

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 18, 2020

Maggie Graham
Extraction Oil&Gas
370 17th Street Suite 5300
Denver, CO 80202
RE: Box Elder M1
Work Order #2002084

Enclosed are the results of analyses for samples received by Summit Scientific on 02/12/20 12:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized initial "M".

Muri Premer For Paul Shrewsbury
President



Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
Project Manager: Maggie Graham

Reported:
02/18/20 11:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@3	2002084-01	Soil	02/12/20 11:05	02/12/20 12:25
E01@3	2002084-02	Soil	02/12/20 11:07	02/12/20 12:25
W01@3	2002084-03	Soil	02/12/20 11:09	02/12/20 12:25
S01@3	2002084-04	Soil	02/12/20 11:11	02/12/20 12:25
B01@5.5	2002084-05	Soil	02/12/20 11:13	02/12/20 12:25

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2008084

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: APEX Companies, LLC
Address: 176 Cole Blvd. Suite 250
City/State/Zip: Lakewood, Colorado 80101
Phone: 720-501-5065 Fax:
Sampler Name: Karin Ambrose

Project Manager: Maggie Graham 720-501-5065; 907-538-7699c
E-Mail: DenverRemediation@ApexCos.onmicrosoft.com
Project Name: Box Elder MI
Project Number: 744.2001-01-319879

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BIEX + BPH	EC, SAR, PH	Rush (Sample)		
N01 E3	2/12/20	1105	1			X			X			X				Call Maggie Graham with questions
E01 E3	↓	1107	↓										X			
W01 E3	↓	1109	↓													
S01 E3	↓	1111	↓													
B01 E5.5	↓	1113	↓									X	X			
Relinquished by: <u>[Signature]</u> Date/Time: <u>2/12/20 12:25</u>			Received by: <u>[Signature]</u> Date/Time: <u>2-12-20 12:25</u>			Turn Around Time (Check)				Notes						
						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"/>				Circle applicable regulatory agency: COGOC/CDPHE						
Relinquished by:			Received in Lab by:			Sample Integrity:				Client Name: <u>XOB on Ice</u>						
Date/Time:			Date/Time:			Temperature Upon Receipt: <u>4.38</u>										
						Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>										

Sample Receipt Checklist

S2 Work Order 2009084
 Client: Apex Companies Client Project ID: Box Elder MI
 Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____
 Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	4.3°C
-----------	-------

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"/>	oday lat
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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

Eric A		2-12-2009 12:25
Custodian Printed Name or Initials	Signature of Custodian	Date/Time



Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
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Reported:
02/18/20 11:52

N01@3
2002084-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/20 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.012	0.0020	mg/kg	1	2002135	02/13/20	02/13/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.069	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.64	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	22	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/20 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		149 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/20 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	110	50	mg/kg	1	2002136	02/13/20	02/13/20	EPA 8015M	

Date Sampled: **02/12/20 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.3 %	30-150		"	"	"	"	

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Reported:
02/18/20 11:52

E01@3
2002084-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/20 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.72	0.020	mg/kg	10	2002118	02/12/20	02/12/20	EPA 8260B	
Toluene	ND	0.0050	"	1	"	"	"	"	
Ethylbenzene	0.71	0.050	"	10	"	"	"	"	
Xylenes (total)	3.6	0.10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	390	5.0	"	"	"	"	"	"	

Date Sampled: **02/12/20 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		154 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		137 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/20 11:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	690	50	mg/kg	1	2002119	02/12/20	02/12/20	EPA 8015M	

Date Sampled: **02/12/20 11:07**

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

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Reported:
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W01@3
2002084-03 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/20 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002135	02/13/20	02/13/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.8	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/20 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/20 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	51	50	mg/kg	1	2002136	02/13/20	02/13/20	EPA 8015M	

Date Sampled: **02/12/20 11:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

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Reported:
02/18/20 11:52

S01@3
2002084-04 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002135	02/13/20	02/13/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/12/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2002136	02/13/20	02/13/20	EPA 8015M	

Date Sampled: **02/12/20 11:11**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.4 %	30-150		"	"	"	"	

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Reported:
02/18/20 11:52

B01@5.5
2002084-05 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2002118	02/12/20	02/12/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.32	0.0050	"	"	"	"	"	"	
Xylenes (total)	2.2	0.10	"	10	"	"	"	"	
Gasoline Range Hydrocarbons	80	5.0	"	"	"	"	"	"	

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		83.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		129 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	3100	50	mg/kg	1	2002119	02/12/20	02/12/20	EPA 8015M	

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		152 %	30-150		"	"	"	"	S-02

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1530	11.8	mg/kg dry	1	2002121	02/12/20	02/12/20	EPA 6020B	
Magnesium	567	5.90	"	"	"	"	"	"	
Sodium	807	5.90	"	"	"	"	"	"	

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B01@5.5
2002084-05 (Soil)

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Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Calculated Analysis

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.48	0.100	units	1	2002124	02/12/20	02/12/20	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.8		%	1	2002122	02/12/20	02/13/20	Calculation	
pH	8.45		pH Units	"	2002113	02/12/20	02/12/20	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **02/12/20 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.33	0.0100	mmhos/cm	1	2002114	"	02/12/20	EPA 120.1	

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Reported:
02/18/20 11:52

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 2002118 - EPA 5030 Soil MS

Blank (2002118-BLK1)

Prepared & Analyzed: 02/12/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0433		"	0.0400		108	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

LCS (2002118-BS1)

Prepared & Analyzed: 02/12/20

Benzene	0.0968	0.0020	mg/kg	0.100		96.8	70-130			
Toluene	0.106	0.0050	"	0.100		106	70-130			
Ethylbenzene	0.105	0.0050	"	0.100		105	70-130			
m,p-Xylene	0.190	0.010	"	0.200		94.9	70-130			
o-Xylene	0.100	0.0050	"	0.100		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400		91.8	21-167			

Matrix Spike (2002118-MS1)

Source: 2002083-01

Prepared & Analyzed: 02/12/20

Benzene	0.0961	0.0020	mg/kg	0.100	ND	96.1	70-130			
Toluene	0.105	0.0050	"	0.100	ND	105	70-130			
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
m,p-Xylene	0.199	0.010	"	0.200	ND	99.7	70-130			
o-Xylene	0.108	0.0050	"	0.100	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0406		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0372		"	0.0400		93.0	21-167			

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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 2002118 - EPA 5030 Soil MS

Matrix Spike Dup (2002118-MSD1)

Source: 2002083-01

Prepared & Analyzed: 02/12/20

Benzene	0.0910	0.0020	mg/kg	0.100	ND	91.0	70-130	5.39	30	
Toluene	0.100	0.0050	"	0.100	ND	100	70-130	4.22	30	
Ethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	3.36	30	
m,p-Xylene	0.193	0.010	"	0.200	ND	96.3	70-130	3.43	30	
o-Xylene	0.103	0.0050	"	0.100	ND	103	70-130	4.70	30	
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	21-167			

Batch 2002135 - EPA 5030 Soil MS

Blank (2002135-BLK1)

Prepared & Analyzed: 02/13/20

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

LCS (2002135-BS1)

Prepared & Analyzed: 02/13/20

Benzene	0.0776	0.0020	mg/kg	0.100		77.6	70-130			
Toluene	0.0877	0.0050	"	0.100		87.7	70-130			
Ethylbenzene	0.0922	0.0050	"	0.100		92.2	70-130			
m,p-Xylene	0.213	0.010	"	0.200		106	70-130			
o-Xylene	0.0986	0.0050	"	0.100		98.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

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02/18/20 11:52

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 2002135 - EPA 5030 Soil MS

Matrix Spike (2002135-MS1)	Source: 2002084-01			Prepared & Analyzed: 02/13/20						
Benzene	0.0928	0.0020	mg/kg	0.100	0.0117	81.1	70-130			
Toluene	0.0936	0.0050	"	0.100	ND	93.6	70-130			
Ethylbenzene	0.193	0.0050	"	0.100	0.0690	124	70-130			
m,p-Xylene	0.799	0.010	"	0.200	0.625	86.5	70-130			
o-Xylene	0.0968	0.0050	"	0.100	0.0194	77.5	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0438</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0360</i>		<i>"</i>	<i>0.0400</i>		<i>90.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0480</i>		<i>"</i>	<i>0.0400</i>		<i>120</i>	<i>21-167</i>			

Matrix Spike Dup (2002135-MSD1)	Source: 2002084-01			Prepared & Analyzed: 02/13/20						
Benzene	0.0934	0.0020	mg/kg	0.100	0.0117	81.7	70-130	0.612	30	
Toluene	0.0986	0.0050	"	0.100	ND	98.6	70-130	5.12	30	
Ethylbenzene	0.171	0.0050	"	0.100	0.0690	102	70-130	12.0	30	
m,p-Xylene	0.827	0.010	"	0.200	0.625	101	70-130	3.54	30	
o-Xylene	0.0956	0.0050	"	0.100	0.0194	76.3	70-130	1.22	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0432</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>92.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
Project Manager: Maggie Graham

Reported:
02/18/20 11:52

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 2002119 - EPA 3550A

Blank (2002119-BLK1)				Prepared & Analyzed: 02/12/20							
C10-C28 (DRO)	ND	50	mg/kg								
LCS (2002119-BS1)				Prepared & Analyzed: 02/12/20							
C10-C28 (DRO)	532	50	mg/kg	500	106	70-130					
Matrix Spike (2002119-MS1)				Source: 2002083-01		Prepared & Analyzed: 02/12/20					
C10-C28 (DRO)	463	50	mg/kg	500	ND	92.7	70-130				
Matrix Spike Dup (2002119-MSD1)				Source: 2002083-01		Prepared & Analyzed: 02/12/20					
C10-C28 (DRO)	467	50	mg/kg	500	ND	93.4	70-130	0.817	20		

Batch 2002136 - EPA 3550A

Blank (2002136-BLK1)				Prepared & Analyzed: 02/13/20							
C10-C28 (DRO)	ND	50	mg/kg								
LCS (2002136-BS1)				Prepared & Analyzed: 02/13/20							
C10-C28 (DRO)	570	50	mg/kg	500	114	70-130					
Matrix Spike (2002136-MS1)				Source: 2002084-01		Prepared & Analyzed: 02/13/20					
C10-C28 (DRO)	937	50	mg/kg	500	112	165	70-130				QM-07
Matrix Spike Dup (2002136-MSD1)				Source: 2002084-01		Prepared & Analyzed: 02/13/20					
C10-C28 (DRO)	500	50	mg/kg	500	112	77.6	70-130	60.7	20		QM-07

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Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

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Reported:
02/18/20 11:52

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

Summit Scientific

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

Batch 2002121 - General Preparation

Blank (2002121-BLK1)

Prepared & Analyzed: 02/12/20

Calcium	ND	10.0	mg/kg wet							
Magnesium	ND	5.00	"							
Sodium	ND	5.00	"							

LCS (2002121-BS1)

Prepared & Analyzed: 02/12/20

Calcium	491	10.0	mg/kg wet	500		98.3	70-130			
Magnesium	544	5.00	"	500		109	70-130			
Sodium	498	5.00	"	500		99.6	70-130			

Duplicate (2002121-DUP1)

Source: 2002084-05

Prepared & Analyzed: 02/12/20

Calcium	1790	11.8	mg/kg dry		1530			15.5	20	
Magnesium	585	5.90	"		567			3.22	20	
Sodium	811	5.90	"		807			0.535	20	

Matrix Spike (2002121-MS1)

Source: 2002084-05

Prepared & Analyzed: 02/12/20

Calcium	2260	11.8	mg/kg dry	590	1530	124	70-130			
Magnesium	987	5.90	"	590	567	71.3	70-130			
Sodium	1330	5.90	"	590	807	87.9	70-130			

Matrix Spike Dup (2002121-MSD1)

Source: 2002084-05

Prepared & Analyzed: 02/12/20

Calcium	2100	11.8	mg/kg dry	590	1530	97.1	70-130	7.17	25	
Magnesium	992	5.90	"	590	567	72.1	70-130	0.488	25	
Sodium	1290	5.90	"	590	807	82.2	70-130	2.58	25	

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Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
Project Manager: Maggie Graham

Reported:
02/18/20 11:52

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 2002113 - General Preparation

LCS (2002113-BS1)

Prepared & Analyzed: 02/12/20

pH 9.20 pH Units 9.18 100 95-105

Duplicate (2002113-DUP1)

Source: 2002083-01

Prepared & Analyzed: 02/12/20

pH 8.79 pH Units 8.81 0.227 20

Batch 2002122 - General Preparation

Duplicate (2002122-DUP1)

Source: 2002084-05

Prepared: 02/12/20 Analyzed: 02/13/20

% Solids 86.9 % 84.8 2.45 20

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Extraction Oil&Gas
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Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
Project Manager: Maggie Graham

Reported:
02/18/20 11:52

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 2002114 - General Preparation

Blank (2002114-BLK1)

Prepared & Analyzed: 02/12/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (2002114-BS1)

Prepared & Analyzed: 02/12/20

Specific Conductance (EC) 0.780 0.0100 mmhos/cm 0.750 104 90-110

Duplicate (2002114-DUP1)

Source: 2002083-01

Prepared & Analyzed: 02/12/20

Specific Conductance (EC) 0.948 0.0100 mmhos/cm 0.958 0.997 20

Summit Scientific



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Extraction Oil&Gas
370 17th Street Suite 5300
Denver CO, 80202

Project: Box Elder M1
Project Number: 744. 2001-01-319879
Project Manager: Maggie Graham

Reported:
02/18/20 11:52

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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