

**Attachment A**

**Laboratory Analytical Report**

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 30, 2020

Maggie Graham

Extraction Oil&Gas

370 17th Street Suite 5300

Denver, CO 80202

RE: Rinn Valley Water Spill

Work Order #2007270

Enclosed are the results of analyses for samples received by Summit Scientific on 07/29/20 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



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

Project: Rinn Valley Water Spill

Project Number: [none]

Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@3"	2007270-01	Soil	07/29/20 14:48	07/29/20 16:25

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.*

# Summit Scientific

2007270

S<sub>2</sub>

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

Page 1 of 1

Client: Apex Companies LLC

Project Manager: Maggie Graham 720-501-5065

Address: ON File

E-Mail: Denver Remediation, Josh Carlisk

City/State/Zip: ON File

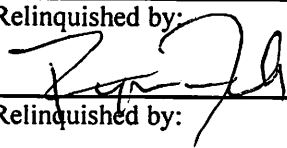
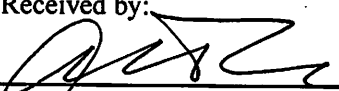
Phone:

Project Name: Rinn Valley Water Spill

Sampler Name: Ryan Finley

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions		
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	TPH	BTEX	pH	EC	SAR		HOLD	
1	B01@3"	7/29/20	1448	1			X			X				X	X	X	X	X		
2	B02@3"	↓	1449	↓															X	
3	CO1	↓	1447	↓															X	
4																				
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 7/29/20 1625	Received by: 	Date/Time: 7-29-2020 1625	<b>Turn Around Time</b> (Check) Same Day <input checked="" type="checkbox"/> 72 hours 24 hours <input type="checkbox"/> Standard 48 hours <input type="checkbox"/> <b>Sample Integrity:</b> Temperature Upon Receipt: 18.5° Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	<b>Notes:</b> XOG COGCC
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order 2007270

Client: Agex/XO9 Client Project ID: Rinn Valley Water Spill

Shipped Via: (H.D.) P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_

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

Temp (°C)	<u>19.5</u>
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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 <sup>(1)</sup> ? 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"/>			on ice
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input checked="" type="checkbox"/>			Same Day
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<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.

AT  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

7-29-2020  
Date/Time



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

Project: Rinn Valley Water Spill

Project Number: [none]  
Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

**B01@3"**  
**2007270-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2007313	07/29/20	07/29/20	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		66.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		80.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2007314	07/29/20	07/29/20	EPA 8015M	

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

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

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	<b>2400</b>	11.0	mg/kg dry	1	2007319	07/29/20	07/29/20	EPA 6020B	
Magnesium	<b>522</b>	5.48	"	"	"	"	"	"	

Summit Scientific

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Denver CO, 80202

Project: Rinn Valley Water Spill

Project Number: [none]  
Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

**B01@3"**  
**2007270-01 (Soil)**

**Summit Scientific**

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

<b>Sodium</b>	<b>229</b>	5.48	mg/kg dry	1	2007319	07/29/20	07/29/20	EPA 6020B
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**Calculated Analysis**

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>1.10</b>	0.100	units	1	2007324	07/30/20	07/30/20	Calculation	

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

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>91.2</b>		%	1	2007303	07/29/20	07/30/20	Calculation	
<b>pH</b>	<b>8.34</b>		pH Units	"	2007304	"	07/29/20	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/29/20 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.23</b>	0.0100	mmhos/cm	1	2007305	"	07/29/20	EPA 120.1	

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370 17th Street Suite 5300  
Denver CO, 80202

Project: Rinn Valley Water Spill

Project Number: [none]  
Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

### 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 2007313 - EPA 5030 Soil MS

##### Blank (2007313-BLK1)

Prepared & Analyzed: 07/29/20

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	0.0218		"	0.0400		54.4	23-173			
Surrogate: Toluene-d8	0.0312		"	0.0400		78.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

##### LCS (2007313-BS1)

Prepared & Analyzed: 07/29/20

Benzene	0.0705	0.0020	mg/kg	0.0750		94.0	70-130			
Toluene	0.0810	0.0050	"	0.0750		108	70-130			
Ethylbenzene	0.0651	0.0050	"	0.0750		86.8	70-130			
m,p-Xylene	0.127	0.010	"	0.150		84.9	70-130			
o-Xylene	0.0663	0.0050	"	0.0750		88.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0175		"	0.0400		43.6	23-173			
Surrogate: Toluene-d8	0.0328		"	0.0400		81.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

##### Matrix Spike (2007313-MS1)

Source: 2007255-02

Prepared & Analyzed: 07/29/20

Benzene	0.0726	0.0020	mg/kg	0.0750	ND	96.8	70-130			
Toluene	0.0669	0.0050	"	0.0750	ND	89.2	70-130			
Ethylbenzene	0.0706	0.0050	"	0.0750	ND	94.1	70-130			
m,p-Xylene	0.140	0.010	"	0.150	ND	93.3	70-130			
o-Xylene	0.0745	0.0050	"	0.0750	ND	99.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0213		"	0.0400		53.2	23-173			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0434		"	0.0400		109	21-167			

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**Reported:**  
07/30/20 08:24

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

**Summit Scientific**

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

**Batch 2007313 - EPA 5030 Soil MS**

**Matrix Spike Dup (2007313-MSD1)**

Source: 2007255-02

Prepared & Analyzed: 07/29/20

Benzene	0.0722	0.0020	mg/kg	0.0750	ND	96.2	70-130	0.580	30	
Toluene	0.0658	0.0050	"	0.0750	ND	87.8	70-130	1.54	30	
Ethylbenzene	0.0712	0.0050	"	0.0750	ND	94.9	70-130	0.889	30	
m,p-Xylene	0.138	0.010	"	0.150	ND	92.0	70-130	1.49	30	
o-Xylene	0.0724	0.0050	"	0.0750	ND	96.6	70-130	2.82	30	
Surrogate: 1,2-Dichloroethane-d4	0.0218		"	0.0400		54.4	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0456		"	0.0400		114	21-167			

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Project Number: [none]  
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**Reported:**  
07/30/20 08:24

**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 2007314 - EPA 3550A**

**Blank (2007314-BLK1)**

Prepared & Analyzed: 07/29/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2007314-BS1)**

Prepared & Analyzed: 07/29/20

C10-C28 (DRO) 430 50 mg/kg 500 86.1 70-130

**Matrix Spike (2007314-MS1)**

Source: 2007255-02

Prepared & Analyzed: 07/29/20

C10-C28 (DRO) 764 50 mg/kg 500 579 36.9 70-130 QM-07

**Matrix Spike Dup (2007314-MSD1)**

Source: 2007255-02

Prepared & Analyzed: 07/29/20

C10-C28 (DRO) 729 50 mg/kg 500 579 30.0 70-130 4.66 20 QM-07

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370 17th Street Suite 5300  
Denver CO, 80202

Project: Rinn Valley Water Spill

Project Number: [none]  
Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

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

**Summit Scientific**

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

**Batch 2007319 - General Preparation**

**Blank (2007319-BLK1)**

Prepared & Analyzed: 07/29/20

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

**LCS (2007319-BS1)**

Prepared & Analyzed: 07/29/20

Calcium	547	10.0	mg/kg wet	500		109	70-130			
Magnesium	562	5.00	"	500		112	70-130			
Sodium	552	5.00	"	500		110	70-130			

**Duplicate (2007319-DUP1)**

Source: 2007256-04

Prepared & Analyzed: 07/29/20

Calcium	2350	12.7	mg/kg dry		2270			3.66	20	
Magnesium	624	6.36	"		542			14.1	20	
Sodium	179	6.36	"		188			5.03	20	

**Matrix Spike (2007319-MS1)**

Source: 2007256-04

Prepared & Analyzed: 07/29/20

Calcium	2840	12.7	mg/kg dry	636	2270	89.7	70-130			
Magnesium	1180	6.36	"	636	542	100	70-130			
Sodium	783	6.36	"	636	188	93.4	70-130			

**Matrix Spike Dup (2007319-MSD1)**

Source: 2007256-04

Prepared & Analyzed: 07/29/20

Calcium	2870	12.7	mg/kg dry	636	2270	95.6	70-130	1.33	25	
Magnesium	1160	6.36	"	636	542	97.3	70-130	1.46	25	
Sodium	770	6.36	"	636	188	91.5	70-130	1.62	25	

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370 17th Street Suite 5300  
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Project: Rinn Valley Water Spill

Project Number: [none]  
Project Manager: Maggie Graham

**Reported:**  
07/30/20 08:24

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

**Summit Scientific**

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

**Batch 2007303 - General Preparation**

<b>Duplicate (2007303-DUP1)</b>		<b>Source: 2007242-01</b>			<b>Prepared &amp; Analyzed: 07/29/20</b>					
% Solids	93.8		%		93.7		0.107	20		

**Batch 2007304 - General Preparation**

<b>LCS (2007304-BS1)</b>					<b>Prepared &amp; Analyzed: 07/29/20</b>					
pH	9.21		pH Units	9.18	100	95-105				
<b>Duplicate (2007304-DUP1)</b>		<b>Source: 2007253-01</b>			<b>Prepared &amp; Analyzed: 07/29/20</b>					
pH	8.57		pH Units	8.55		0.234	20			

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 370 17th Street Suite 5300  
 Denver CO, 80202

Project: Rinn Valley Water Spill

Project Number: [none]  
 Project Manager: Maggie Graham

**Reported:**  
 07/30/20 08:24

**Specific Conductance by EPA Method 120.1 - Quality Control**

**Summit Scientific**

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

**Batch 2007305 - General Preparation**

**Blank (2007305-BLK1)**

Prepared & Analyzed: 07/29/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (2007305-BS1)**

Prepared & Analyzed: 07/29/20

Specific Conductance (EC) 0.806 0.0100 mmhos/cm 0.750 107 90-110

**Duplicate (2007305-DUP1)**

Source: 2007253-01

Prepared & Analyzed: 07/29/20

Specific Conductance (EC) 0.483 0.0100 mmhos/cm 0.485 0.455 20

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Project Number: [none]

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**Reported:**  
07/30/20 08:24

### Notes and Definitions

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