



Robin Green St. BB 18-4, 5 Water Vault Location

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Imagery Date: Sep 8, 2013

lat 40.400720° lon -104.486577° elev 4589 ft

Eye alt 7810 ft

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 24, 2015

Christine Wasko
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221

RE: Robin Green St. BB 18-4,5

Enclosed are the results of analyses for samples received by Summit Scientific on 08/21/15 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Robin Green St. BB 18-4,5

Project Number: [none]
Project Manager: Christine Wasko

Reported:
08/24/15 08:18

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@8'	1508167-01	Soil	08/21/15 12:58	08/21/15 17:30
SS03@6'	1508167-02	Soil	08/21/15 13:02	08/21/15 17:30

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Robin Green St. BB 18-4,5

Project Number: [none]
Project Manager: Christine Wasko

Reported:
08/24/15 08:18

SS01@8'
1508167-01 (Soil)

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Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/21/15 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508168	08/21/15	08/22/15	8015M	

Date Sampled: **08/21/15 12:58**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/21/15 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508171	"	08/22/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **08/21/15 12:58**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.5 %	21-167		"	"	"	"	

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SS03@6'
1508167-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/21/15 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1508168	08/21/15	08/22/15	8015M	

Date Sampled: **08/21/15 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		104 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/21/15 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1508171	"	08/22/15	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.93	0.50	"	"	"	"	"	"	

Date Sampled: **08/21/15 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167		"	"	"	"	

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

Date Sampled: **08/21/15 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
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SS03@6'
1508167-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	370	11.6 mg/kg dry		1	1508169	08/21/15	08/22/15	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	83.7	5.82	"	"	"	"	"	"	
Sodium	6.95	5.82	"	"	"	"	"	"	

Date Sampled: 08/21/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0849		units	"	1508174	08/24/15	08/24/15	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 08/21/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.235	0.0100 mmhos/cm		1	1508173	08/21/15	08/21/15	SM 2510B	

Date Sampled: 08/21/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.66	0.100	pH Units	"	1508172	08/21/15	08/21/15	EPA 9045	

Date Sampled: 08/21/15 13:02

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.4		%	"	1508170	08/21/15	08/24/15	% calculation	

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Project Manager: Christine Wasko

Reported:
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Extractable Petroleum Hydrocarbons by 8015 - Quality Control
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Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch 1508168 - EPA 3550A

Blank (1508168-BLK1)

Prepared & Analyzed: 08/21/15

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.0		"	12.2		98.7	30-150				

LCS (1508168-BS1)

Prepared & Analyzed: 08/21/15

C10-C28 (DRO)	426	50	mg/kg	499		85.5	73-134				
<i>Surrogate: o-Terphenyl</i>	12.0		"	12.2		98.2	30-150				

Matrix Spike (1508168-MS1)

Source: 1508159-01

Prepared & Analyzed: 08/21/15

C10-C28 (DRO)	453	50	mg/kg	481	ND	94.3	50-148				
<i>Surrogate: o-Terphenyl</i>	11.8		"	11.8		101	30-150				

Matrix Spike Dup (1508168-MSD1)

Source: 1508159-01

Prepared & Analyzed: 08/21/15

C10-C28 (DRO)	399	50	mg/kg	484	ND	82.5	50-148	12.8		13	
<i>Surrogate: o-Terphenyl</i>	10.4		"	11.8		87.7	30-150				

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Project Manager: Christine Wasko

Reported:
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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 1508171 - EPA 5030 Soil MS

Blank (1508171-BLK1)

Prepared: 08/21/15 Analyzed: 08/22/15

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>0.0402</i>		<i>"</i>	<i>0.0396</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.5</i>	<i>21-167</i>			

LCS (1508171-BS1)

Prepared: 08/21/15 Analyzed: 08/22/15

Naphthalene	ND	0.010	mg/kg				66-138			
Benzene	0.0959	0.0020	"	0.100		95.9	58-130			
Toluene	0.100	0.0050	"	0.100		100	61-134			
Ethylbenzene	0.104	0.0050	"	0.0992		105	74-139			
m,p-Xylene	0.213	0.010	"	0.200		107	73-137			
o-Xylene	0.114	0.0050	"	0.0984		116	73-141			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0383</i>		<i>"</i>	<i>0.0396</i>		<i>96.8</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>21-167</i>			

Matrix Spike (1508171-MS1)

Source: 1508167-01

Prepared: 08/21/15 Analyzed: 08/22/15

Naphthalene	ND	0.010	mg/kg		ND		10-158			
Benzene	0.0846	0.0020	"	0.0956	ND	88.5	30-131			
Toluene	0.0888	0.0050	"	0.0956	ND	92.9	30-134			
Ethylbenzene	0.0904	0.0050	"	0.0948	ND	95.4	22-153			
m,p-Xylene	0.183	0.010	"	0.191	ND	95.7	10-159			
o-Xylene	0.0964	0.0050	"	0.0941	ND	102	31-151			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0380</i>		<i>"</i>	<i>0.0379</i>		<i>100</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0356</i>		<i>"</i>	<i>0.0382</i>		<i>93.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0359</i>		<i>"</i>	<i>0.0382</i>		<i>93.8</i>	<i>21-167</i>			

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Project Number: [none]
Project Manager: Christine Wasko

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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 1508171 - EPA 5030 Soil MS

Matrix Spike Dup (1508171-MSD1)	Source: 1508167-01			Prepared: 08/21/15	Analyzed: 08/22/15					
Naphthalene	ND	0.010	mg/kg	ND	ND	10-158				42
Benzene	0.0854	0.0020	"	0.0921	ND	92.7	30-131	0.918		34
Toluene	0.0685	0.0050	"	0.0921	ND	74.3	30-134	25.9		30
Ethylbenzene	0.0823	0.0050	"	0.0913	ND	90.2	22-153	9.36		24
m,p-Xylene	0.169	0.010	"	0.184	ND	91.7	10-159	7.98		68
o-Xylene	0.0872	0.0050	"	0.0906	ND	96.2	31-151	10.0		38
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0420</i>		<i>"</i>	<i>0.0365</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0285</i>		<i>"</i>	<i>0.0368</i>		<i>77.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0319</i>		<i>"</i>	<i>0.0368</i>		<i>86.6</i>	<i>21-167</i>			

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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	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1508169 - General Preparation

Blank (1508169-BLK1)

Prepared: 08/21/15 Analyzed: 08/22/15

Calcium	ND	10.0	mg/kg wet						
Magnesium	ND	5.00	"						
Sodium	26.1	5.00	"						

LCS (1508169-BS1)

Prepared: 08/21/15 Analyzed: 08/22/15

Calcium	528	10.0	mg/kg wet	500	106	82.9-118			
Magnesium	531	5.00	"	500	106	77.1-123			
Sodium	545	5.00	"	500	109	71-129			

Duplicate (1508169-DUP1)

Source: 1508131-01

Prepared: 08/21/15 Analyzed: 08/22/15

Calcium	2550	10.0	mg/kg dry	2520			1.20	200	
Magnesium	163	5.02	"	161			1.03	200	
Sodium	1580	5.02	"	1600			0.893	200	

Matrix Spike (1508169-MS1)

Source: 1508131-01

Prepared: 08/21/15 Analyzed: 08/22/15

Calcium	3270	10.0	mg/kg dry	502	2520	149	75-125		QM-07
Magnesium	687	5.02	"	502	161	105	75-125		
Sodium	2150	5.02	"	502	1600	111	75-125		

Matrix Spike Dup (1508169-MSD1)

Source: 1508131-01

Prepared: 08/21/15 Analyzed: 08/22/15

Calcium	3090	10.0	mg/kg dry	502	2520	113	75-125	5.60	25
Magnesium	680	5.02	"	502	161	104	75-125	0.966	25
Sodium	2150	5.02	"	502	1600	110	75-125	0.0919	25

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Project Number: [none]
Project Manager: Christine Wasko

Reported:
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Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
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Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch 1508170 - General Preparation

Duplicate (1508170-DUP1)	Source: 1508167-02			Prepared: 08/21/15 Analyzed: 08/24/15						
% Solids	78.3		%		75.4			3.77	20	

Batch 1508172 - General Preparation

LCS (1508172-BS1)				Prepared & Analyzed: 08/21/15						
pH	7.98	0.100	pH Units	8.00		99.8	95-105			
Duplicate (1508172-DUP1)	Source: 1508167-02			Prepared & Analyzed: 08/21/15						
pH	8.75	0.100	pH Units		8.66			1.03	20	

Batch 1508173 - General Preparation

Blank (1508173-BLK1)				Prepared & Analyzed: 08/21/15						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1508173-BS1)				Prepared & Analyzed: 08/21/15						
Specific Conductance (EC)	483	0.0100	mmhos/cm	500		96.6	90-110			
Duplicate (1508173-DUP1)	Source: 1508167-02			Prepared & Analyzed: 08/21/15						
Specific Conductance (EC)	0.247	0.0100	mmhos/cm		0.235			5.00	20	

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Project Number: [none]
Project Manager: Christine Wasko

Reported:
08/24/15 08:18

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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