	33.3	ND	116	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	16.0		"	13.3		120	23-173			
<i>Surrogate: Toluene-d8</i>	13.2		"	13.3		99.4	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	12.9		"	13.3		97.0	21-167			

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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 BEL0609 - EPA 5030 Water MS

Matrix Spike Dup (BEL0609-MSD1)	Source: 2112414-01			Prepared & Analyzed: 12/28/21						
Benzene	38.9	1.0	ug/l	33.3	ND	117	70-130	1.79	30	
Toluene	38.0	1.0	"	33.3	ND	114	70-130	0.342	30	
Ethylbenzene	41.7	1.0	"	33.3	ND	125	70-130	2.65	30	
m,p-Xylene	81.4	2.0	"	66.7	ND	122	70-130	2.42	30	
o-Xylene	40.8	1.0	"	33.3	ND	122	70-130	5.28	30	
Surrogate: 1,2-Dichloroethane-d4	16.9		"	13.3		126	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	21-167			

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Reported:
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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 BEL0613 - EPA 3520B

Blank (BEL0613-BLK1)

Prepared: 12/28/21 Analyzed: 12/29/21

C10-C28 (DRO) ND 5.0 mg/L

LCS (BEL0613-BS1)

Prepared: 12/28/21 Analyzed: 12/29/21

C10-C28 (DRO) 41.1 5.0 mg/L 50.0 82.2 70-130

LCS Dup (BEL0613-BSD1)

Prepared: 12/28/21 Analyzed: 12/29/21

C10-C28 (DRO) 41.7 5.0 mg/L 50.0 83.3 70-130 1.40 20

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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 BEL0641 - GC

Blank (BEL0641-BLK1)

Prepared: 12/29/21 Analyzed: 12/30/21

Methane	ND	0.010	mg/L							
Ethane	ND	0.010	"							
Propane	ND	0.010	"							
Surrogate: Ethene	0.0466		"	0.0364		128	70-130			

LCS (BEL0641-BS1)

Prepared: 12/29/21 Analyzed: 12/30/21

Methane	0.036	0.010	mg/L	0.0428		83.0	70-130			
Ethane	0.10	0.010	"	0.0798		127	70-130			
Propane	0.15	0.010	"	0.139		105	70-130			
Surrogate: Ethene	0.0878		"	0.0728		121	70-130			

Duplicate (BEL0641-DUP1)

Source: 2112412-01

Prepared: 12/29/21 Analyzed: 12/30/21

Methane	5.5	1.0	mg/L		5.6			0.905	30	
Ethane	2.7	1.0	"		2.7			0.368	30	
Propane	1.9	1.0	"		1.9			0.522	30	
Surrogate: Ethene	0.0400		"	0.0364		110	70-130			

Matrix Spike (BEL0641-MS1)

Source: 2112412-01

Prepared: 12/29/21 Analyzed: 12/30/21

Methane	5.9	1.0	mg/L	0.0428	5.6	795	70-130			QM-05
Ethane	3.0	1.0	"	0.0798	2.7	426	70-130			QM-05
Propane	2.5	1.0	"	0.139	1.9	403	70-130			QM-05
Surrogate: Ethene	0.0870		"	0.0728		120	70-130			

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Project: Federal NOAA 11-32

Project Number: 8520.142
Project Manager: James Miller

Reported:
01/07/22 15:24

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 BEL0630 - EPA 200.8

Blank (BEL0630-BLK1)

Prepared & Analyzed: 12/29/21

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

LCS (BEL0630-BS1)

Prepared & Analyzed: 12/29/21

Calcium	5030	50.0	ug/l	5000	101	85-115				
Magnesium	5080	50.0	"	5000	102	85-115				
Potassium	4810	50.0	"	5000	96.3	85-115				
Sodium	4970	50.0	"	5000	99.4	85-115				

Duplicate (BEL0630-DUP1)

Source: 2112418-01

Prepared & Analyzed: 12/29/21

Calcium	149000	50.0	ug/l	137000			8.15	20		
Magnesium	32800	50.0	"	32300			1.43	20		
Potassium	6620	50.0	"	6700			1.20	20		
Sodium	75400	50.0	"	76600			1.55	20		

Matrix Spike (BEL0630-MS1)

Source: 2112418-01

Prepared & Analyzed: 12/29/21

Calcium	141000	50.0	ug/l	5000	137000	77.0	70-130			
Magnesium	37100	50.0	"	5000	32300	94.5	70-130			
Potassium	11300	50.0	"	5000	6700	92.6	70-130			
Sodium	80700	50.0	"	5000	76600	82.4	70-130			

Matrix Spike Dup (BEL0630-MSD1)

Source: 2112418-01

Prepared & Analyzed: 12/29/21

Calcium	130000	50.0	ug/l	5000	137000	NR	70-130	8.07	25	QR-03
Magnesium	33900	50.0	"	5000	32300	30.3	70-130	9.04	25	QR-03
Potassium	10700	50.0	"	5000	6700	80.5	70-130	5.48	25	
Sodium	72100	50.0	"	5000	76600	NR	70-130	11.2	25	QR-03

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Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BEL0582 - General Preparation

Blank (BEL0582-BLK1)

Prepared & Analyzed: 12/27/21

Bromide	ND	0.200	mg/L							
Chloride	ND	0.0600	"							
Fluoride	ND	0.0400	"							
Nitrate as N	ND	0.0500	"							
Nitrite as N	ND	0.0600	"							
Orthophosphate as P	ND	0.100	"							
Sulfate	ND	0.300	"							

LCS (BEL0582-BS1)

Prepared & Analyzed: 12/27/21

Bromide	10.8	0.200	mg/L	10.0	108	90-110				
Chloride	3.05	0.0600	"	3.00	102	90-110				
Fluoride	2.09	0.0400	"	2.00	105	90-110				
Nitrate as N	3.22	0.0500	"	3.00	107	90-110				
Nitrite as N	2.94	0.0600	"	3.00	98.0	90-110				
Orthophosphate as P	4.54	0.100	"	5.00	90.8	90-110				
Sulfate	16.1	0.300	"	15.0	107	90-110				

Duplicate (BEL0582-DUP1)

Source: 2112378-01

Prepared & Analyzed: 12/27/21

Bromide	0.653	0.200	mg/L	0.654	0.153	20				
Chloride	ND	0.0600	"	214	200	20				QR-03
Fluoride	2.72	0.0400	"	2.52	7.56	20				
Nitrate as N	ND	0.0500	"	0.800	200	20				QR-03
Nitrite as N	ND	0.0600	"	17.0	200	20				QR-03
Orthophosphate as P	0.0350	0.100	"	9.60	199	20				QR-03
Sulfate	ND	0.300	"	1070	200	20				QR-03

Matrix Spike (BEL0582-MS1)

Source: 2112378-01

Prepared & Analyzed: 12/27/21

Bromide	8.88	0.200	mg/L	10.0	0.654	82.3	80-120			
Chloride	ND	0.0600	"	3.00	214	NR	80-120			QM-02
Fluoride	4.19	0.0400	"	2.00	2.52	83.6	80-120			
Nitrate as N	4.13	0.0500	"	3.00	0.800	111	80-120			
Nitrite as N	12.2	0.0600	"	3.00	17.0	NR	80-120			QM-05
Orthophosphate as P	2.71	0.100	"	5.00	9.60	NR	80-120			QM-05
Sulfate	ND	0.300	"	15.0	1070	NR	80-120			QM-02

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Project Number: 8520.142
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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 BEL0580 - General Preparation

Blank (BEL0580-BLK1)

Prepared & Analyzed: 12/27/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BEL0580-DUP1)

Source: 2112388-01

Prepared & Analyzed: 12/27/21

Total Dissolved Solids 1850 10.0 mg/L 1850 0.216 20

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Project Manager: James Miller

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01/07/22 15:24

Notes and Definitions

- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- 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.
- QM-02 The RPD and/or percent recovery for this QC 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