

SS06@2'

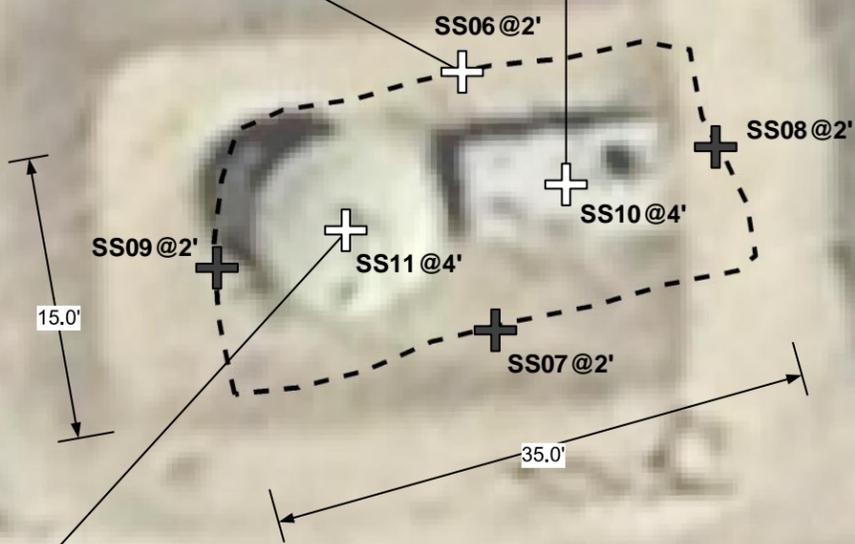
B -	<0.0020 mg/kg
T -	<0.0050 mg/kg
E -	<0.0050 mg/kg
X -	<0.010 mg/kg
TPH -	<50 mg/kg
N -	<0.010 mg/kg
SAR -	3.05
EC -	0.302 mmhos/cm
pH -	8.30

SS10@4'

B -	<0.0020 mg/kg
T -	<0.0050 mg/kg
E -	<0.0050 mg/kg
X -	<0.010 mg/kg
TPH -	<50 mg/kg
N -	<0.010 mg/kg

SS11@4'

B -	<0.0020 mg/kg
T -	<0.0050 mg/kg
E -	<0.0050 mg/kg
X -	<0.010 mg/kg
TPH -	<50 mg/kg
N -	<0.010 mg/kg



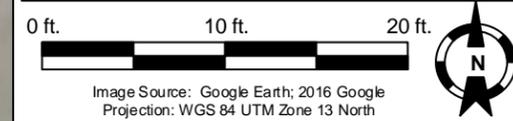
Legend

- Excavation Sample Location
- Excavation Sample Location (Not Submitted for Laboratory Analysis)
- Excavation Extent (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted
 - 2) **RED** value indicates concentration greater than COGCC table 910-1 soil standard (see table below).
 - 3) Site infrastructure has been removed. Shown for illustrative purposes only.
- GPS – Global Positioning System
 mg/kg – Milligrams Per Kilogram
 mmhos/cm – Millimhos Per Centimeter

Contaminant of Concern	COGCC Soil Concentration Standard
B - Benzene	0.17 mg/kg
T - Toluene	85 mg/kg
E - Ethylbenzene	100 mg/kg
X - Total Xylenes	175 mg/kg
TPH- Total Petroleum Hydrocarbons	500 mg/kg
N - Naphthalene	23 mg/kg
SAR – Sodium Absorption Ratio	<12
EC – Electrical Conductivity	<4mmhos/cm or 2x background
pH	6-9



DATE:	10/3/2017
DESIGNED BY:	DA
DRAWN BY:	GB

TASMAN GEOSCIENCES
 Tasman Geosciences, Inc.
 6899 Pecos Street – Unit C
 Denver, CO 80221

Noble Energy, Inc. – DJ Basin
Mark 35-13 Vault Removal – Location ID: 328356
 SWNE, Section 35, Township 4 North, Range 65 West
 Weld County, Colorado

Excavation Soil Analytical
 Results Map
 (10/2/2017)

FIGURE 1

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 08, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Mark 35-13

Enclosed are the results of analyses for samples received by Summit Scientific on 10/02/17 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ben Shrewsbury', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS03@3'	1710001-01	Soil	10/02/17 12:41	10/02/17 17:00
SS05@6'	1710001-02	Soil	10/02/17 12:45	10/02/17 17:00
SS06@2'	1710001-03	Soil	10/02/17 13:02	10/02/17 17:00
SS10@4'	1710001-04	Soil	10/02/17 13:12	10/02/17 17:00
SS11@4'	1710001-05	Soil	10/02/17 13:15	10/02/17 17:00

Summit Scientific

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Summit Scientific

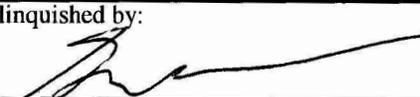
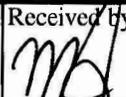
1710001

741 Corporate Circle Suite I ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Noble/Tasman
Address: -
City/State/Zip: -
Phone: 303-487-1228 Fax: -
Sampler Name: GB

Project Manager: Brandon Bruns, Invoice: Jacob Evans
E-Mail: Bbruns@tasman-geo.com
Project Name: mark 35-13
Project Number: -

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:				Special Instructions			
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	PH, EC, SAR				
SS03@ 3'	10/2/17	1241	1			X		X					X	X	X				
SS05@ 6'	10/2/17	1245	1			X		X					X	X	X				
SS06@ 2'	10/2/17	1302	1			X		X					X	X	X				
SS10@ 4'	10/2/17	1312	1			X		X					X	X	X				
SS11@ 4'	10/2/17	1315	1			X		X					X	X	X				
Relinquished by: 	Date/Time: <u>10/2/17 1700</u>	Received by: 	Date/Time: <u>10/2/17 1700</u>	Turn Around Time (Check)				Notes:											
				Same Day	<input type="checkbox"/>	72 Hours	<input type="checkbox"/>	on ice											
				24 Hours	<input type="checkbox"/>	Standard	<input checked="" type="checkbox"/>												
				48 Hours	<input type="checkbox"/>														
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:															
				Temperature Upon Receipt: <u>4.9°C</u>															
				Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No															

Sample Receipt Checklist

1710001

S2 Work Order: _____

Client: Noble/Tasman Client Project ID: Mark 35-13

Shipped Via: PIU Airbill #: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Cooler ID				
Temp (°C)	4.9			

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	✓			
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakita
 Custodian Printed Name

[Signature]
 Signature or Initials of Custodian

10/2/17 1740
 Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

SS03@3'
1710001-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/02/17 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710013	10/03/17	10/04/17	8015M	

Date Sampled: **10/02/17 12:41**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/02/17 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710014	10/03/17	10/03/17	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: **10/02/17 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

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

Date Sampled: **10/02/17 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	300	10.9	mg/kg dry	1	1710024	10/04/17	10/04/17	EPA 6020/Mod. USDA60 6(2, 3A)	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

SS03@3'
1710001-01 (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
Magnesium	146	5.43	mg/kg dry	1	1710024	10/04/17	10/04/17	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium	54.1	5.43	"	"	"	"	"	"	"
Sodium Adsorption Ratio	0.641		units	"	1710062	10/06/17	10/06/17	"	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/02/17 12:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.112	0.0100	mmhos/cm	1	1710026	10/04/17	10/05/17	SM 2510B	
% Solids	92.1		%	"	1710027	10/04/17	10/05/17	% calculation	
pH	8.92	0.100	pH Units	"	1710025	10/04/17	10/04/17	EPA 9045	

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6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

SS05@6'
1710001-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/02/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710013	10/03/17	10/04/17	8015M	

Date Sampled: **10/02/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/02/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710014	10/03/17	10/03/17	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: **10/02/17 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

SS06@2'
1710001-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/02/17 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710013	10/03/17	10/04/17	8015M	

Date Sampled: **10/02/17 13:02**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/02/17 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710014	10/03/17	10/03/17	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: **10/02/17 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.3 %	21-167		"	"	"	"	

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

Date Sampled: **10/02/17 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	433	11.1	mg/kg dry	1	1710024	10/04/17	10/04/17	EPA 6020/Mod. USDA60 6(2, 3A)	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

SS06@2'
1710001-03 (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
Magnesium	161	5.57	mg/kg dry	1	1710024	10/04/17	10/04/17	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium	293	5.57	"	"	"	"	"	"	"
Sodium Adsorption Ratio	3.05		units	"	1710062	10/06/17	10/06/17	"	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/02/17 13:02**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.302	0.0100	mmhos/cm	1	1710026	10/04/17	10/05/17	SM 2510B	
% Solids	89.7		%	"	1710027	10/04/17	10/05/17	% calculation	
pH	8.30	0.100	pH Units	"	1710025	10/04/17	10/04/17	EPA 9045	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13
Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

SS10@4'
1710001-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/02/17 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710013	10/03/17	10/04/17	8015M	

Date Sampled: **10/02/17 13:12**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/02/17 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710014	10/03/17	10/03/17	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: **10/02/17 13:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.6 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

SS11@4'
1710001-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/02/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710013	10/03/17	10/04/17	8015M	

Date Sampled: **10/02/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		113 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/02/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710014	10/03/17	10/04/17	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: **10/02/17 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		117 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1710013 - EPA 3550A

Blank (1710013-BLK1)				Prepared & Analyzed: 10/03/17							
C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	13.6		"	12.5		109	30-150				
LCS (1710013-BS1)				Prepared & Analyzed: 10/03/17							
C10-C28 (DRO)	474	50	mg/kg	499		95.1	73-134				
<i>Surrogate: o-Terphenyl</i>	14.6		"	12.5		117	30-150				
Matrix Spike (1710013-MS1)				Source: 1710001-01		Prepared & Analyzed: 10/03/17					
C10-C28 (DRO)	478	50	mg/kg	499	7.79	94.3	50-148				
<i>Surrogate: o-Terphenyl</i>	13.6		"	12.5		109	30-150				
Matrix Spike Dup (1710013-MSD1)				Source: 1710001-01		Prepared & Analyzed: 10/03/17					
C10-C28 (DRO)	502	50	mg/kg	499	7.79	99.0	50-148	4.78	20		
<i>Surrogate: o-Terphenyl</i>	16.2		"	12.5		130	30-150				

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

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 1710014 - EPA 5030 Soil MS

Blank (1710014-BLK1)

Prepared & Analyzed: 10/03/17

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>0.0455</i>		<i>"</i>	<i>0.0400</i>		<i>114</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.7</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.4</i>		<i>21-167</i>		

LCS (1710014-BS1)

Prepared & Analyzed: 10/03/17

Naphthalene	ND	0.010	mg/kg					66-138		
Benzene	0.0753	0.0020	"	0.100		75.3		58-130		
Toluene	0.0884	0.0050	"	0.100		88.4		61-134		
Ethylbenzene	0.0937	0.0050	"	0.0992		94.5		74-139		
m,p-Xylene	0.183	0.010	"	0.200		91.7		73-137		
o-Xylene	0.0912	0.0050	"	0.0980		93.1		73-141		
Xylenes (total)	0.274	0.010	"					0-200		
Gasoline Range Hydrocarbons	1.61	0.50	"					30-150		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0444</i>		<i>"</i>	<i>0.0400</i>		<i>111</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>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>		<i>21-167</i>		

Matrix Spike (1710014-MS1)

Source: 1710001-01

Prepared & Analyzed: 10/03/17

Naphthalene	ND	0.010	mg/kg		ND			10-158		
Benzene	0.0737	0.0020	"	0.100	ND	73.7		30-131		
Toluene	0.0902	0.0050	"	0.100	ND	90.2		30-134		
Ethylbenzene	0.0933	0.0050	"	0.0992	ND	94.1		22-153		
m,p-Xylene	0.183	0.010	"	0.200	ND	91.5		10-159		
o-Xylene	0.0908	0.0050	"	0.0980	ND	92.7		31-151		
Xylenes (total)	0.273	0.010	"		ND			30-160		
Gasoline Range Hydrocarbons	1.60	0.50	"		ND			30-160		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0450</i>		<i>"</i>	<i>0.0400</i>		<i>113</i>		<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.2</i>		<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>96.0</i>		<i>21-167</i>		

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

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 1710014 - EPA 5030 Soil MS

Matrix Spike Dup (1710014-MSD1)	Source: 1710001-01			Prepared & Analyzed: 10/03/17						
Naphthalene	ND	0.010	mg/kg	ND	ND	10-158			42	
Benzene	0.0778	0.0020	"	0.100	ND	77.8	30-131	5.47	34	
Toluene	0.0929	0.0050	"	0.100	ND	92.9	30-134	2.98	30	
Ethylbenzene	0.0970	0.0050	"	0.0992	ND	97.8	22-153	3.91	24	
m,p-Xylene	0.189	0.010	"	0.200	ND	94.9	10-159	3.68	68	
o-Xylene	0.0940	0.0050	"	0.0980	ND	95.9	31-151	3.44	38	
Xylenes (total)	0.283	0.010	"		ND		30-160	3.60	30	
Gasoline Range Hydrocarbons	1.62	0.50	"		ND		30-160	1.14	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0463</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>21-167</i>			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

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 1710024 - General Preparation

Blank (1710024-BLK1)

Prepared & Analyzed: 10/04/17

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

LCS (1710024-BS1)

Prepared & Analyzed: 10/04/17

Calcium	488	10.0	mg/kg wet	500		97.6	82.9-118		
Magnesium	479	5.00	"	500		95.8	77.1-123		
Sodium	467	5.00	"	500		93.3	71-129		

Duplicate (1710024-DUP1)

Source: 1710001-01

Prepared & Analyzed: 10/04/17

Calcium	290	10.9	mg/kg dry		300			3.30	200
Magnesium	138	5.43	"		146			5.56	200
Sodium	54.7	5.43	"		54.1			1.12	200

Matrix Spike (1710024-MS1)

Source: 1710001-01

Prepared & Analyzed: 10/04/17

Calcium	707	10.9	mg/kg dry	543	300	75.0	75-125		
Magnesium	619	5.43	"	543	146	87.2	75-125		
Sodium	524	5.43	"	543	54.1	86.5	75-125		

Matrix Spike Dup (1710024-MSD1)

Source: 1710001-01

Prepared & Analyzed: 10/04/17

Calcium	709	10.9	mg/kg dry	543	300	75.4	75-125	0.339	25
Magnesium	603	5.43	"	543	146	84.1	75-125	2.77	25
Sodium	506	5.43	"	543	54.1	83.3	75-125	3.43	25

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/08/17 16:49

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

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

Batch 1710025 - General Preparation

LCS (1710025-BS1)				Prepared & Analyzed: 10/04/17							
pH	9.18	0.100	pH Units	9.16		100	95-105				
Duplicate (1710025-DUP1)				Source: 1710001-01			Prepared & Analyzed: 10/04/17				
pH	8.85	0.100	pH Units		8.92			0.788	20		

Batch 1710026 - General Preparation

Blank (1710026-BLK1)				Prepared: 10/04/17 Analyzed: 10/05/17							
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
LCS (1710026-BS1)				Prepared: 10/04/17 Analyzed: 10/05/17							
Specific Conductance (EC)	0.754	0.0100	mmhos/cm	0.750		100	90-110				
Duplicate (1710026-DUP1)				Source: 1710001-01			Prepared: 10/04/17 Analyzed: 10/05/17				
Specific Conductance (EC)	0.106	0.0100	mmhos/cm		0.112			5.67	20		

Batch 1710027 - General Preparation

Duplicate (1710027-DUP1)				Source: 1709278-01			Prepared: 10/04/17 Analyzed: 10/05/17				
% Solids	96.6		%		96.4			0.207	20		

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Mark 35-13

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/08/17 16:49

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