

Summit Scientific

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June 02, 2016

Rob Rebel
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: Hawkins 5-61-21

Enclosed are the results of analyses for samples received by Summit Scientific on 05/27/16 10:15. 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, flowing script.

Paul Shrewsbury
President



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

Project: Hawkins 5-61-21

Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@0-1'	1605264-01	Soil	05/25/16 10:20	05/27/16 10:15
SS02@0-1'	1605264-02	Soil	05/25/16 10:30	05/27/16 10:15

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A handwritten signature in black ink, appearing to be 'MSM'.

Page 2 of 13



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

Project: Hawkins 5-61-21

Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

SS01@0-1'
1605264-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1605303	05/31/16	06/01/16	8015M	

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1605308	05/31/16	06/01/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		125 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Hawkins 5-61-21

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Reported:
06/02/16 12:19

SS01@0-1'
1605264-01 (Soil)

Summit Scientific

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

Calcium	1460	12.0 mg/kg dry	1	1605299	05/31/16	06/01/16	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	342	6.00	"	"	"	"	"
Sodium	133	6.00	"	"	"	"	"

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.814		units	"	1606011	06/02/16	06/02/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.590	0.0100	mmhos/cm	1	1606006	06/01/16	06/01/16	SM 2510B	

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.67	0.100	pH Units	"	1606005	06/01/16	06/01/16	EPA 9045	

Date Sampled: 05/25/16 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.3		%	"	1606002	06/01/16	06/01/16	% calculation	

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Project: Hawkins 5-61-21

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Reported:
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SS02@0-1'
1605264-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1605303	05/31/16	06/01/16	8015M	

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1605308	05/31/16	06/01/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

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

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Hawkins 5-61-21

Project Number: 027314025
Project Manager: Rob Rebel

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SS02@0-1'
1605264-02 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	636	12.2	mg/kg dry	1	1605299	05/31/16	06/01/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	119	6.10	"	"	"	"	"	"	
Sodium	269	6.10	"	"	"	"	"	"	

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.57		units	"	1606011	06/02/16	06/02/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.741	0.0100	mmhos/cm	1	1606006	06/01/16	06/01/16	SM 2510B	

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.17	0.100	pH Units	"	1606005	06/01/16	06/01/16	EPA 9045	

Date Sampled: 05/25/16 10:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.0		%	"	1606002	06/01/16	06/01/16	% calculation	

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Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1605303 - EPA 3550A

Blank (1605303-BLK1)

Prepared: 05/31/16 Analyzed: 06/01/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 13.3 " 12.5 107 30-150

LCS (1605303-BS1)

Prepared: 05/31/16 Analyzed: 06/01/16

C10-C28 (DRO) 549 50 mg/kg 499 110 73-134

Surrogate: o-Terphenyl 13.4 " 12.5 107 30-150

Matrix Spike (1605303-MS1)

Source: 1605263-01

Prepared: 05/31/16 Analyzed: 06/01/16

C10-C28 (DRO) 543 50 mg/kg 499 ND 109 50-148

Surrogate: o-Terphenyl 13.6 " 12.5 109 30-150

Matrix Spike Dup (1605303-MSD1)

Source: 1605263-01

Prepared: 05/31/16 Analyzed: 06/01/16

C10-C28 (DRO) 544 50 mg/kg 499 ND 109 50-148 0.193 13

Surrogate: o-Terphenyl 13.6 " 12.5 109 30-150

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Project: Hawkins 5-61-21
Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

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 1605308 - EPA 5030 Soil MS

Blank (1605308-BLK1)

Prepared & Analyzed: 05/31/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0420		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

LCS (1605308-BS1)

Prepared & Analyzed: 05/31/16

Benzene	0.0907	0.0020	mg/kg	0.100		90.7	58-130			
Toluene	0.0943	0.0050	"	0.100		94.3	61-134			
Ethylbenzene	0.0860	0.0050	"	0.0992		86.6	74-139			
m,p-Xylene	0.162	0.010	"	0.200		81.3	73-137			
o-Xylene	0.0780	0.0050	"	0.0980		79.6	73-141			
Xylenes (total)	0.240	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.75	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0363		"	0.0400		90.8	23-173			
Surrogate: Toluene-d8	0.0497		"	0.0400		124	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

Matrix Spike (1605308-MS1)

Source: 1605252-01

Prepared & Analyzed: 05/31/16

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	30-131			
Toluene	0.116	0.0050	"	0.100	ND	116	30-134			
Ethylbenzene	0.112	0.0050	"	0.0992	ND	113	22-153			
m,p-Xylene	0.214	0.010	"	0.200	ND	107	10-159			
o-Xylene	0.103	0.0050	"	0.0980	ND	105	31-151			
Xylenes (total)	0.317	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.29	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0415		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0472		"	0.0400		118	20-170			
Surrogate: 4-Bromofluorobenzene	0.0417		"	0.0400		104	21-167			

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Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

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 1605308 - EPA 5030 Soil MS

Matrix Spike Dup (1605308-MSD1)			Source: 1605252-01		Prepared & Analyzed: 05/31/16					
Benzene	0.120	0.0020	mg/kg	0.100	ND	120	30-131	10.3	34	
Toluene	0.127	0.0050	"	0.100	ND	127	30-134	9.16	30	
Ethylbenzene	0.138	0.0050	"	0.0992	ND	139	22-153	21.1	24	
m,p-Xylene	0.262	0.010	"	0.200	ND	131	10-159	20.2	68	
o-Xylene	0.126	0.0050	"	0.0980	ND	129	31-151	20.3	38	
Xylenes (total)	0.388	0.0050	"		ND		30-150	20.3	20	QM-07
Gasoline Range Hydrocarbons	2.88	0.50	"		ND		30-150	22.6	20	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0449		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0426		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

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Project: Hawkins 5-61-21
Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

Soluble Nutrients by EPA 6020/Mod. 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 1605299 - General Preparation

Blank (1605299-BLK1)

Prepared: 05/31/16 Analyzed: 06/01/16

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

LCS (1605299-BS1)

Prepared: 05/31/16 Analyzed: 06/01/16

Calcium	567	10.0	mg/kg wet	500	113	82.9-118
Magnesium	532	5.00	"	500	106	77.1-123
Sodium	557	5.00	"	500	111	71-129

Duplicate (1605299-DUP1)

Source: 1605256-01

Prepared: 05/31/16 Analyzed: 06/01/16

Calcium	11900	11.7	mg/kg dry	11800	1.04	200
Magnesium	417	5.83	"	414	0.746	200
Sodium	764	5.83	"	756	0.991	200

Matrix Spike (1605299-MS1)

Source: 1605256-01

Prepared: 05/31/16 Analyzed: 06/01/16

Calcium	12300	11.7	mg/kg dry	583	11800	80.9	75-125
Magnesium	1010	5.83	"	583	414	102	75-125
Sodium	1370	5.83	"	583	756	106	75-125

Matrix Spike Dup (1605299-MSD1)

Source: 1605256-01

Prepared: 05/31/16 Analyzed: 06/01/16

Calcium	12100	11.7	mg/kg dry	583	11800	59.9	75-125	1.00	25	QM-07
Magnesium	1010	5.83	"	583	414	102	75-125	0.0429	25	
Sodium	1370	5.83	"	583	756	106	75-125	0.0634	25	

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Project: Hawkins 5-61-21

Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

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

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

Batch 1606002 - General Preparation

Duplicate (1606002-DUP1) **Source: 1605279-01** Prepared & Analyzed: 06/01/16

% Solids	87.8		%		87.9			0.0342	20	
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Batch 1606005 - General Preparation

LCS (1606005-BS1) Prepared & Analyzed: 06/01/16

pH	8.01	0.100	pH Units	8.00	100	95-105				
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Duplicate (1606005-DUP1) **Source: 1605264-01** Prepared & Analyzed: 06/01/16

pH	8.81	0.100	pH Units		8.67			1.60	20	
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Batch 1606006 - General Preparation

Blank (1606006-BLK1) Prepared & Analyzed: 06/01/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
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LCS (1606006-BS1) Prepared & Analyzed: 06/01/16

Specific Conductance (EC)	0.487	0.0100	mmhos/cm	0.500	97.4	90-110				
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Duplicate (1606006-DUP1) **Source: 1605264-01** Prepared & Analyzed: 06/01/16

Specific Conductance (EC)	0.600	0.0100	mmhos/cm		0.590			1.77	20	
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Project: Hawkins 5-61-21

Project Number: 027314025
Project Manager: Rob Rebel

Reported:
06/02/16 12:19

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

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A handwritten signature in black ink, appearing to be 'MSM'.