



# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 01, 2020

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Guttersen D02-20

Work Order #2009258

Enclosed are the results of analyses for samples received by Summit Scientific on 09/23/20 13:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, reading "Muri Premier", is displayed on a light purple rectangular background.

Muri Premier For Paul Shrewsbury  
President



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Guttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FS01@5'	2009258-01	Soil	09/23/20 10:10	09/23/20 13:05
SS01@4'	2009258-02	Soil	09/23/20 10:15	09/23/20 13:05

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# Summit Scientific

S<sub>2</sub>

2009258

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

Page 1 of 1

Client: Noble [REDACTED] / Tasman Geosciences

Project Manager: Brandon Bruns

Address: 6855 W. 119th Ave.

E-Mail: Bbruns@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

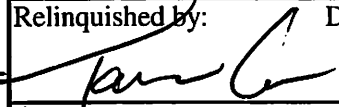

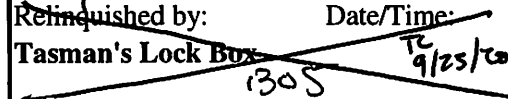

Phone: 303-487-1228

Project Name: GutHersen D02-20

Sampler Name: Tanner Cook

Project Number: —

					Preservative				Matrix			Analysis Requested						Special Instructions					
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR	HOLD						
1	F501 @ 5'	9/23/20	1010	1			X			X				X	X	X							
2	S501 @ 4'	↓	1015	↓			↓			↓				X	X	X							
3	S502 @ 4'	↓	1020	↓			↓			↓								X					
4	S503 @ 4'	↓	1025	↓			↓			↓								X	X				
5	S504 @ 4'	↓	1030	↓			↓			↓								X					
6																							
7																							
8																							
9																							
10																							

Relinquished by:  Date/Time: 9/23/20 1300	Received by:  Date/Time: 9/23/20 1305 Tasman's Lock Box	Turn Around Time (Check) Same Day — 72 hours 24 hours — Standard <input checked="" type="checkbox"/> 48 hours — Sample Integrity: Temperature Upon Receipt: 21.2° Samples Intact: Yes No	Notes:
Relinquished by:  Date/Time: 9/23/20 1305 Tasman's Lock Box	Received by:  Date/Time: 9-23-2020 1305		
Relinquished by: Date/Time:	Received by: Date/Time:		



## Sample Receipt Checklist

S2 Work Order 2009258

Client: Noble/Tasman Client Project ID: Guthersen 002-20

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_ (Describe)

Temp (°C)	21.2°
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Thermometer ID: 61857155-K

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

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

Custodian Printed Name or Initials

Signature of Custodian

Date/Time



Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**FS01@5'**  
**2009258-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/23/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	2009320	09/28/20	09/29/20	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: **09/23/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/20 10:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	2009314	09/25/20	09/30/20	EPA 8015M	

Date Sampled: **09/23/20 10:10**

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

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Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**SS01@4'**  
**2009258-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	2009320	09/28/20	09/29/20	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: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	2009314	09/25/20	09/30/20	EPA 8015M	

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.7 %	30-150		"	"	"	"	

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

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15100	11.0	mg/kg dry	1	2009329	09/28/20	09/28/20	EPA 6020B	
Magnesium	2890	5.51	"	"	"	"	"	"	

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Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**SS01@4'**  
**2009258-02 (Soil)**

**Summit Scientific**

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

Sodium	97.6	5.51	mg/kg dry	1	2009329	09/28/20	09/28/20	EPA 6020B
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**Calculated Analysis**

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.191	0.100	units	1	2009336	09/29/20	09/29/20	Calculation	

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

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8		%	1	2009282	09/24/20	09/24/20	Calculation	
pH	9.24		pH Units	"	2009283	09/24/20	09/24/20	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **09/23/20 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.766	0.0100	mmhos/cm	1	2009284	09/24/20	09/24/20	EPA 120.1	

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Broomfield CO, 80020

Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Brunns

**Reported:**  
10/01/20 10:23

## 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 2009320 - EPA 5030 Soil MS

##### Blank (2009320-BLK1)

Prepared: 09/28/20 Analyzed: 09/29/20

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	0.0438		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0404		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0429		"	0.0400		107	21-167			

##### LCS (2009320-BS1)

Prepared & Analyzed: 09/28/20

Benzene	0.0911	0.0020	mg/kg	0.100		91.1	70-130			
Toluene	0.0758	0.0050	"	0.100		75.8	70-130			
Ethylbenzene	0.109	0.0050	"	0.100		109	70-130			
m,p-Xylene	0.220	0.010	"	0.200		110	70-130			
o-Xylene	0.116	0.0050	"	0.100		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

##### Matrix Spike (2009320-MS1)

Source: 2009258-01

Prepared & Analyzed: 09/28/20

Benzene	0.0915	0.0020	mg/kg	0.100	ND	91.5	70-130			
Toluene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
Ethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
m,p-Xylene	0.226	0.010	"	0.200	0.00528	111	70-130			
o-Xylene	0.120	0.0050	"	0.100	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0446		"	0.0400		112	23-173			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	21-167			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**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 2009320 - EPA 5030 Soil MS**

Matrix Spike Dup (2009320-MSD1)		Source: 2009258-01			Prepared & Analyzed: 09/28/20					
Benzene	0.0892	0.0020	mg/kg	0.100	ND	89.2	70-130	2.56	30	
Toluene	0.0749	0.0050	"	0.100	ND	74.9	70-130	0.240	30	
Ethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	2.97	30	
m,p-Xylene	0.220	0.010	"	0.200	0.00528	107	70-130	2.88	30	
o-Xylene	0.119	0.0050	"	0.100	ND	119	70-130	1.08	30	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0435		"	0.0400		109	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0405		"	0.0400		101	21-167			

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Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

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

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

**Batch 2009314 - EPA 3550A**

**Blank (2009314-BLK1)**

Prepared & Analyzed: 09/25/20

C10-C28 (DRO) ND 50 mg/kg

**LCS (2009314-BS1)**

Prepared & Analyzed: 09/25/20

C10-C28 (DRO) 610 50 mg/kg 500 122 70-130

**Matrix Spike (2009314-MS1)**

**Source: 2009273-01**

Prepared & Analyzed: 09/25/20

C10-C28 (DRO) 6390 50 mg/kg 500 6780 NR 70-130 QM-07

**Matrix Spike Dup (2009314-MSD1)**

**Source: 2009273-01**

Prepared & Analyzed: 09/25/20

C10-C28 (DRO) 7700 50 mg/kg 500 6780 183 70-130 18.6 20 QM-07

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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutterson D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

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

### Summit Scientific

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

#### Batch 2009329 - General Preparation

##### Blank (2009329-BLK1)

Prepared & Analyzed: 09/28/20

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

##### LCS (2009329-BS1)

Prepared & Analyzed: 09/28/20

Calcium	512	10.0	mg/kg wet	500	102	70-130
Magnesium	503	5.00	"	500	101	70-130
Sodium	583	5.00	"	500	117	70-130

##### Duplicate (2009329-DUP1)

Source: 2009258-02

Prepared & Analyzed: 09/28/20

Calcium	12600	11.0	mg/kg dry	15100	18.1	20
Magnesium	2470	5.51	"	2890	15.6	20
Sodium	90.7	5.51	"	97.6	7.31	20

##### Matrix Spike (2009329-MS1)

Source: 2009258-02

Prepared & Analyzed: 09/28/20

Calcium	15700	11.0	mg/kg dry	551	15100	94.9	70-130
Magnesium	3280	5.51	"	551	2890	71.6	70-130
Sodium	674	5.51	"	551	97.6	105	70-130

##### Matrix Spike Dup (2009329-MSD1)

Source: 2009258-02

Prepared & Analyzed: 09/28/20

Calcium	15700	11.0	mg/kg dry	551	15100	106	70-130	0.392	25
Magnesium	3300	5.51	"	551	2890	74.2	70-130	0.449	25
Sodium	638	5.51	"	551	97.6	98.0	70-130	5.60	25

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutterson D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**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 2009282 - General Preparation**

**Duplicate (2009282-DUP1)**

Source: 2009258-02

Prepared & Analyzed: 09/24/20

% Solids	90.9		%		90.8			0.110	20	
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**Batch 2009283 - General Preparation**

**LCS (2009283-BS1)**

Prepared & Analyzed: 09/24/20

pH	9.19		pH Units	9.18	100	95-105				
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**Duplicate (2009283-DUP1)**

Source: 2009258-02

Prepared & Analyzed: 09/24/20

pH	9.21		pH Units		9.24			0.325	20	
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Tasman Geosciences  
6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

**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 2009284 - General Preparation**

**Blank (2009284-BLK1)**

Prepared & Analyzed: 09/24/20

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (2009284-BS1)**

Prepared & Analyzed: 09/24/20

Specific Conductance (EC) 0.807 0.0100 mmhos/cm 0.750 108 90-110

**Duplicate (2009284-DUP1)**

**Source: 2009258-02**

Prepared & Analyzed: 09/24/20

Specific Conductance (EC) 0.761 0.0100 mmhos/cm 0.766 0.721 20

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Gutttersen D02-20

Project Number: [none]  
Project Manager: Brandon Bruns

**Reported:**  
10/01/20 10:23

### 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