

**REMEDIAL EXCAVATION
REPORT AND NO FURTHER
ACTION REQUEST**

ABBAY D01-29

**COGCC SPILL RELEASE POINT ID#454663
COGCC REMEDIATION # NOT ASSIGNED**

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6899 North Pecos Street, Unit C
Denver, CO 80221

September 24, 2018

Mr. Jacob Evans
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80631

Subject: **Excavation Report and No Further Action Request**
 Abbey D01-29
 API #: 05-123-30080
 Spill/Release Point ID #: 454663
 Remediation Project #: Not Assigned
 NWNW S1 T3N R64W
 Weld County, Colorado

Dear Mr. Evans:

Below please find a copy of the above referenced Excavation Report and NFA Request (Report) for the Abbey D01-29 Site (Site) in Weld County, Colorado. The text below describes excavation and environmental sampling conducted at the Site on September 7, 2018 (Remedial Excavation) by Tasman Geosciences, Inc. (Tasman), on behalf of Noble Energy, Inc. (Noble).

Introduction

The purpose of this document is to describe the excavation and removal of impacted soil and subsequent soil sampling activities conducted as part of the Excavation. The activities described below were performed as a follow up investigation for a Form 19 submitted to the COGCC for the Site on March 27, 2018.

Facility Background

The Site is located approximately 9 miles southeast of the Town of Kersey in Weld County, Colorado, as shown on Figure 1. The Site is surrounded by non-crop land, and the legal description is the northwest ¼ of the northwest ¼ of Section 1, Township 3 North, Range 64 West, of the 6th Principal Meridian. The Site is located on terrain that slopes gradually to the northwest. The Site is approximately 1.5 miles east of Weld County Road 57 and has coordinates of 40.260752°, -104.498647°.

A Form 19 was submitted to the Colorado Oil and Gas Conservation Commission (COGCC) on March 29, 2018. The COGCC subsequently issued Spill/Release Point ID Number 454663. The approximate release location is shown on Figure 2.

Field Activities – Remedial Excavation

Tasman was retained by Noble Energy, Inc. on September 7, 2018, to perform necessary environmental sampling. Fourteen soil samples were collected at three feet and six feet below ground

surface (bgs) from the excavation sidewalls and from the base at seven feet bgs. The samples were field screened for volatile organic compounds (VOC) and standard headspace soil sampling techniques were used. Ten of the fourteen soil samples were submitted to Summit Scientific Laboratory in Golden, Colorado (Summit) for analysis of benzene, toluene, ethylbenzene, total xylenes and naphthalene (BTEXN), total petroleum hydrocarbons gasoline-range organics (TPH-GRO) using United States Environmental Protection Agency (USEPA) Method 8260B, and total petroleum hydrocarbons diesel-range organics (TPH-DRO) using USEPA Method 8015. Sample SS04@3' was also analyzed for Sodium Adsorption Ratio (SAR) by USEPA Method 6020 / United States Department of Agriculture (USDA) Method 60 6(2,3A) and Specific Conductance (EC) and pH via American Public Health Association (APHA)/American Society for Testing and Materials (ASTM)/USEPA methods. Soil analytical data is summarized in Table 1 and the soil sample locations are illustrated on Figure 2. The laboratory analytical report is included as Attachment A.

Impacted soils surrounding the release location were excavated and transported off-Site for disposal at the Waste Management Landfill in Keenesburg, Colorado under signed Noble waste manifests. A total of approximately 108 cubic yards of impacted material were removed from the Site for disposal. The final excavation area measured approximately 50.5 ft. by 26 ft. by 7 ft. bgs. Groundwater was not encountered during excavation activities. After sampling activities were completed, the excavation was backfilled with a combination of stockpiled overburden and imported clean fill.

Results

Laboratory analytical results for soil samples collected from the final extents and base of the Remedial Excavation indicate petroleum hydrocarbon soil impacts are not present above applicable COGCC Table 910-1 soil standards.

Conclusions

Based upon excavation activities completed at the Site and laboratory analytical results of the soil samples collected, petroleum hydrocarbon impacts to soil have been successfully removed. Groundwater was not encountered at the site during excavation activities. Noble is requesting a No Further Action designation from the COGCC for the Site.

Remarks

The discussion and conclusions contained in this report represent the professional opinions of Tasman Geosciences, Inc. These opinions are based on currently available information and are arrived at in accordance with currently accepted geologic and engineering practices.

Please contact me at (720) 431-1190 if you require additional information.

Sincerely,

Tasman Geosciences, Inc.



Brandon Bruns, PE
Project Manager

Attachments:

Table 1 – Soil Analytical Data

Figure 1 – Site Location Map

Figure 2 – Remedial Excavation Soil Analytical Results Map (09/07/2018)

Attachment A – Laboratory Analytical Data Report

TABLES

TABLE 1
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - ABBEY D01-29

Soil Sample ID	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	Naphthalene (mg/kg)
COGCC Standard		0.17	85	100	175	500		23
SS01@7'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS02@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS03@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS04@3'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS08@7'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS09@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS10@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS12@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS13@6'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010
SS14@7'	09/07/18	<0.0020	<0.0050	<0.0050	<0.010	<50	<50	<0.010

Soil Sample ID	Date	EC (mmhos/cm)	pH	SAR
		4 or 2x BG	6-9	<12
SS04@3'	09/07/18	0.892	7.02	2.62

Notes:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

mg/kg = Milligrams per kilogram

EC = Specific conductance

BG = Background

SAR = Sodium adsorption ratio

mmhos/cm = milliMhos/centimeter

< = Analytical result is less than the indicated laboratory reporting limit

Soil standards referenced from COGCC Table 910-1

Highlighted results are equal to or exceed the COGCC Table 910-1 standard

FIGURES

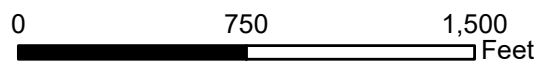
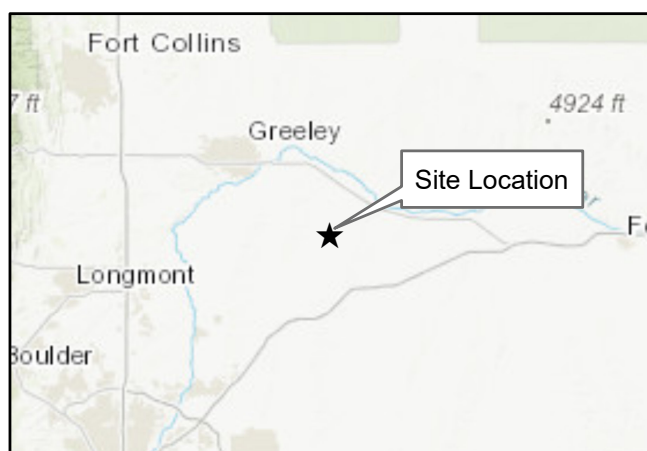
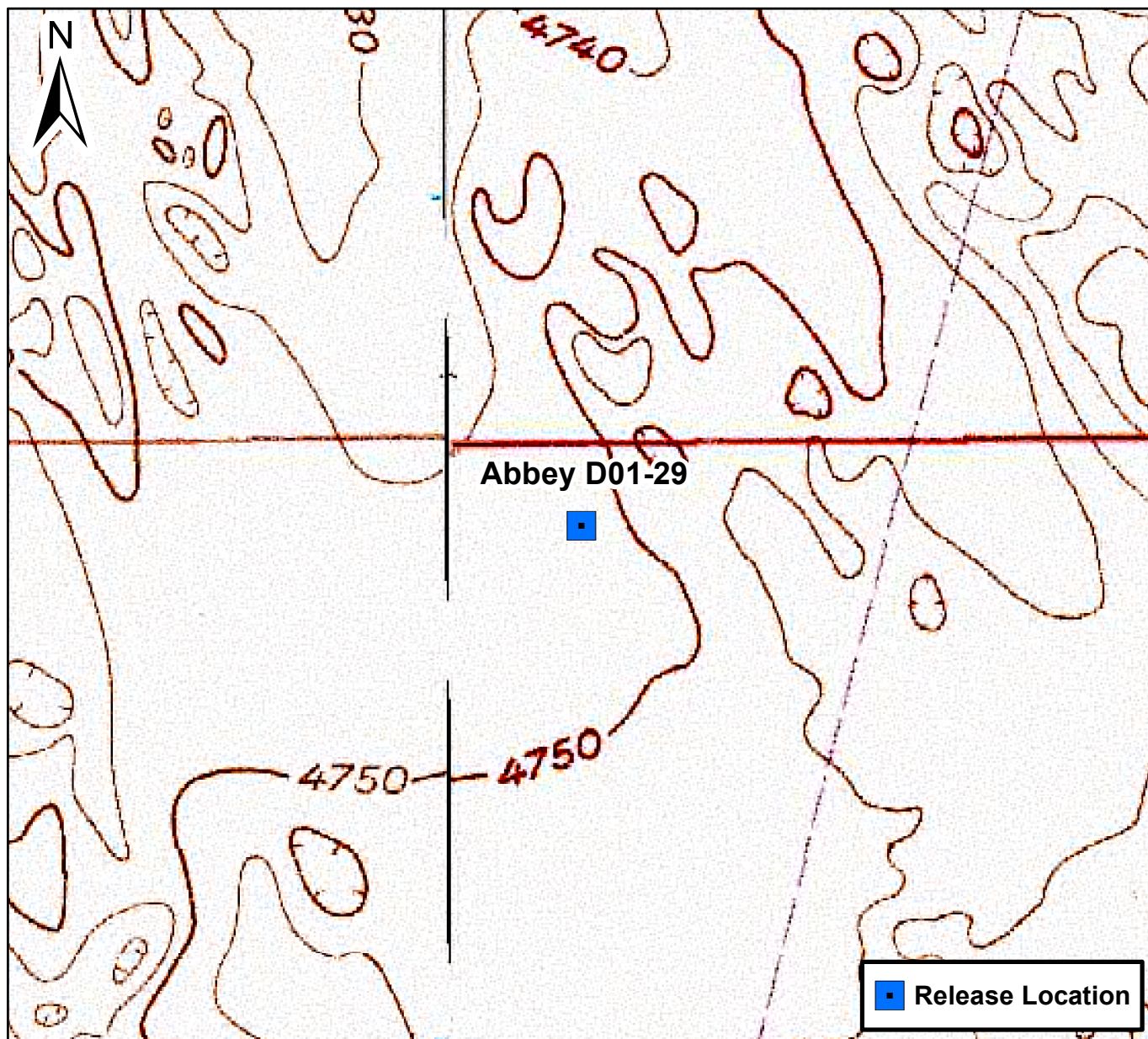
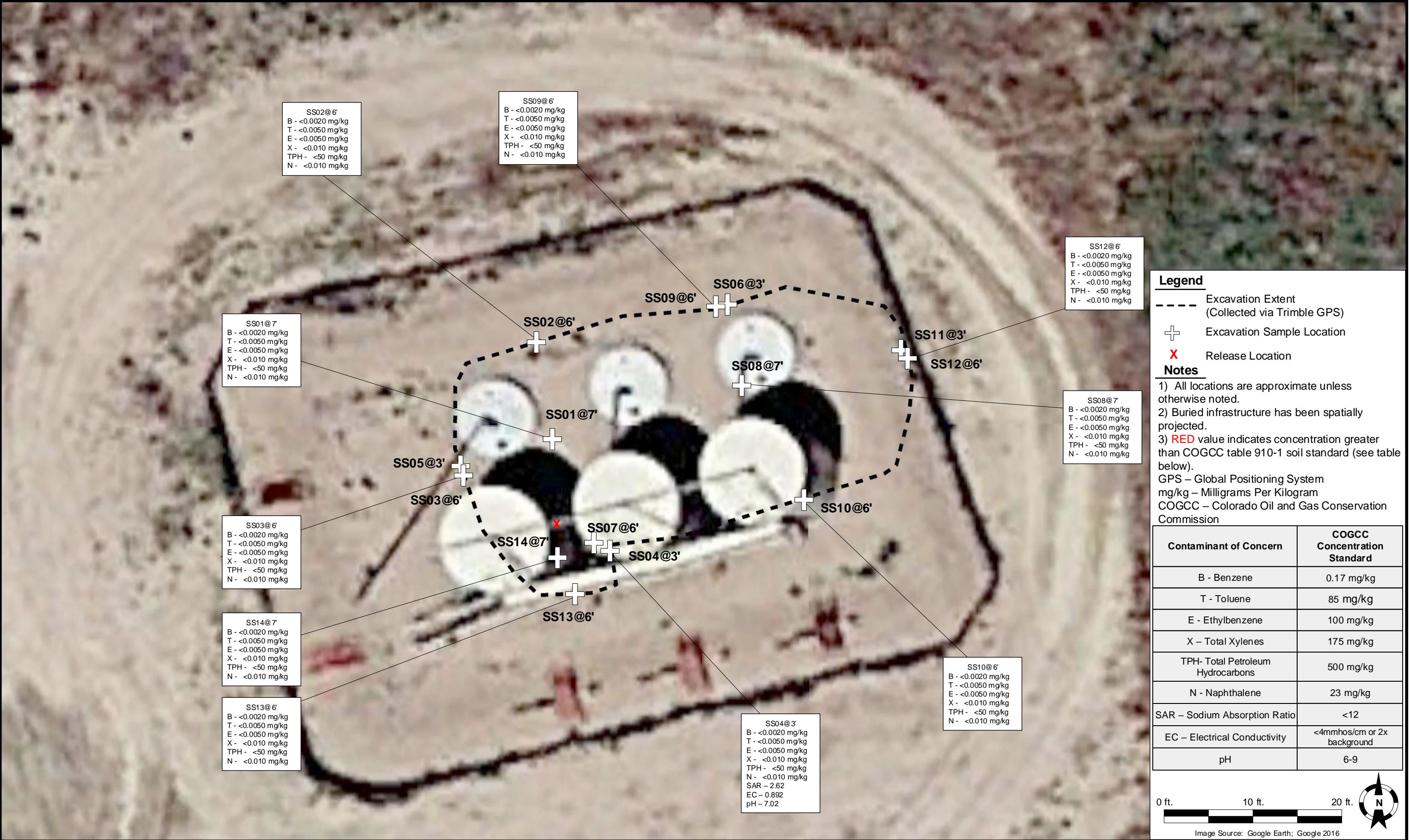


Figure 1

Site Location Map
Abbey D01-29
NWNE S1 T3N R64W
Weld County, Colorado





ATTACHMENT A

LABORATORY ANALYTICAL DATA REPORT

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

September 17, 2018

Brandon Bruns

Tasman Geosciences

6899 Pecos St, Unit C

Denver, CO 80221

RE: Noble - Abbey D01-29

Enclosed are the results of analyses for samples received by Summit Scientific on 09/07/18 18:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@7'	1809078-01	Soil	09/07/18 12:45	09/07/18 18:50
SS02@6'	1809078-02	Soil	09/07/18 12:50	09/07/18 18:50
SS03@6'	1809078-03	Soil	09/07/18 12:53	09/07/18 18:50
SS04@3'	1809078-04	Soil	09/07/18 12:55	09/07/18 18:50
SS08@7'	1809078-05	Soil	09/07/18 13:10	09/07/18 18:50
SS09@6'	1809078-06	Soil	09/07/18 13:15	09/07/18 18:50
SS10@6'	1809078-07	Soil	09/07/18 13:18	09/07/18 18:50
SS12@6'	1809078-08	Soil	09/07/18 13:25	09/07/18 18:50
SS13@6'	1809078-09	Soil	09/07/18 14:35	09/07/18 18:50
SS14@7'	1809078-10	Soil	09/07/18 14:40	09/07/18 18:50

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

1809078

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

Page 1 of 1

Project Manager: Brandon Bruns, +1408 234 5678 Jacob Evans
E-Mail: bbruns@plasma-geo.com
Project Name: ~~XXXXXXXXXX~~ (P) ABBEY D01-29
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 GC/EAN	8215 - DRO	PH, EC, SAC										
SS01@7'	9/7/18	1245	1			X			X			8260 GC/EAN	8215 - DRO	PH, EC, SAC									* Sameday TAT FOR SS14@7' & SS13@6' Standard TAT FOR RST	
SS02@6'		1250	1																					
SS03@6'		1253	1																					
SS04@3'		1255	1											X										
SS08@7'		1310	1																					
SS09@6'		1315	1																					
SS10@6'		1318	1																					
SS12@6'		1325	1																					
SS13@6'		1435	1																					
SS14@7'	✓	1440	1																					
Relinquished by: _____ Date/Time: 9/7/18 1930				Received by: [Signature] Date/Time: 9/7/18 1950				Turn Around Time (Check) 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"/>																Notes:
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____																				
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: 14.7 Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																

Sample Receipt Checklist

1809078

S2 Work Order: _____

Client: Noble/Tasman Client Project ID: Abbey D01-29

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

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

Temp (°C)	14.7
-----------	------

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 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 ⁽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.

UP
Custodian Printed Name or Initials

[Signature]
Signature or Initials of Custodian

9-7-18 1845
Date/Time



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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS01@7'
1809078-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 12:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		88.5 %	30-150		"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS02@6'
1809078-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.8 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 12:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		84.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS03@6'
1809078-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 12:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.3 %	30-150		"	"	"	"	

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS04@3'
1809078-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.7 %	30-150		"	"	"	"	

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

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	133	10.5	mg/kg dry	1	1809103	09/12/18	09/12/18	EPA 6020B	
Magnesium	110	5.26	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS04@3'
1809078-04 (Soil)

Summit Scientific

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

Sodium	169	5.26	mg/kg dry	1	1809103	09/12/18	09/12/18	EPA 6020B
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Calculated Analysis

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.62	0.100	units	1	1809145	09/14/18	09/14/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	1809110	09/13/18	09/13/18	Calculation	
pH	7.02		pH Units	"	1809096	09/12/18	09/12/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **09/07/18 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.892	0.0100	mmhos/cm	1	1809098	09/12/18	09/12/18	EPA 120.1	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS08@7'
1809078-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS09@6'
1809078-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 13:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		85.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS10@6'
1809078-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 13:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		86.8 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS12@6'
1809078-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809071	09/10/18	09/11/18	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: **09/07/18 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.0 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809070	"	09/12/18	EPA 8015M	

Date Sampled: **09/07/18 13:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS13@6'
1809078-09 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809065	09/07/18	09/08/18	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: **09/07/18 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809067	"	09/08/18	EPA 8015M	

Date Sampled: **09/07/18 14:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		92.5 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

SS14@7'
1809078-10 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/18 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1809065	09/07/18	09/08/18	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: **09/07/18 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		99.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/18 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1809067	"	09/08/18	EPA 8015M	

Date Sampled: **09/07/18 14:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		93.4 %	30-150		"	"	"	"	

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

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 1809065 - EPA 5030 Soil MS

Blank (1809065-BLK1)

Prepared: 09/07/18 Analyzed: 09/08/18

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	0.0352		"	0.0396		88.9	23-173			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.7	21-167			

LCS (1809065-BS1)

Prepared: 09/07/18 Analyzed: 09/08/18

Benzene	0.0870	0.0020	mg/kg	0.100		87.0	70-130			
Toluene	0.0939	0.0050	"	0.100		93.9	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.223	0.010	"	0.200		112	70-130			
o-Xylene	0.0974	0.0050	"	0.100		97.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0396		97.3	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	21-167			

Matrix Spike (1809065-MS1)

Source: 1809065-02

Prepared: 09/07/18 Analyzed: 09/08/18

Benzene	0.0853	0.0020	mg/kg	0.100	ND	85.3	70-130			
Toluene	0.0938	0.0050	"	0.100	ND	93.8	70-130			
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
m,p-Xylene	0.221	0.010	"	0.200	ND	111	70-130			
o-Xylene	0.0959	0.0050	"	0.100	ND	95.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0367		"	0.0396		92.6	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
09/17/18 11:58

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 1809065 - EPA 5030 Soil MS

Matrix Spike Dup (1809065-MSD1)

Source: 1809065-02

Prepared: 09/07/18 Analyzed: 09/08/18

Benzene	0.0847	0.0020	mg/kg	0.100	ND	84.7	70-130	0.706	30	
Toluene	0.0928	0.0050	"	0.100	ND	92.8	70-130	0.997	30	
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	0.540	30	
m,p-Xylene	0.223	0.010	"	0.200	ND	112	70-130	1.09	30	
o-Xylene	0.0963	0.0050	"	0.100	ND	96.3	70-130	0.406	30	
Surrogate: 1,2-Dichloroethane-d4	0.0373		"	0.0396		94.2	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.5	21-167			

Batch 1809071 - EPA 5030 Soil MS

Blank (1809071-BLK1)

Prepared: 09/10/18 Analyzed: 09/12/18

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	0.0386		"	0.0396		97.6	23-173			
Surrogate: Toluene-d8	0.0390		"	0.0400		97.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

LCS (1809071-BS1)

Prepared: 09/10/18 Analyzed: 09/12/18

Benzene	0.0841	0.0020	mg/kg	0.100		84.1	70-130			
Toluene	0.0953	0.0050	"	0.100		95.3	70-130			
Ethylbenzene	0.110	0.0050	"	0.100		110	70-130			
m,p-Xylene	0.220	0.010	"	0.200		110	70-130			
o-Xylene	0.0956	0.0050	"	0.100		95.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0369		"	0.0396		93.3	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.3	21-167			

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
09/17/18 11:58

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 1809071 - EPA 5030 Soil MS

Matrix Spike (1809071-MS1)		Source: 1809049-01			Prepared: 09/10/18 Analyzed: 09/12/18					
Benzene	0.0854	0.0020	mg/kg	0.100	ND	85.4	70-130			
Toluene	0.0922	0.0050	"	0.100	ND	92.2	70-130			
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
m,p-Xylene	0.218	0.010	"	0.200	ND	109	70-130			
o-Xylene	0.0959	0.0050	"	0.100	ND	95.9	70-130			
Surrogate: 1,2-Dichloroethane-d4		0.0389	"	0.0396		98.2	23-173			
Surrogate: Toluene-d8		0.0387	"	0.0400		96.8	20-170			
Surrogate: 4-Bromofluorobenzene		0.0377	"	0.0400		94.4	21-167			
Matrix Spike Dup (1809071-MSD1)		Source: 1809049-01			Prepared: 09/10/18 Analyzed: 09/12/18					
Benzene	0.0859	0.0020	mg/kg	0.100	ND	85.9	70-130	0.596	30	
Toluene	0.0928	0.0050	"	0.100	ND	92.8	70-130	0.714	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	0.109	30	
m,p-Xylene	0.221	0.010	"	0.200	ND	110	70-130	1.09	30	
o-Xylene	0.0968	0.0050	"	0.100	ND	96.8	70-130	0.934	30	
Surrogate: 1,2-Dichloroethane-d4		0.0378	"	0.0396		95.5	23-173			
Surrogate: Toluene-d8		0.0390	"	0.0400		97.5	20-170			
Surrogate: 4-Bromofluorobenzene		0.0384	"	0.0400		96.1	21-167			

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1809067 - EPA 3550A

Blank (1809067-BLK1)

Prepared: 09/07/18 Analyzed: 09/08/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1809067-BS1)

Prepared: 09/07/18 Analyzed: 09/08/18

C10-C28 (DRO) 582 50 mg/kg 500 116 70-130

Matrix Spike (1809067-MS1)

Source: 1809065-01

Prepared: 09/07/18 Analyzed: 09/08/18

C10-C28 (DRO) 537 50 mg/kg 500 56.9 96.1 70-130

Matrix Spike Dup (1809067-MSD1)

Source: 1809065-01

Prepared: 09/07/18 Analyzed: 09/08/18

C10-C28 (DRO) 599 50 mg/kg 500 56.9 109 70-130 10.9 20

Batch 1809070 - EPA 3550A

Blank (1809070-BLK1)

Prepared: 09/10/18 Analyzed: 09/11/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1809070-BS1)

Prepared: 09/10/18 Analyzed: 09/11/18

C10-C28 (DRO) 608 50 mg/kg 500 122 70-130

Matrix Spike (1809070-MS1)

Source: 1809049-01

Prepared: 09/10/18 Analyzed: 09/11/18

C10-C28 (DRO) 562 50 mg/kg 500 26.9 107 70-130

Matrix Spike Dup (1809070-MSD1)

Source: 1809049-01

Prepared: 09/10/18 Analyzed: 09/11/18

C10-C28 (DRO) 584 50 mg/kg 500 26.9 111 70-130 3.93 20

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

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 1809103 - General Preparation

Blank (1809103-BLK1)

Prepared & Analyzed: 09/12/18

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

LCS (1809103-BS1)

Prepared & Analyzed: 09/12/18

Calcium	505	10.0	mg/kg wet	500	101	70-130
Magnesium	558	5.00	"	500	112	70-130
Sodium	594	5.00	"	500	119	70-130

Duplicate (1809103-DUP1)

Source: 1809078-04

Prepared & Analyzed: 09/12/18

Calcium	134	10.5	mg/kg dry	133	0.665	20
Magnesium	91.4	5.26	"	110	18.5	20
Sodium	153	5.26	"	169	10.4	20

Matrix Spike (1809103-MS1)

Source: 1809078-04

Prepared & Analyzed: 09/12/18

Calcium	619	10.5	mg/kg dry	526	133	92.3	70-130
Magnesium	661	5.26	"	526	110	105	70-130
Sodium	739	5.26	"	526	169	108	70-130

Matrix Spike Dup (1809103-MSD1)

Source: 1809078-04

Prepared & Analyzed: 09/12/18

Calcium	641	10.5	mg/kg dry	526	133	96.5	70-130	3.45	25
Magnesium	661	5.26	"	526	110	105	70-130	0.126	25
Sodium	795	5.26	"	526	169	119	70-130	7.33	25

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Brun

Reported:
09/17/18 11:58

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 1809096 - General Preparation

LCS (1809096-BS1)

Prepared & Analyzed: 09/12/18

pH	9.2		pH Units	9.18	99.8	95-105
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Duplicate (1809096-DUP1)

Source: 1809053-04

Prepared & Analyzed: 09/12/18

pH	7.1		pH Units	7.1	0.565	20
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Batch 1809110 - General Preparation

Duplicate (1809110-DUP1)

Source: 1809078-04

Prepared & Analyzed: 09/13/18

% Solids	95.1		%	95.1	0.00	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1809098 - General Preparation

Blank (1809098-BLK1)

Prepared & Analyzed: 09/12/18

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1809098-BS1)

Prepared & Analyzed: 09/12/18

Specific Conductance (EC) 0.792 0.0100 mmhos/cm 0.750 106 90-110

Duplicate (1809098-DUP1)

Source: 1809053-04

Prepared & Analyzed: 09/12/18

Specific Conductance (EC) 0.272 0.0100 mmhos/cm 0.293 7.35 20

Summit Scientific

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

Project: Noble - Abbey D01-29

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
09/17/18 11:58

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