

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 22, 2019

Jeremy Pike

LT Environmental, Inc.

4600 West 60th Avenue

Arvada, CO 80003

RE: Vic 1

Work Order # 1907141

Enclosed are the results of analyses for samples received by Summit Scientific on 07/12/19 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@6'	1907141-01	Soil	07/11/19 13:45	07/12/19 09:30
SS02@5'	1907141-02	Soil	07/11/19 13:50	07/12/19 09:30

Summit Scientific

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# Summit Scientific

S<sub>2</sub>

1907141

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: LT Environmental, Inc.

Project Manager: Jeremy Pike

Address: 4600 West 60th Avenue

E-Mail: jpik@ltenv.com

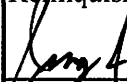
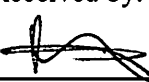
City/State/Zip: Arvada, Colorado 80003

Phone: 303-433-9788

Project Name: Vic 1

Sampler Name:

Project Number: 027318139

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	GBTEX	TPH-DRO	EC	PH	SAR			
1	SS01 @ 6'	7/11/19	1345	1			X			X				X	X	X	X			<p><del>Hold SAR</del>            General Results            7-12-19</p>
2	SS02 @ 5'	7/11/19	1350	1			X			X				X	X					
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
Relinquished by: 		Date/Time: 7/12/19 0930		Received by: 		Date/Time: 7-12-19 9:30		Turn Around Time (Check)												
Relinquished by:		Date/Time:		Received by:		Date/Time:		Same Day _____		72 hours _____										
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours _____		Standard X _____										
Relinquished by:		Date/Time:		Received by:		Date/Time:		48 hours _____		Sample Integrity:										
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt: 4.7		Samples Intact: Yes										
Relinquished by:		Date/Time:		Received by:		Date/Time:		No												

1907141

## Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: Lt Environmental Client Project ID: Vic 1Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_
☐ ☒ ☐ ☐ ☐
Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	4.7
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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 <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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ? 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 <sup>(1)</sup> ? 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):

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

MP

Custodian Printed Name or Initials

*Muri Presmer*

Signature of Custodian

7/12/19

Date/Time



LT Environmental, Inc.  
4600 West 60th Avenue  
Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

Reported:  
07/22/19 07:23

**SS01@6'**  
**1907141-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	13	0.20	mg/kg	100	1907187	07/15/19	07/17/19	EPA 8260B	
Toluene	1.0	0.50	"	"	"	"	"	"	
Ethylbenzene	110	0.50	"	"	"	"	"	"	
Xylenes (total)	690	10	"	1000	"	"	"	"	
Gasoline Range Hydrocarbons	14000	50	"	100	"	"	"	"	

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	194 %	23-173	"	"	"	"	"	"	S-02
Surrogate: Toluene-d8	112 %	20-170	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	445 %	21-167	"	"	"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	2300	50	mg/kg	1	1907205	07/16/19	07/17/19	EPA 8015M	

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	88.2 %	30-150	"	"	"	"	"	"	

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

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	177	11.8	mg/kg dry	1	1907244	07/17/19	07/17/19	EPA 6020B	
Magnesium	136	5.89	"	"	"	"	"	"	
Sodium	153	5.89	"	"	"	"	"	"	

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Arvada CO, 80003

Project: Vic 1  
Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

**SS01@6'**  
**1907141-01 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.10	0.100	units	1	1907259	07/18/19	07/18/19	Calculation	

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

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.9		%	1	1907209	07/16/19	07/16/19	Calculation	
pH	8.37		pH Units	"	1907225	07/17/19	07/17/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/11/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.266	0.0100	mmhos/cm	1	1907224	07/17/19	07/17/19	EPA 120.1	

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Arvada CO, 80003

Project: Vic 1  
Project Number: 027318139  
Project Manager: Jeremy Pike

Reported:  
07/22/19 07:23

**SS02@5'**  
**1907141-02 (Soil)**

**Summit Scientific**

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

**R-01**

Date Sampled: **07/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.020	mg/kg	10	1907187	07/15/19	07/17/19	EPA 8260B	
<b>Toluene</b>	<b>0.24</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.074</b>	0.050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>92</b>	1.0	"	100	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>3800</b>	50	"	"	"	"	"	"	

Date Sampled: **07/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		113 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		210 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
<b>C10-C28 (DRO)</b>	<b>1700</b>	50	mg/kg	1	1907205	07/16/19	07/17/19	EPA 8015M	

Date Sampled: **07/11/19 13:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		188 %	30-150		"	"	"	"	S-02

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Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

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

### Summit Scientific

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

#### Batch 1907187 - EPA 5030 Soil MS

##### Blank (1907187-BLK1)

Prepared: 07/15/19 Analyzed: 07/17/19

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	0.0392		"	0.0400		98.0	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400		103	21-167			

##### LCS (1907187-BS1)

Prepared: 07/15/19 Analyzed: 07/17/19

Benzene	0.0757	0.0020	mg/kg	0.100		75.7	70-130			
Toluene	0.0848	0.0050	"	0.100		84.8	70-130			
Ethylbenzene	0.0800	0.0050	"	0.100		80.0	70-130			
m,p-Xylene	0.168	0.010	"	0.200		83.8	70-130			
o-Xylene	0.0738	0.0050	"	0.100		73.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.6	23-173			
Surrogate: Toluene-d8	0.0464		"	0.0400		116	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

##### Matrix Spike (1907187-MS1)

Source: 1907140-01

Prepared: 07/15/19 Analyzed: 07/17/19

Benzene	0.0755	0.0020	mg/kg	0.100	ND	75.5	70-130			
Toluene	0.0812	0.0050	"	0.100	ND	81.2	70-130			
Ethylbenzene	0.0788	0.0050	"	0.100	ND	78.8	70-130			
m,p-Xylene	0.141	0.010	"	0.200	ND	70.7	70-130			
o-Xylene	0.0747	0.0050	"	0.100	ND	74.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.8	23-173			
Surrogate: Toluene-d8	0.0455		"	0.0400		114	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	21-167			

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4600 West 60th Avenue  
Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

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

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

**Batch 1907187 - EPA 5030 Soil MS**

**Matrix Spike Dup (1907187-MSD1)**

**Source: 1907140-01**

Prepared: 07/15/19 Analyzed: 07/17/19

Benzene	0.0704	0.0020	mg/kg	0.100	ND	70.4	70-130	7.04	30	
Toluene	0.0866	0.0050	"	0.100	ND	86.6	70-130	6.47	30	
Ethylbenzene	0.0722	0.0050	"	0.100	ND	72.2	70-130	8.70	30	
m,p-Xylene	0.147	0.010	"	0.200	ND	73.4	70-130	3.69	30	
o-Xylene	0.0761	0.0050	"	0.100	ND	76.1	70-130	1.87	30	
Surrogate: 1,2-Dichloroethane-d4	0.0361		"	0.0400		90.2	23-173			
Surrogate: Toluene-d8	0.0460		"	0.0400		115	20-170			
Surrogate: 4-Bromofluorobenzene	0.0384		"	0.0400		96.1	21-167			

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Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1907205 - EPA 3550A**

**Blank (1907205-BLK1)**

Prepared & Analyzed: 07/16/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907205-BS1)**

Prepared & Analyzed: 07/16/19

C10-C28 (DRO) 503 50 mg/kg 500 101 70-130

**Matrix Spike (1907205-MS1)**

**Source: 1907130-18**

Prepared & Analyzed: 07/16/19

C10-C28 (DRO) 519 50 mg/kg 500 ND 104 70-130

**Matrix Spike Dup (1907205-MSD1)**

**Source: 1907130-18**

Prepared & Analyzed: 07/16/19

C10-C28 (DRO) 503 50 mg/kg 500 ND 101 70-130 3.14 20

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Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

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

**Summit Scientific**

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

**Batch 1907244 - General Preparation**

**Blank (1907244-BLK1)**

Prepared & Analyzed: 07/17/19

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

**LCS (1907244-BS1)**

Prepared & Analyzed: 07/17/19

Calcium	550	10.0	mg/kg wet	500	110	70-130
Magnesium	550	5.00	"	500	110	70-130
Sodium	538	5.00	"	500	108	70-130

**Duplicate (1907244-DUP1)**

Source: 1907141-01

Prepared & Analyzed: 07/17/19

Calcium	162	11.8	mg/kg dry	177	8.65	20
Magnesium	126	5.89	"	136	7.85	20
Sodium	130	5.89	"	153	16.8	20

**Matrix Spike (1907244-MS1)**

Source: 1907141-01

Prepared & Analyzed: 07/17/19

Calcium	687	11.8	mg/kg dry	589	177	86.5	70-130
Magnesium	710	5.89	"	589	136	97.3	70-130
Sodium	720	5.89	"	589	153	96.1	70-130

**Matrix Spike Dup (1907244-MSD1)**

Source: 1907141-01

Prepared & Analyzed: 07/17/19

Calcium	723	11.8	mg/kg dry	589	177	92.6	70-130	5.08	25
Magnesium	740	5.89	"	589	136	102	70-130	4.18	25
Sodium	755	5.89	"	589	153	102	70-130	4.77	25

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Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

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

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

**Batch 1907209 - General Preparation**

**Duplicate (1907209-DUP1)**

**Source: 1907141-01**

Prepared & Analyzed: 07/16/19

% Solids	84.5	%		84.9		0.388	20
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**Batch 1907225 - General Preparation**

**LCS (1907225-BS1)**

Prepared & Analyzed: 07/17/19

pH	9.42	pH Units		9.23		102	95-105
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**Duplicate (1907225-DUP1)**

**Source: 1907141-01**

Prepared & Analyzed: 07/17/19

pH	8.34	pH Units		8.37		0.359	20
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4600 West 60th Avenue  
Arvada CO, 80003

Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

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

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

**Batch 1907224 - General Preparation**

**Blank (1907224-BLK1)**

Prepared & Analyzed: 07/17/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1907224-BS1)**

Prepared & Analyzed: 07/17/19

Specific Conductance (EC) 0.744 0.0100 mmhos/cm 0.750 99.1 90-110

**Duplicate (1907224-DUP1)**

**Source: 1907141-01**

Prepared & Analyzed: 07/17/19

Specific Conductance (EC) 0.266 0.0100 mmhos/cm 0.266 0.150 20

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Project: Vic 1

Project Number: 027318139  
Project Manager: Jeremy Pike

**Reported:**  
07/22/19 07:23

### 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.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
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