



**Legend**

✚ Excavation Sample Location

✚ Excavation Sample Location  
(Not Submitted for Laboratory Analysis)

--- Excavation Extent

**Notes**

1) Site Coordinates: 40.515377, -104.416386

2) All locations are approximate unless otherwise noted

3) **RED** value indicates concentration greater than COGCC table 910-1 soil standard (see table below).

GPS – Global Positioning System

mg/kg – Milligrams Per Kilogram

mmhos/cm – Millimhos Per Centimeter

Contaminant of Concern	COGCC 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



# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 08, 2018

Brandon Bruns

Tasman Geosciences

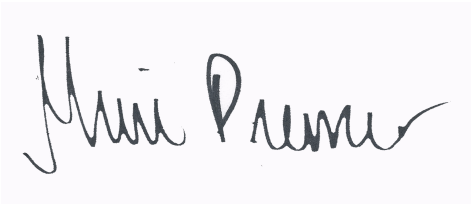
6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Brown 3-9,10,15,16,23

Enclosed are the results of analyses for samples received by Summit Scientific on 11/01/18 17:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", on a light blue background.

Muri Premier For Ben Shrewsbury

Laboratory Manager



Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@3'	1811007-02	Soil	11/01/18 13:07	11/01/18 17:45
SS05@5'	1811007-05	Soil	11/01/18 13:13	11/01/18 17:45

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## 1811007

Page 1 of 1

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Brown 3-9, 10, 15, 16, 23
Project Number:	N/A

				Preservative				Matrix				Analyze For:										
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR						Special Instructions	
SS01@3'	11/1/18	1305	1			X			X				X	X							<b>HOLD:</b> SS01 SS03 SS04	
SS02@3'		1307				X									X							
SS03@3'		1309																				
SS04@3'		1311																				
SS05@3'		1313																				
Relinquished by: Max				Date/Time: 11/1/18 1745				Received by: [Signature]				Date/Time: 11.1.18 1745				Turn Around Time (Check)				Notes:		
																Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 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:						
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Temperature Upon Receipt: 7.7 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>						





Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**SS02@3'**  
**1811007-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1811029	11/02/18	11/03/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		132 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		116 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1811031	11/02/18	11/04/18	EPA 8015M	

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

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

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	<b>2810</b>	11.6	mg/kg dry	1	1811056	11/05/18	11/05/18	EPA 6020B	

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6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**SS02@3'**  
**1811007-02 (Soil)**

**Summit Scientific**

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

Magnesium	444	5.81	mg/kg dry	1	1811056	11/05/18	11/05/18	EPA 6020B
Sodium	36.7	5.81	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.170	0.100	units	1	1811104	11/07/18	11/08/18	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	1811024	11/02/18	11/02/18	Calculation	
pH	8.10		pH Units	"	1811073	11/06/18	11/06/18	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **11/01/18 13:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.573	0.0100	mmhos/cm	1	1811072	11/06/18	11/06/18	EPA 120.1	

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**SS05@5'**  
**1811007-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **11/01/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1811029	11/02/18	11/03/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **11/01/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/01/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1811031	11/02/18	11/04/18	EPA 8015M	

Date Sampled: **11/01/18 13:13**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		96.9 %	30-150		"	"	"	"	

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Brun

**Reported:**  
11/08/18 09:43

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch 1811029 - EPA 5030 Soil MS

##### Blank (1811029-BLK1)

Prepared: 11/02/18 Analyzed: 11/03/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0396	106	23-173				
Surrogate: Toluene-d8	0.0394		"	0.0400	98.6	20-170				
Surrogate: 4-Bromofluorobenzene	0.0410		"	0.0400	103	21-167				

##### LCS (1811029-BS1)

Prepared: 11/02/18 Analyzed: 11/03/18

Benzene	0.130	0.0020	mg/kg	0.150	86.6	70-130				
Toluene	0.111	0.0050	"	0.150	73.8	70-130				
Ethylbenzene	0.140	0.0050	"	0.150	93.4	70-130				
m,p-Xylene	0.281	0.010	"	0.300	93.8	70-130				
o-Xylene	0.149	0.0050	"	0.150	99.1	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0396	101	23-173				
Surrogate: Toluene-d8	0.0395		"	0.0400	98.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400	103	21-167				

##### Matrix Spike (1811029-MS1)

Source: 1810342-01

Prepared: 11/02/18 Analyzed: 11/03/18

Benzene	0.123	0.0020	mg/kg	0.150	ND	81.9	70-130			
Toluene	0.104	0.0050	"	0.150	ND	69.6	70-130			QM-07
Ethylbenzene	0.127	0.0050	"	0.150	ND	84.8	70-130			
m,p-Xylene	0.240	0.010	"	0.300	ND	80.1	70-130			
o-Xylene	0.130	0.0050	"	0.150	ND	86.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0407		"	0.0396	103	23-173				
Surrogate: Toluene-d8	0.0376		"	0.0400	94.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400	95.1	21-167				

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**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 1811029 - EPA 5030 Soil MS**

Matrix Spike Dup (1811029-MSD1)		Source: 1810342-01			Prepared: 11/02/18 Analyzed: 11/03/18					
Benzene	0.117	0.0020	mg/kg	0.150	ND	77.8	70-130	5.11	30	
Toluene	0.0977	0.0050	"	0.150	ND	65.1	70-130	6.68	30	QM-07
Ethylbenzene	0.121	0.0050	"	0.150	ND	80.6	70-130	5.03	30	
m,p-Xylene	0.228	0.010	"	0.300	ND	76.2	70-130	5.07	30	
o-Xylene	0.124	0.0050	"	0.150	ND	82.9	70-130	4.09	30	
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0396		104	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		97.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0411		"	0.0400		103	21-167			

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1811031 - EPA 3550A**

**Blank (1811031-BLK1)**

Prepared: 11/02/18 Analyzed: 11/04/18

C10-C28 (DRO) ND 50 mg/kg

**LCS (1811031-BS1)**

Prepared: 11/02/18 Analyzed: 11/04/18

C10-C28 (DRO) 573 50 mg/kg 500 115 70-130

**Matrix Spike (1811031-MS1)**

**Source: 1811007-02**

Prepared: 11/02/18 Analyzed: 11/04/18

C10-C28 (DRO) 575 50 mg/kg 500 20.4 111 70-130

**Matrix Spike Dup (1811031-MSD1)**

**Source: 1811007-02**

Prepared: 11/02/18 Analyzed: 11/04/18

C10-C28 (DRO) 586 50 mg/kg 500 20.4 113 70-130 1.86 20

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

## Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control

### Summit Scientific

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

#### Batch 1811056 - General Preparation

##### Blank (1811056-BLK1)

Prepared & Analyzed: 11/05/18

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

##### LCS (1811056-BS1)

Prepared & Analyzed: 11/05/18

Calcium	570	10.0	mg/kg wet	500	114	70-130
Magnesium	564	5.00	"	500	113	70-130
Sodium	566	5.00	"	500	113	70-130

##### Duplicate (1811056-DUP1)

Source: 1811007-02

Prepared & Analyzed: 11/05/18

Calcium	2740	11.6	mg/kg dry	2810	2.60	20
Magnesium	428	5.81	"	444	3.61	20
Sodium	39.0	5.81	"	36.7	6.11	20

##### Matrix Spike (1811056-MS1)

Source: 1811007-02

Prepared & Analyzed: 11/05/18

Calcium	3450	11.6	mg/kg dry	581	2810	111	70-130
Magnesium	1040	5.81	"	581	444	103	70-130
Sodium	630	5.81	"	581	36.7	102	70-130

##### Matrix Spike Dup (1811056-MSD1)

Source: 1811007-02

Prepared & Analyzed: 11/05/18

Calcium	3480	11.6	mg/kg dry	581	2810	115	70-130	0.770	25
Magnesium	1050	5.81	"	581	444	105	70-130	1.39	25
Sodium	646	5.81	"	581	36.7	105	70-130	2.62	25

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6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

**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 1811024 - General Preparation**

<b>Duplicate (1811024-DUP1)</b>		<b>Source: 1811007-02</b>			Prepared & Analyzed: 11/02/18					
% Solids	85.9		%		86.1			0.231	20	

**Batch 1811073 - General Preparation**

<b>LCS (1811073-BS1)</b>		Prepared & Analyzed: 11/06/18								
pH	9.1		pH Units	9.18		99.3	95-105			
<b>Duplicate (1811073-DUP1)</b>		<b>Source: 1811007-02</b>			Prepared & Analyzed: 11/06/18					
pH	8.2		pH Units		8.1			1.47	20	

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6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]

Project Manager: Brandon Brun

**Reported:**

11/08/18 09:43

### Specific Conductance by EPA Method 120.1 - Quality Control

#### Summit Scientific

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

#### Batch 1811072 - General Preparation

##### Blank (1811072-BLK1)

Prepared & Analyzed: 11/06/18

Specific Conductance (EC) ND 0.0100 mmhos/cm

##### LCS (1811072-BS1)

Prepared & Analyzed: 11/06/18

Specific Conductance (EC) 0.754 0.0100 mmhos/cm 0.750 101 90-110

##### Duplicate (1811072-DUP1)

Source: 1811047-05

Prepared & Analyzed: 11/06/18

Specific Conductance (EC) 0.606 0.0100 mmhos/cm 0.558 8.34 20

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Tasman Geosciences  
6899 Pecos St, Unit C  
Denver CO, 80221

Project: Noble - Brown 3-9,10,15,16,23

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
11/08/18 09:43

### 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