



Wellhead Closure Checklist



COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):	Pit Closure	Tank Battery Closure	Flowline Closure	Partially Buried Vault Closure
Site Name & COGCC Facility Number: HSR-Charlton 0-20		Date: 9/13/21		Remediation Project #: 19600
Associated Wells:		Age of Site:		Number of Photos Attached: 10
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.300060, -104.680470				Estimated Facility Size (acres):
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good Condition - no erosion, corrosion, waste or debris				
USCS Soil Type: SP		Estimated Depth to Groundwater: 2'		
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) Yes - extends to unknown size and depth				
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth) None observed				
Wellhead(s)				
Well API	05-123-15387			
Age	✓			
Condition of surface around wellhead	good condition			
PID Readings	NA			
Condition of subsurface (staining present)	Black and gray staining			
PID Readings	1.0-1500			
Sample taken? Location/Sample ID#	See below			
Photo Number(s)	1-10			
Other observations regarding wellheads: One sample taken from each of the 4 sidewalls at 2.5' depth (SS01 - SS04), one base sample (PS01) at 4' depth. One flowline sample (FL01-A) at 3' depth. Two background samples taken at 2.5' and 4' (BG01). One groundwater sample (GW01) taken at 4' depth.				
Summary				
Was impacted soil identified? No Yes - less than 10 cubic yards <u>Yes</u> - more than 10 cubic yards				
Total number of samples field screened: 9		Total number of samples collected: 9		
Highest PID Reading: 1,500		Total number of samples submitted to lab for analysis: 9		
If more than 10 cubic yards of impacted soil were observed:				
Vertical extent: 4'		Estimated spill volume: unknown		
Lateral extent: 20'		Volume of soil removed: 0		
Is additional investigation required? <u>Yes</u>				
Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils <u>Yes</u> - groundwater impacted and/or in contact with impacted soils				
Measured depth to groundwater: 2'		Was remedial groundwater removal conducted? Yes No		
Date Groundwater was encountered: 9/13/21		Commencement date of removal:		
Seen on groundwater? Yes <u>No</u>		Volume of groundwater removed prior to sampling:		
Free product observed? Yes <u>No</u>		Volume of groundwater removed post sampling:		
Total number of samples collected: 1		Total Volume of groundwater removed:		
Total number of samples submitted to lab for analysis: 1				

Photographic Log

					
Equipment ID: SS01		Equipment Type: Wellhead	Equipment ID: SS02		Equipment Type: Wellhead
Material: Steel	Volume:	Contents: Oil/Gas/Water	Material: Steel	Volume:	Contents: Oil/Gas/Water
Notes/Conditions: SS01 @2.5' north sample location. HC staining and odor.			Notes/Conditions: SS02 @2.5' east sample location. HC Staining and odor.		

Photographic Log

							
Equipment ID: SS03		Equipment Type: Wellhead		Equipment ID: SS04		Equipment Type: Wellhead	
Material: Steel		Volume:		Material: Steel		Volume:	
		Contents: Oil/Gas/Water				Contents: Oil/Gas/Water	
Notes/Conditions: SS03@2.5' south sample location. HC staining and odor.							
				Notes/Conditions: SS04@2.5'. West sample location. Black and gray staining with a HC odor.			

Photographic Log


Equipment ID:FS01

Equipment Type: Wellhead

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions: FS01 @4' base sample location. Black and gray stains with HC odor.

Equipment ID:FL01-A

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions: FL01-A @3' flow line sample location. Black and gray staining with a HC odor.

Photographic Log

Equipment ID: FL01-B

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions: FL01-B @ 3' flowline sample location at separator. Some gray staining with a slight HC odor.

Equipment ID: BG01

Equipment Type:
Material:
Volume:
Contents:
Notes/Conditions: Background sample BG01 @ 2.5' sample location taken SE of site.

Photographic Log


Equipment ID: BG01

Equipment Type:
Material:
Volume:
Contents:
Notes/Conditions: Background sample BG01@4' sample location taken SE of site.

Equipment ID: GW01

Equipment Type: Wellhead

Material:
Volume:
Contents:
Notes/Conditions: GW01 groundwater sample location.

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - HSR CHARLTON 08-20

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
SS01@2.5'	09/13/21	1500	HC Staining	Strong HC odor	Lab	40.30011562	-104.6805058	1.0
SS02@2.5'	09/13/21	367.8	HC Staining	HC odor	Lab	40.30008575	-104.6804389	1.0
SS03@2.5'	09/13/21	17.6	HC Staining	Slight HC odor	Lab	40.30003160	-104.6804500	1.0
SS04@2.5'	09/13/21	25.8	HC Staining	Strong HC odor	Lab	40.30006257	-104.6805375	1.1
FS01@4'	09/13/21	6.4	HC Staining	HC odor	Lab	40.30007480	-104.6804930	NM
FL01-A@3'	09/13/21	9.3	HC Staining	Strong HC odor	Lab	40.30010971	-104.6805364	1.1
FL01-B@3'	09/13/21	3.3	HC Staining	Slight HC odor	Lab	40.30026496	-104.6806384	1.0
BG01@2.5'	09/13/21	1.5	Organic Content	Organic odor	Lab	40.30011362	-104.6802754	1.1
BG01@4'	09/13/21	1.0	Organic Content	Organic odor	Lab	40.30011362	-104.6802754	1.1

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon NM = Not Measured

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - HSR CHARLTON 08-20

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SS01@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.037	<0.0038	20	160	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0331	<0.00500	0.0115	0.209	0.169
SS02@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	0.17	<0.010	6.8	120	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.012	<0.00500	<0.00500	0.0859	0.0997
SS03@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SS04@2.5'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	1.7	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@4'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FL01-A@3'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	1.8	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00855	<0.00500	<0.00500	<0.00500	<0.00500
FL01-B@3'	09/13/21	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
SS01@2.5'	09/13/21	8.04	0.134	0.708	0.18
SS02@2.5'	09/13/21	8.20	0.138	0.86	0.253
SS03@2.5'	09/13/21	7.94	0.185	0.853	0.142
SS04@2.5'	09/13/21	8.12	0.0809	0.431	0.178
FS01@4'	09/13/21	7.97	0.264	0.572	0.260
FL01-A@3'	09/13/21	7.82	0.102	0.752	0.163
FL01-B@3'	09/13/21	8.52	0.0745	0.311	0.218
BG01@2.5'	09/13/21	7.69	NA	NA	NA

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SS01@2.5'	09/13/21	1.92	254	<0.227	<0.30	6.84	6.88	6.39	0.914	0.0231	32.3
SS02@2.5'	09/13/21	2.57	207	<0.227	<0.30	7.76	11.4	6.68	0.730	0.0307	32.0
BG01@2.5'	09/13/21	2.12	64.5	<0.231	<0.30	7.69	7.21	5.87	1.06	0.0356	36.3

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

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

Highlighted results are equal to or exceed the COGCC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzanthracene

Benzo(b) = Benzo(a)fluoranthene

Benzo(k) = Benzo(a)fluoranthene

Benzo(a) = Benzopyrene

A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

TABLE 3
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - HSR CHARLTON 08-20

Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Napthalene (µg/L)	1,2,4 - TMB (µg/L)	1,3,5 - TMB (µg/L)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Groundwater Standard		5	560	700	1,400	140	67	67	<1.25 X Background	250 or <1.25 X Background	250 or <1.25 X Background
GW01	09/13/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	NA	NA	NA

Notes:

- 1.) Groundwater standards referenced from 2 CCR 404-1, COGCC Table 915-1 (January 15th, 2021)
- 2.) Groundwater analytical data received prior to January 2020 can be referenced in SITE NAME Fourth Quarter 2020 Site Monitoring Data (COGCC Document #)

Definitions:

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

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

mg/L = Milligrams per liter

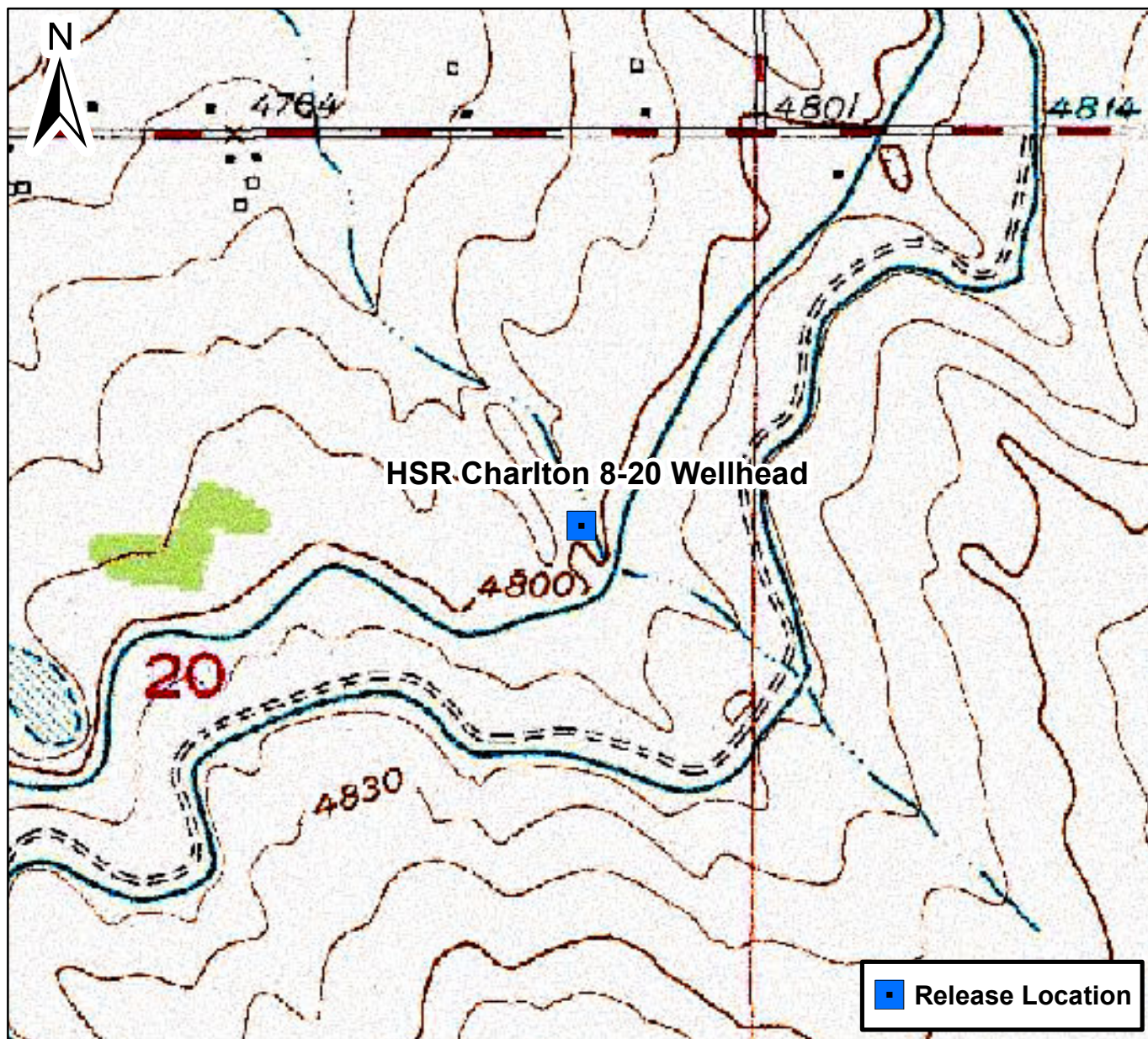
1,2,4 - TMB = 1,2,4 - trimethylbenzene

1,3,5 - TMB = 1,3,5 - trimethylbenzene

TDS = Total Dissolved Solids

NA = Not Analyzed

Highlighted results are equal to or exceed the COGCC Table 915-1 standard



0 875 1,750 Feet

Figure 1

Site Location Map
 HSR Charlton 8-20 Wellhead
 SENE S20 T4N R65W
 Weld County, Colorado





Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 08, 2021

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

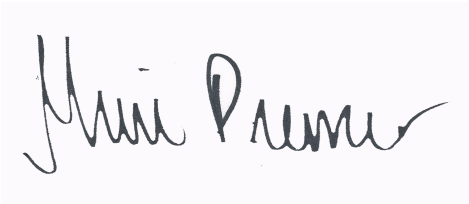
Broomfield, CO 80020

RE: Noble - HSR Charlton 08-20

Work Order #2109182

Enclosed are the results of analyses for samples received by Summit Scientific on 09/13/21 18:00. 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 purple rectangular background.

Muri Premier For Paul Shrewsbury
President



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

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@2.5'	2109182-01	Soil	09/13/21 13:30	09/13/21 18:00
SS02@2.5'	2109182-02	Soil	09/13/21 13:35	09/13/21 18:00
SS03@2.5'	2109182-03	Soil	09/13/21 13:40	09/13/21 18:00
SS04@2.5'	2109182-04	Soil	09/13/21 12:40	09/13/21 18:00
FS01@4'	2109182-05	Soil	09/13/21 14:20	09/13/21 18:00
FL01-A@3'	2109182-06	Soil	09/13/21 12:45	09/13/21 18:00
FL01-B@3'	2109182-07	Soil	09/13/21 13:10	09/13/21 18:00
BG01@2.5'	2109182-08	Soil	09/13/21 14:00	09/13/21 18:00
GW01	2109182-10	Water	09/13/21 13:00	09/13/21 18:00

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.

2109182

303-277-9310

Page 1 of 1

Project Manager: Jake Whritenour, Invoice: Jeff White

E-Mail: jwhritenour@tasman-geo.com/ Noble Group

Project Name: HSR Charlton 08-20

Project Number: RC #: 425858729 Task #: 247037

Project Number: RC #: 425858729 Task #: 247037

					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	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	Naphthalene	1,2,4-TMB 1,3,5	pH, EC, SAR by saturated paste	
1	SS01 @ 2.5'	9/13/21	1330	2			X			X				X	X	X	X	X				
2	SS02 @ 2.5'		1335	2			X			X				X	X	X	X	X				
3	SS03 @ 2.5'		1340	2			X			X				X	X	X	X	X				
4	SS04 @ 2.5'		1246	2			X			X				X	X	X	X	X				
5	F501 @ 4'		1420	2			X			X				X	X	X	X	X				
6	FL01-A @ 3'		1245	2			X			X				X	X	X	X	X				
7	FL01-B @ 3'		1310	2			X			X				X	X	X	X	Y				
8	B601 @ 2.5'		1400	2			X			X							X	X				HOLD
9	B601 @ 4'		1405	1			X			X							X	X				HOLD
10	Gw01		1300	3	X				X				X						X	X		
Relinquished by:		Date/Time:		Received by:				Date/Time:				Turn Around Time (Check)								Notes:		
		9/13/21 1620		Tasman's Lock Box				9/13/21 1620				____ Same Day 72 hours ____ 24 hours X Standard ____ 48 hours _____										
Relinquished by:		Date/Time:		Received by:				Date/Time:				Sample Integrity:										
Tasman's Lock Box		9/13/21 1800						9/13/21 1800				Temperature Upon Receipt: 14.4										
Relinquished by:		Date/Time:		Received by:				Date/Time:				Samples Intact: (Yes) No										

Sample Receipt Checklist

S2 Work Order_____

Client: Noble FASMAN Client Project ID: HSR Carlton 08-20

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

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

Temp (°C)	14.4
-----------	------

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

NG
Custodian Printed Name or Initials


Signature of Custodian

9/13/21
Date/Time



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

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.037	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	20	0.50	"	"	"	"	"	"	

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		264 %	21-167		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	160	50	mg/kg	1	BEI0334	09/15/21	09/15/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: 09/13/21 13:30									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/18/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0331	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0115	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.209	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.169	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.180	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.92	0.227	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B
Barium	254	0.453	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	6.84	0.453	"	"	"	"	"	"
Lead	6.88	0.227	"	"	"	"	"	"
Nickel	6.39	0.453	"	"	"	"	"	"
Selenium	0.914	0.295	"	"	"	"	"	"
Silver	0.0231	0.0227	"	"	"	"	"	"
Zinc	32.3	0.453	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	32.5	0.0567	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B	
Magnesium	3.96	0.0567	"	"	"	"	"	"	
Sodium	3.04	0.0567	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.134	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS01@2.5'
2109182-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.2	%	1	BEI0349	09/16/21	09/17/21	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.708	0.0100		mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.04			pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	0.17	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6.8	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		144 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	120	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/18/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0120	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0859	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0997	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		51.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.253	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	2.57	0.227	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B
Barium	207	0.454	"	"	"	"	"	"
Cadmium	ND	0.227	"	"	"	"	"	"
Copper	7.76	0.454	"	"	"	"	"	"
Lead	11.4	0.227	"	"	"	"	"	"
Nickel	6.68	0.454	"	"	"	"	"	"
Selenium	0.730	0.295	"	"	"	"	"	"
Silver	0.0307	0.0227	"	"	"	"	"	"
Zinc	32.0	0.454	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.3	0.0568	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B	
Magnesium	4.95	0.0568	"	"	"	"	"	"	
Sodium	3.55	0.0568	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.138	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS02@2.5'
2109182-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.0	%	1	BEI0349	09/16/21	09/17/21	Calculation
----------	------	---	---	---------	----------	----------	-------------

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.860	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.20		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		109 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		63.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.142	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS03@2.5'
2109182-03 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.6	0.0601	mg/L dry	1	BEI0350	09/16/21	09/21/21	EPA 6020B
Magnesium	3.33	0.0601	"	"	"	"	"	"
Sodium	3.22	0.0601	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.185	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.853	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.7	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		128 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		120 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		67.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.178	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

SS04@2.5'
2109182-04 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.2	0.0569	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.14	0.0569	"	"	"	"	"	"
Sodium	1.39	0.0569	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0809	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.8		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.431	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		74.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.260	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FS01@4'
2109182-05 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	17.1	0.0626	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.26	0.0626	"	"	"	"	"	"
Sodium	4.55	0.0626	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.264	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.9		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.572	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1.8	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		130 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		123 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.00855	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10		46.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	0.163	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-A@3'
2109182-06 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	21.7	0.0595	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	3.23	0.0595	"	"	"	"	"	"
Sodium	1.92	0.0595	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.102	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.1		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.752	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 12:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.82		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEI0333	09/15/21	09/16/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		95.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEI0334	09/15/21	09/16/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEI0310	09/16/21	09/19/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		74.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		89.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.218	0.0100	mg/L	1	BEI0407	09/20/21	09/22/21	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
---------	--------	-----------------	-------	----------	-------	----------	----------	--------	-------

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

FL01-B@3'
2109182-07 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Calcium	25.0	0.0565	mg/L dry	1	BEI0350	09/16/21	09/22/21	EPA 6020B
Magnesium	4.25	0.0565	"	"	"	"	"	"
Sodium	1.53	0.0565	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0745	0.00100	units	1	BEI0475	09/22/21	09/22/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BEI0349	09/16/21	09/17/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.311	0.0100	mmhos/cm	1	BEI0351	09/16/21	09/17/21	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.52		pH Units	1	BEI0352	09/16/21	09/17/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

BG01@2.5'
2109182-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.12	0.231	mg/kg dry	1	BEJ0057	10/05/21	10/07/21	EPA 6020B	
Barium	64.5	0.462	"	"	"	"	"	"	
Cadmium	ND	0.231	"	"	"	"	"	"	
Copper	7.69	0.462	"	"	"	"	"	"	
Lead	7.21	0.231	"	"	"	"	"	"	
Nickel	5.87	0.462	"	"	"	"	"	"	
Selenium	1.06	0.300	"	"	"	"	"	"	
Silver	0.0356	0.0231	"	"	"	"	"	"	
Zinc	36.3	0.462	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEJ0061	10/05/21	10/05/21	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	86.6		%	1	BEJ0060	"	10/05/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **09/13/21 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.69		pH Units	1	BEJ0073	10/05/21	10/05/21	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

GW01
2109182-10 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/13/21 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BEI0275	09/13/21	09/14/21	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **09/13/21 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		140 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		21-167		"	"	"	"	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0275 - EPA 5030 Water MS

Blank (BEI0275-BLK1)

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.9	23-173			
Surrogate: Toluene-d8	14.1		"	13.3		106	20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		96.5	21-167			

LCS (BEI0275-BS1)

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	28.9	1.0	ug/l	33.3		86.6	51-132			
Toluene	34.7	1.0	"	33.3		104	51-138			
Ethylbenzene	37.1	1.0	"	33.3		111	58-146			
m,p-Xylene	74.5	2.0	"	66.7		112	57-144			
o-Xylene	36.8	1.0	"	33.3		110	53-146			
Naphthalene	33.5	1.0	"	33.3		100	70-130			
1,2,4-Trimethylbenzene	39.3	1.0	"	33.3		118	70-130			
1,3,5-Trimethylbenzene	39.2	1.0	"	33.3		118	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.8	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.1		"	13.3		98.0	21-167			

Matrix Spike (BEI0275-MS1)

Source: 2109158-01

Prepared: 09/13/21 Analyzed: 09/14/21

Benzene	28.6	1.0	ug/l	33.3	ND	85.9	34-141			
Toluene	33.2	1.0	"	33.3	ND	99.5	27-151			
Ethylbenzene	37.1	1.0	"	33.3	ND	111	29-160			
m,p-Xylene	73.7	2.0	"	66.7	ND	111	20-166			
o-Xylene	35.4	1.0	"	33.3	ND	106	33-159			
Naphthalene	43.0	1.0	"	33.3	ND	129	70-130			
1,2,4-Trimethylbenzene	38.5	1.0	"	33.3	ND	115	70-130			
1,3,5-Trimethylbenzene	38.1	1.0	"	33.3	ND	114	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.3		"	13.3		99.7	23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		101	21-167			

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0275 - EPA 5030 Water MS

Matrix Spike Dup (BEI0275-MSD1)		Source: 2109158-01			Prepared: 09/13/21		Analyzed: 09/14/21			
Benzene	28.9	1.0	ug/l	33.3	ND	86.7	34-141	0.939	30	
Toluene	34.1	1.0	"	33.3	ND	102	27-151	2.85	30	
Ethylbenzene	37.0	1.0	"	33.3	ND	111	29-160	0.324	30	
m,p-Xylene	74.2	2.0	"	66.7	ND	111	20-166	0.743	30	
o-Xylene	35.9	1.0	"	33.3	ND	108	33-159	1.21	30	
Naphthalene	41.6	1.0	"	33.3	ND	125	70-130	3.21	30	
1,2,4-Trimethylbenzene	39.2	1.0	"	33.3	ND	118	70-130	1.98	30	
1,3,5-Trimethylbenzene	38.4	1.0	"	33.3	ND	115	70-130	0.707	30	
Surrogate: 1,2-Dichloroethane-d4	14.2		"	13.3		107	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.9	21-167			

Batch BEI0333 - EPA 5030 Soil MS

Blank (BEI0333-BLK1)		Prepared: 09/15/21 Analyzed: 09/16/21								
Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0405		"	0.0400		101	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	21-167			

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0333 - EPA 5030 Soil MS

LCS (BEI0333-BS1)

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.118	0.0020	mg/kg	0.100		118		70-130			
Toluene	0.104	0.0050	"	0.100		104		70-130			
Ethylbenzene	0.0900	0.0050	"	0.100		90.0		70-130			
m,p-Xylene	0.171	0.010	"	0.200		85.7		70-130			
o-Xylene	0.0898	0.0050	"	0.100		89.8		70-130			
1,2,4-Trimethylbenzene	0.0861	0.0050	"	0.100		86.1		70-130			
1,3,5-Trimethylbenzene	0.0835	0.0050	"	0.100		83.5		70-130			
Naphthalene	0.0892	0.0038	"	0.100		89.2		70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0463		"	0.0400		116		23-173			
Surrogate: Toluene-d8	0.0437		"	0.0400		109		20-170			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4		21-167			

Matrix Spike (BEI0333-MS1)

Source: 2109182-01

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.0811	0.0020	mg/kg	0.100	ND	81.1		70-130			
Toluene	0.0579	0.0050	"	0.100	ND	57.9		70-130			QM-07
Ethylbenzene	0.0368	0.0050	"	0.100	ND	36.8		70-130			QM-07
m,p-Xylene	0.152	0.010	"	0.200	ND	75.9		70-130			
o-Xylene	0.0834	0.0050	"	0.100	ND	83.4		70-130			
1,2,4-Trimethylbenzene	0.0949	0.0050	"	0.100	ND	94.9		70-130			
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.100	0.0374	108		70-130			
Naphthalene	0.0680	0.0038	"	0.100	ND	68.0		70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0408		"	0.0400		102		23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2		20-170			
Surrogate: 4-Bromofluorobenzene	0.0450		"	0.0400		112		21-167			

Matrix Spike Dup (BEI0333-MSD1)

Source: 2109182-01

Prepared: 09/15/21 Analyzed: 09/16/21

Benzene	0.0663	0.0020	mg/kg	0.100	ND	66.3		70-130	20.0	30	QM-07
Toluene	0.0461	0.0050	"	0.100	ND	46.1		70-130	22.7	30	QM-07
Ethylbenzene	0.0257	0.0050	"	0.100	ND	25.7		70-130	35.5	30	QM-07
m,p-Xylene	0.114	0.010	"	0.200	ND	56.9		70-130	28.6	30	QM-07
o-Xylene	0.0799	0.0050	"	0.100	ND	79.9		70-130	4.26	30	
1,2,4-Trimethylbenzene	0.0659	0.0050	"	0.100	ND	65.9		70-130	36.0	30	QM-07
1,3,5-Trimethylbenzene	0.164	0.0050	"	0.100	0.0374	127		70-130	11.9	30	
Naphthalene	0.0480	0.0038	"	0.100	ND	48.0		70-130	34.5	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0395		"	0.0400		98.7		23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107		20-170			
Surrogate: 4-Bromofluorobenzene	0.0487		"	0.0400		122		21-167			

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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 BEI0334 - EPA 3550A

Blank (BEI0334-BLK1)

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	ND	50	mg/kg
C28-C36 (ORO)	ND	50	"

LCS (BEI0334-BS1)

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	595	50	mg/kg	500	119	70-130
---------------	-----	----	-------	-----	-----	--------

Matrix Spike (BEI0334-MS1)

Source: 2109182-02

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	696	50	mg/kg	500	117	116	70-130
---------------	-----	----	-------	-----	-----	-----	--------

Matrix Spike Dup (BEI0334-MSD1)

Source: 2109182-02

Prepared & Analyzed: 09/15/21

C10-C28 (DRO)	694	50	mg/kg	500	117	115	70-130	0.330	20
---------------	-----	----	-------	-----	-----	-----	--------	-------	----

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEI0310 - EPA 5030 Soil MS

Blank (BEI0310-BLK1)

Prepared: 09/15/21 Analyzed: 09/18/21

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0243		"	0.0333		72.8	40-150			
Surrogate: Fluoranthene-d10	0.0286		"	0.0333		85.9	40-150			

LCS (BEI0310-BS1)

Prepared: 09/15/21 Analyzed: 09/18/21

Acenaphthene	0.0315	0.00500	mg/kg	0.0333		94.6	31-137			
Anthracene	0.0356	0.00500	"	0.0333		107	30-120			
Benzo (a) anthracene	0.0326	0.00500	"	0.0333		97.8	30-120			
Benzo (a) pyrene	0.0314	0.00500	"	0.0333		94.1	30-120			
Benzo (b) fluoranthene	0.0298	0.00500	"	0.0333		89.4	30-120			
Benzo (k) fluoranthene	0.0290	0.00500	"	0.0333		86.9	30-120			
Chrysene	0.0309	0.00500	"	0.0333		92.8	30-120			
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333		44.3	30-120			
Fluoranthene	0.0315	0.00500	"	0.0333		94.6	30-120			
Fluorene	0.0345	0.00500	"	0.0333		104	30-120			
Indeno (1,2,3-cd) pyrene	0.0168	0.00500	"	0.0333		50.4	30-120			
Pyrene	0.0342	0.00500	"	0.0333		103	35-142			
1-Methylnaphthalene	0.0257	0.00500	"	0.0333		77.2	35-142			
2-Methylnaphthalene	0.0251	0.00500	"	0.0333		75.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0242		"	0.0333		72.6	40-150			
Surrogate: Fluoranthene-d10	0.0337		"	0.0333		101	40-150			

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BEI0310 - EPA 5030 Soil MS

Matrix Spike (BEI0310-MS1)				Source: 2109168-01		Prepared: 09/15/21		Analyzed: 09/18/21	
Acenaphthene	0.0226	0.00500	mg/kg	0.0333	ND	67.8	31-137		
Anthracene	0.0244	0.00500	"	0.0333	ND	73.1	30-120		
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.8	30-120		
Benzo (a) pyrene	0.0235	0.00500	"	0.0333	ND	70.4	30-120		
Benzo (b) fluoranthene	0.0324	0.00500	"	0.0333	ND	97.2	30-120		
Benzo (k) fluoranthene	0.0326	0.00500	"	0.0333	ND	97.9	30-120		
Chrysene	0.0242	0.00500	"	0.0333	ND	72.7	30-120		
Dibenz (a,h) anthracene	0.0104	0.00500	"	0.0333	ND	31.3	30-120		
Fluoranthene	0.0239	0.00500	"	0.0333	ND	71.7	30-120		
Fluorene	0.0250	0.00500	"	0.0333	ND	75.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0118	0.00500	"	0.0333	ND	35.3	30-120		
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142		
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.6	15-130		
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0183		"	0.0333		55.0	40-150		
Surrogate: Fluoranthene-d10	0.0246		"	0.0333		73.8	40-150		

Matrix Spike Dup (BEI0310-MSD1)				Source: 2109168-01		Prepared: 09/15/21		Analyzed: 09/18/21	
Acenaphthene	0.0263	0.00500	mg/kg	0.0333	ND	79.0	31-137	15.3	30
Anthracene	0.0279	0.00500	"	0.0333	ND	83.8	30-120	13.7	30
Benzo (a) anthracene	0.0281	0.00500	"	0.0333	ND	84.2	30-120	9.21	30
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	ND	78.7	30-120	11.2	30
Benzo (b) fluoranthene	0.0380	0.00500	"	0.0333	ND	114	30-120	15.9	30
Benzo (k) fluoranthene	0.0304	0.00500	"	0.0333	ND	91.3	30-120	7.06	30
Chrysene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	9.22	30
Dibenz (a,h) anthracene	0.0110	0.00500	"	0.0333	ND	32.9	30-120	5.15	30
Fluoranthene	0.0267	0.00500	"	0.0333	ND	80.1	30-120	11.1	30
Fluorene	0.0290	0.00500	"	0.0333	ND	87.0	30-120	14.6	30
Indeno (1,2,3-cd) pyrene	0.0123	0.00500	"	0.0333	ND	36.9	30-120	4.41	30
Pyrene	0.0283	0.00500	"	0.0333	ND	85.0	35-142	7.93	30
1-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.0	15-130	5.82	50
2-Methylnaphthalene	0.0227	0.00500	"	0.0333	ND	68.1	15-130	10.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.8	40-150		
Surrogate: Fluoranthene-d10	0.0280		"	0.0333		84.1	40-150		

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BEI0407 - EPA 3050B

Blank (BEI0407-BLK1)

Prepared: 09/20/21 Analyzed: 09/22/21

Boron ND 0.0100 mg/L

LCS (BEI0407-BS1)

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.40 0.0100 mg/L 5.00 108 80-120

Duplicate (BEI0407-DUP1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 0.180 0.0100 mg/L 0.180 0.293 20

Matrix Spike (BEI0407-MS1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.57 0.0100 mg/L 5.00 0.180 108 75-125

Matrix Spike Dup (BEI0407-MSD1)

Source: 2109182-01

Prepared: 09/20/21 Analyzed: 09/22/21

Boron 5.53 0.0100 mg/L 5.00 0.180 107 75-125 0.746 25

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0057 - EPA 3050B

Blank (BEJ0057-BLK1)

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Selenium	ND	0.260	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"

LCS (BEJ0057-BS1)

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	48.0	0.200	mg/kg wet	40.0	120	80-120
Barium	47.6	0.400	"	40.0	119	80-120
Cadmium	2.34	0.200	"	2.00	117	80-120
Copper	48.0	0.400	"	40.0	120	80-120
Lead	20.4	0.200	"	20.0	102	80-120
Nickel	46.3	0.400	"	40.0	116	80-120
Selenium	4.66	0.260	"	4.00	116	80-120
Silver	2.26	0.0200	"	2.00	113	80-120
Zinc	44.6	0.400	"	40.0	112	80-120

Duplicate (BEJ0057-DUP1)

Source: 2109182-01

Prepared: 10/05/21 Analyzed: 10/07/21

Arsenic	1.75	0.227	mg/kg dry	1.92	9.49	20
Barium	249	0.453	"	254	2.01	20
Cadmium	0.137	0.227	"	0.122	11.4	20
Copper	7.48	0.453	"	6.84	8.87	20
Lead	8.10	0.227	"	6.88	16.3	20
Nickel	6.43	0.453	"	6.39	0.733	20
Selenium	1.03	0.295	"	0.914	11.9	20
Silver	0.0239	0.0227	"	0.0231	3.28	20
Zinc	33.2	0.453	"	32.3	2.73	20

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BEJ0057 - EPA 3050B

Matrix Spike (BEJ0057-MS1)			Source: 2109182-01		Prepared: 10/05/21		Analyzed: 10/07/21	
Arsenic	57.8	0.227	mg/kg dry	45.3	1.92	123	75-125	
Barium	307	0.453	"	45.3	254	117	75-125	
Cadmium	2.66	0.227	"	2.27	0.122	112	75-125	
Copper	55.9	0.453	"	45.3	6.84	108	75-125	
Lead	32.9	0.227	"	22.7	6.88	115	75-125	
Nickel	56.3	0.453	"	45.3	6.39	110	75-125	
Selenium	6.28	0.295	"	4.53	0.914	118	75-125	
Silver	2.32	0.0227	"	2.27	0.0231	101	75-125	
Zinc	82.4	0.453	"	45.3	32.3	110	75-125	

Matrix Spike Dup (BEJ0057-MSD1)			Source: 2109182-01		Prepared: 10/05/21		Analyzed: 10/07/21	
Arsenic	53.1	0.227	mg/kg dry	45.3	1.92	113	75-125	8.43 25
Barium	291	0.453	"	45.3	254	81.2	75-125	5.41 25
Cadmium	2.83	0.227	"	2.27	0.122	120	75-125	6.29 25
Copper	59.2	0.453	"	45.3	6.84	115	75-125	5.82 25
Lead	33.9	0.227	"	22.7	6.88	119	75-125	2.81 25
Nickel	60.7	0.453	"	45.3	6.39	120	75-125	7.48 25
Selenium	6.36	0.295	"	4.53	0.914	120	75-125	1.20 25
Silver	2.48	0.0227	"	2.27	0.0231	108	75-125	6.68 25
Zinc	82.5	0.453	"	45.3	32.3	111	75-125	0.175 25

Post Spike (BEJ0057-PS1)			Source: 2109182-01		Prepared: 10/05/21		Analyzed: 10/07/21	
Arsenic	127		ug/l	100	4.24	123	75-125	
Barium	676		"	100	561	116	75-125	
Cadmium	5.72		"	5.00	0.269	109	75-125	
Copper	121		"	100	15.1	106	75-125	
Lead	59.8		"	50.0	15.2	89.3	75-125	
Nickel	122		"	100	14.1	108	75-125	
Selenium	14.5		"	10.0	2.02	125	75-125	
Silver	5.09		"	5.00	0.0509	101	75-125	
Zinc	180		"	100	71.3	109	75-125	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

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

Batch BEJ0061 - 3060A Mod

Blank (BEJ0061-BLK1)

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEJ0061-BS1)

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 28.0 0.30 mg/kg wet 25.0 112 80-120

Duplicate (BEJ0061-DUP1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEJ0061-MS1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125

Matrix Spike Dup (BEJ0061-MSD1)

Source: 2109182-01

Prepared & Analyzed: 10/05/21

Chromium, Hexavalent 29.2 0.30 mg/kg dry 28.3 ND 103 75-125 0.00 20

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BEI0350 - General Preparation

Blank (BEI0350-BLK1)

Prepared: 09/16/21 Analyzed: 09/21/21

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BEI0350-BS1)

Prepared: 09/16/21 Analyzed: 09/21/21

Calcium	5.50	0.0500	mg/L wet	5.00	110	70-130
Magnesium	5.11	0.0500	"	5.00	102	70-130
Sodium	4.96	0.0500	"	5.00	99.2	70-130

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

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

Summit Scientific

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

Batch BEI0349 - General Preparation

Duplicate (BEI0349-DUP1)		Source: 2109182-01			Prepared: 09/16/21 Analyzed: 09/17/21						
% Solids	88.4		%		88.2			0.166		20	

Batch BEJ0060 - General Preparation

Duplicate (BEJ0060-DUP1)		Source: 2109182-08			Prepared & Analyzed: 10/05/21						
% Solids	85.8		%		86.6			0.841		20	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BEI0351 - General Preparation

Blank (BEI0351-BLK1)

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEI0351-BS1)

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) 0.161 0.0100 mmhos/cm 0.150 107 90-110

Duplicate (BEI0351-DUP1)

Source: 2109173-01

Prepared: 09/16/21 Analyzed: 09/17/21

Specific Conductance (EC) 4.08 0.0100 mmhos/cm 4.08 0.00 20

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20
Project Number: RC# 425858729 Task # 247037
Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BEI0352 - General Preparation

LCS (BEI0352-BS1)

Prepared: 09/16/21 Analyzed: 09/17/21

pH	9.27		pH Units	9.21		101	95-105		
----	------	--	----------	------	--	-----	--------	--	--

Duplicate (BEI0352-DUP1)

Source: 2109173-01

Prepared: 09/16/21 Analyzed: 09/17/21

pH	8.31		pH Units		8.31			0.00	20
----	------	--	----------	--	------	--	--	------	----

Batch BEJ0073 - General Preparation

LCS (BEJ0073-BS1)

Prepared & Analyzed: 10/05/21

pH	9.06		pH Units	9.21		98.4	95-105		
----	------	--	----------	------	--	------	--------	--	--

Duplicate (BEJ0073-DUP1)

Source: 2109182-08

Prepared & Analyzed: 10/05/21

pH	7.70		pH Units		7.69			0.130	20
----	------	--	----------	--	------	--	--	-------	----

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - HSR Charlton 08-20

Project Number: RC# 425858729 Task # 247037

Project Manager: Jacob Whritenour

Reported:
10/08/21 12:57

Notes and Definitions

S-02	The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
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