

Summit Scientific

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July 24, 2013

Alyssa Beard
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: FEM Sooner 10-28

Enclosed are the results of analyses for samples received by Summit Scientific on 07/19/13 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joseph J Egry IV
Laboratory Director

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: FEM Sooner 10-28

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
07/24/13 15:33

SPOILS
R307176-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/19/13 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	4100	50	mg/kg	1	3072309	07/23/13	07/24/13	8015M	

Date Sampled: **07/19/13 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		99.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/19/13 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0050	mg/kg	1	3072210	07/22/13	07/23/13	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	8.5	0.50	"	"	"	"	"	"	

Date Sampled: **07/19/13 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		119 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		89.1 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		103 %	21-167		"	"	"	"	

Summit Scientific

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Project Number: [none]
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07/24/13 15:33

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 3072309 - EPA 3550A

Blank (3072309-BLK1)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	ND	50	mg/kg							
Blank (3072309-BLK2)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	ND	50	mg/kg							
LCS (3072309-BS1)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	506	50	mg/kg	501		101	73-134			
LCS (3072309-BS2)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	552	50	mg/kg	501		110	73-134			
LCS Dup (3072309-BSD1)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	516	50	mg/kg	501		103	73-134	1.85	11	
LCS Dup (3072309-BSD2)			Prepared & Analyzed: 07/23/13							
C10-C28 (DRO)	506	50	mg/kg	501		101	73-134	8.77	11	
Matrix Spike (3072309-MS1)			Source: R307175-01		Prepared & Analyzed: 07/23/13					
C10-C28 (DRO)	521	50	mg/kg	499	ND	104	50-148			
Matrix Spike (3072309-MS2)			Source: R307175-02		Prepared: 07/23/13 Analyzed: 07/24/13					
C10-C28 (DRO)	467	50	mg/kg	425	ND	110	50-148			
Matrix Spike Dup (3072309-MSD1)			Source: R307175-01		Prepared & Analyzed: 07/23/13					
C10-C28 (DRO)	485	50	mg/kg	485	ND	99.9	50-148	7.11	13	
Matrix Spike Dup (3072309-MSD2)			Source: R307175-02		Prepared: 07/23/13 Analyzed: 07/24/13					
C10-C28 (DRO)	504	50	mg/kg	501	ND	101	50-148	7.62	13	

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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		

Batch 3072210 - EPA 5030 Soil MS

Blank (3072210-BLK1)

Prepared: 07/22/13 Analyzed: 07/23/13

Benzene	ND	0.0050	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0432</i>		<i>"</i>	<i>0.0397</i>	<i>109</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>0.0399</i>		<i>"</i>	<i>0.0400</i>	<i>99.8</i>	<i>21-167</i>				

LCS (3072210-BS1)

Prepared: 07/22/13 Analyzed: 07/23/13

Benzene	0.0944	0.0050	mg/kg	0.100	94.4	58-130				
Toluene	0.0995	0.0050	"	0.100	99.5	61-134				
Ethylbenzene	0.133	0.0050	"	0.100	133	74-139				
m,p-Xylene	0.252	0.010	"	0.200	126	73-137				
o-Xylene	0.128	0.0050	"	0.100	128	73-141				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0426</i>		<i>"</i>	<i>0.0397</i>	<i>107</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0362</i>		<i>"</i>	<i>0.0400</i>	<i>90.4</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>	<i>102</i>	<i>21-167</i>				

LCS Dup (3072210-BSD1)

Prepared: 07/22/13 Analyzed: 07/23/13

Benzene	0.0997	0.0050	mg/kg	0.100	99.7	58-130	5.53	13		
Toluene	0.110	0.0050	"	0.100	110	61-134	9.77	16		
Ethylbenzene	0.138	0.0050	"	0.100	138	74-139	3.69	12		
m,p-Xylene	0.261	0.010	"	0.200	131	73-137	3.41	14		
o-Xylene	0.132	0.0050	"	0.100	132	73-141	3.18	12		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0459</i>		<i>"</i>	<i>0.0397</i>	<i>116</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>	<i>99.3</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>	<i>100</i>	<i>21-167</i>				

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

Batch 3072210 - EPA 5030 Soil MS

Matrix Spike (3072210-MS1)	Source: R307175-01			Prepared: 07/22/13		Analyzed: 07/23/13	
Benzene	0.0921	0.0050	mg/kg	0.100	ND	92.1	30-131
Toluene	0.0962	0.0050	"	0.100	ND	96.2	30-134
Ethylbenzene	0.131	0.0050	"	0.100	ND	131	22-153
m,p-Xylene	0.253	0.010	"	0.200	ND	127	10-159
o-Xylene	0.132	0.0050	"	0.100	ND	132	31-151
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0429</i>		<i>"</i>	<i>0.0397</i>		<i>108</i>	<i>23-173</i>
<i>Surrogate: Toluene-d8</i>	<i>0.0364</i>		<i>"</i>	<i>0.0400</i>		<i>91.0</i>	<i>20-170</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>98.9</i>	<i>21-167</i>

Matrix Spike Dup (3072210-MSD1)	Source: R307175-01			Prepared: 07/22/13		Analyzed: 07/23/13			
Benzene	0.0915	0.0050	mg/kg	0.100	ND	91.5	30-131	0.588	34
Toluene	0.0957	0.0050	"	0.100	ND	95.7	30-134	0.563	30
Ethylbenzene	0.133	0.0050	"	0.100	ND	133	22-153	1.32	24
m,p-Xylene	0.250	0.010	"	0.200	ND	125	10-159	1.16	68
o-Xylene	0.128	0.0050	"	0.100	ND	128	31-151	3.53	38
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0440</i>		<i>"</i>	<i>0.0397</i>		<i>111</i>	<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0366</i>		<i>"</i>	<i>0.0400</i>		<i>91.4</i>	<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>		

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Notes and Definitions

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