



89

Gordon 1261-28-32 Location

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Summit Scientific

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October 16, 2015

Chris Roy
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: GORDON 1261-32

Enclosed are the results of analyses for samples received by Summit Scientific on 10/15/15 17:25. 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
President



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

Project: GORDON 1261-32

Project Number: 0083-15061
Project Manager: Chris Roy

Reported:
10/16/15 06:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS04@2.5'	1510091-01	Soil	10/15/15 12:25	10/15/15 17:25
SS05@5"	1510091-02	Soil	10/15/15 12:30	10/15/15 17:25

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

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LT Environmental, Inc.
4600 West 60th Avenue
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Project: GORDON 1261-32

Project Number: 0083-15061
Project Manager: Chris Roy

Reported:
10/16/15 06:51

SS04@2.5'
1510091-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1510129	10/15/15	10/15/15	8015M	

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1510128	10/15/15	10/16/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

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

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: GORDON 1261-32

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Reported:
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SS04@2.5'
1510091-01 (Soil)

Summit Scientific

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

Calcium	7630	11.6 mg/kg dry	1	1510130	10/15/15	10/15/15	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	1270	5.81	"	"	"	"	"
Sodium	233	5.81	"	"	"	"	"

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.650		units	"	1510132	10/16/15	10/16/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.628	0.0100 mmhos/cm		1	1510122	10/15/15	10/15/15	SM 2510B	

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.95	0.100	pH Units	"	1510121	10/15/15	"	EPA 9045	

Date Sampled: 10/15/15 12:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	"	1510131	10/15/15	10/16/15	% calculation	

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Project: GORDON 1261-32

Project Number: 0083-15061
Project Manager: Chris Roy

Reported:
10/16/15 06:51

SS05@5"
1510091-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/15/15 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1510129	10/15/15	10/15/15	8015M	

Date Sampled: 10/15/15 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/15/15 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1510128	10/15/15	10/16/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 10/15/15 12:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		109 %	21-167		"	"	"	"	

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Project: GORDON 1261-32

Project Number: 0083-15061
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Reported:
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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 1510129 - EPA 3550A

Blank (1510129-BLK1)

Prepared & Analyzed: 10/15/15

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 12.3 " 12.2 101 30-150

LCS (1510129-BS1)

Prepared & Analyzed: 10/15/15

C10-C28 (DRO) 499 50 mg/kg 499 100 73-134

Surrogate: o-Terphenyl 12.4 " 12.2 102 30-150

Matrix Spike (1510129-MS1)

Source: 1510090-01

Prepared & Analyzed: 10/15/15

C10-C28 (DRO) 589 50 mg/kg 487 98.5 101 50-148

Surrogate: o-Terphenyl 12.7 " 11.9 106 30-150

Matrix Spike Dup (1510129-MSD1)

Source: 1510090-01

Prepared & Analyzed: 10/15/15

C10-C28 (DRO) 588 50 mg/kg 483 98.5 102 50-148 0.174 13

Surrogate: o-Terphenyl 12.5 " 11.8 106 30-150

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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 1510128 - EPA 5030 Soil MS

Blank (1510128-BLK1)

Prepared & Analyzed: 10/15/15

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0452</i>		<i>"</i>	<i>0.0396</i>		<i>114</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

LCS (1510128-BS1)

Prepared & Analyzed: 10/15/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.104	0.0020	"	0.100		104	58-130			
Toluene	0.0954	0.0050	"	0.100		95.4	61-134			
Ethylbenzene	0.104	0.0050	"	0.0992		105	74-139			
m,p-Xylene	0.202	0.010	"	0.200		101	73-137			
o-Xylene	0.108	0.0050	"	0.0984		110	73-141			
Xylenes (total)	0.311	0.010	"				0-200			
Gasoline Range Hydrocarbons	2.05	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0431</i>		<i>"</i>	<i>0.0396</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0439</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>21-167</i>			

Matrix Spike (1510128-MS1)

Source: 1510090-01

Prepared & Analyzed: 10/15/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.104	0.0020	"	0.0954	ND	109	30-131			
Toluene	0.0942	0.0050	"	0.0954	ND	98.7	30-134			
Ethylbenzene	0.108	0.0050	"	0.0947	ND	114	22-153			
m,p-Xylene	0.207	0.010	"	0.190	ND	108	10-159			
o-Xylene	0.114	0.0050	"	0.0939	ND	121	31-151			
Xylenes (total)	0.320	0.010	"		0.00		30-160			
Gasoline Range Hydrocarbons	ND	0.50	"		3.12		30-160			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0429</i>		<i>"</i>	<i>0.0378</i>		<i>113</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0382</i>		<i>107</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0407</i>		<i>"</i>	<i>0.0382</i>		<i>107</i>	<i>21-167</i>			

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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 1510128 - EPA 5030 Soil MS

Matrix Spike Dup (1510128-MSD1)		Source: 1510090-01			Prepared & Analyzed: 10/15/15					
Naphthalene	ND	0.010	mg/kg		ND		10-158		42	
Benzene	0.110	0.0020	"	0.0975	ND	113	30-131	6.20	34	
Toluene	0.100	0.0050	"	0.0975	ND	103	30-134	6.17	30	
Ethylbenzene	0.118	0.0050	"	0.0967	ND	122	22-153	8.56	24	
m,p-Xylene	0.225	0.010	"	0.195	ND	116	10-159	8.51	68	
o-Xylene	0.123	0.0050	"	0.0959	ND	128	31-151	8.01	38	
Xylenes (total)	0.348	0.010	"		0.00		30-160	8.33	30	
Gasoline Range Hydrocarbons	5.17	0.50	"		3.12		30-160		30	
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0386		120	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0390		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0390		106	21-167			

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Project Number: 0083-15061
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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 1510130 - General Preparation

Blank (1510130-BLK1)

Prepared & Analyzed: 10/15/15

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

LCS (1510130-BS1)

Prepared & Analyzed: 10/15/15

Calcium	580	10.0	mg/kg wet	500	116	82.9-118
Magnesium	557	5.00	"	500	111	77.1-123
Sodium	560	5.00	"	500	112	71-129

Duplicate (1510130-DUP1)

Source: 1510091-01

Prepared & Analyzed: 10/15/15

Calcium	7090	11.6	mg/kg dry	7630	7.38	200
Magnesium	1160	5.81	"	1270	9.22	200
Sodium	178	5.81	"	233	27.0	200

Matrix Spike (1510130-MS1)

Source: 1510091-01

Prepared & Analyzed: 10/15/15

Calcium	7590	11.6	mg/kg dry	581	7630	NR	75-125	QM-07
Magnesium	1710	5.81	"	581	1270	75.4	75-125	
Sodium	766	5.81	"	581	233	91.8	75-125	

Matrix Spike Dup (1510130-MSD1)

Source: 1510091-01

Prepared & Analyzed: 10/15/15

Calcium	7620	11.6	mg/kg dry	581	7630	NR	75-125	0.376	25	QM-07
Magnesium	1650	5.81	"	581	1270	65.0	75-125	3.60	25	QM-07
Sodium	723	5.81	"	581	233	84.3	75-125	5.80	25	

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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 1510121 - General Preparation

LCS (1510121-BS1)

Prepared & Analyzed: 10/15/15

pH	7.95	0.100	pH Units	8.00	99.4	95-105
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Duplicate (1510121-DUP1)

Source: 1510088-02

Prepared & Analyzed: 10/15/15

pH	9.17	0.100	pH Units	9.25	0.869	20
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Batch 1510122 - General Preparation

Blank (1510122-BLK1)

Prepared & Analyzed: 10/15/15

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1510122-BS1)

Prepared & Analyzed: 10/15/15

Specific Conductance (EC)	0.506	0.0100	mmhos/cm	0.500	101	90-110
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Duplicate (1510122-DUP1)

Source: 1510088-02

Prepared & Analyzed: 10/15/15

Specific Conductance (EC)	0.801	0.0100	mmhos/cm	0.678	16.5	20
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Project: GORDON 1261-32

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10/16/15 06:51

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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