



SITE NAME: Novacek C28-17							DATE: 6/6/2024	REM. PROJECT #: 34726	WEATHER: 80s, sunny	
SITE DIRECTIONS: CR 42 & 55, W 2000', S into							CLIENT: Noble			
LEGALS AND LAT/LONG: 40.29045243, -104.553478							TASMAN PERSONNEL: Elyse hossink			
SOIL TYPES: Poorly Graded Sand - SP							SURFACE GRADIENT: North			
SOIL SAMPLING							FACILITY INFRASTRUCTURE			
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT	Quantity	Photo?	
							Above Ground Storage Tank (AST)			
6/6/2024 11:53	FL01R-S @ 4'	0.5	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel			
6/6/2024 11:22	FL01R-W @ 4'	0.8	No Staining	No Odor	Yes	Lab	Separator			
							Emission Control Device (ECD)			
6/6/2024 11:31	BKG01 @ 4'	0.2	No Staining	No Odor	Yes	Lab	Dump Line			
							Wellhead			
							Flowline	1		
							Other:			
							Soil Loads Removed			
							IMPACTED SOIL IDENTIFIED?			
							ESTIMATED VOLUME OF IMPACTS:			
							Date	Number	CY	
							Total Removed	0	0	
							Disposal Facility:			
							Groundwater Recovery			
							DATE GW ENCOUNTERED:		DEPTH:	
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?			
							LNAPL OR SHEEN OBSERVED ON GW?			
GROUNDWATER SAMPLING							Date	BBLs		
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?				
							Total Removed	0		
							Disposal Facility:			



Site Area/AOC: Novacek C28-17 Client: Noble

Daily Forecast/Weather: 80s, sunny Personnel: Elyse Hossink

Task/Location Description: Flowline abandonment

Need photo log?





Equipment ID: FL01R-W		Equipment Type:		Equipment ID: FL01R-W		Equipment Type:	
Material:	Volume:	Contents:		Material:	Volume:	Contents:	
Notes/Conditions:				Notes/Conditions: Facing N			



Equipment ID: BKG01@3.5		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: facing S			



Equipment ID: FL01R-S		Equipment Type:	
Material:	Volume:	Contents:	
Notes/Conditions: Facing N			

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE - 100322
NOVACEK C28-17, WELD COUNTY, COLORADO
REM # 34726

Sample ID	Sample Date	Depth (ft.)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude/Longitude			
FL01R-S@4'	6/6/2024	4	40.290453	-104.553481	0.8	0.5
FL01R-W@4'	6/6/2024	4	40.287039	-104.551705	0.8	0.8
BKG01@4'	6/6/2024	4	40.286938	-104.551651	0.8	0.2

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

ft. = Feet

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE - 100322
NOVACEK C28-17, WELD COUNTY, COLORADO
REM # 34726

Sample ID	Sample Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4- Trimethyl- Benzene (mg/kg)	1,3,5- Trimethyl- Benzene (mg/kg)	Naphthalene (mg/kg)	TPH (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500	500**		
FL01R-S@4'	6/6/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01R-W@4'	6/6/2024	4	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
 2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
 3. * Indicates laboratory minimum detection limit in excess of SSL
 4. ** Summation of GRO+DRO+ORO must be less than 500 mg/kg
- ECMC = Energy & Carbon Management Commission
 (<) = Analytical result is less than the indicated laboratory reporting limit.
 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
 ft. = Feet
 bgs = Below ground surface

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE - 100322
NOVACEK C28-17, WELD COUNTY, COLORADO
REM # 34726

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01R-S@4'	6/6/2024	4'	<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
FL01R-W@4'	6/6/2024	4'	<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

Notes:

1. **Bold** values exceed the ECMC Table 915-1 limit(s)
 2. Pink & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
 3. * Indicates laboratory minimum detection limit in excess of SSL
- ECMC = Colorado Energy & Carbon Management Commission
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
bgs = Below ground surface
mg/kg = Milligrams per kilogram

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE - 100322
NOVACEK C28-17, WELD COUNTY, COLORADO
REM # 34726

Sample ID	Sample Date	Depth (ft. bgs)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01R-S@4'	6/6/2024	4	8.86	0.136	0.149	<2.00
FL01R-W@4'	6/6/2024	4	8.12	0.0767	0.0324	<2.00
BKG01@4'	6/6/2024	4	8.75	0.0691	0.175	<2.00
Maximum Background Concentration			8.75	-	-	-
Mean Background Concentration			8.75	-	-	-

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

ECMC = Colorado Energy & Carbon Management Commission

EC = Electrical conductivity

SAR = Sodium adsorption ratio

mmhos/cm = millimhos per centimeter

mg/L = milligram per liter

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

ft. = Feet

bgs = Below ground surface

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE - 100322
NOVACEK C28-17, WELD COUNTY, COLORADO
REM # 34726

Sample ID	Sample Date	Depth (ft)	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)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01R-S@4'	6/6/2024	4	3.24	51.1	<0.200	<0.30*	6.85	4.68	5.28	<0.260	<0.0200	21.6
FL01R-W@4'	6/6/2024	4	1.64	51.9	<0.200	<0.30*	4.15	4.84	4.31	<0.260	<0.0200	17.7
BKG01@4'	6/6/2024	4	1.75	53.6	<0.200	<0.30	4.27	3.81	4.54	<0.260	0.0200	18.5
Maximum Background Concentration			1.75	-	-	-	-	-	-	-	-	-
Maximum Background Concentration X 1.25			2.19	-	-	-	-	-	-	-	-	-
Mean Background Concentration			1.75	-	-	-	-	-	-	-	-	-
Mean Background Concentration X 1.25			2.19	-	-	-	-	-	-	-	-	-

Notes:

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) above native background concentrations.
3. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)
4. Compound falls within ECMC Table 915-1 Footnote 9.
5. Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

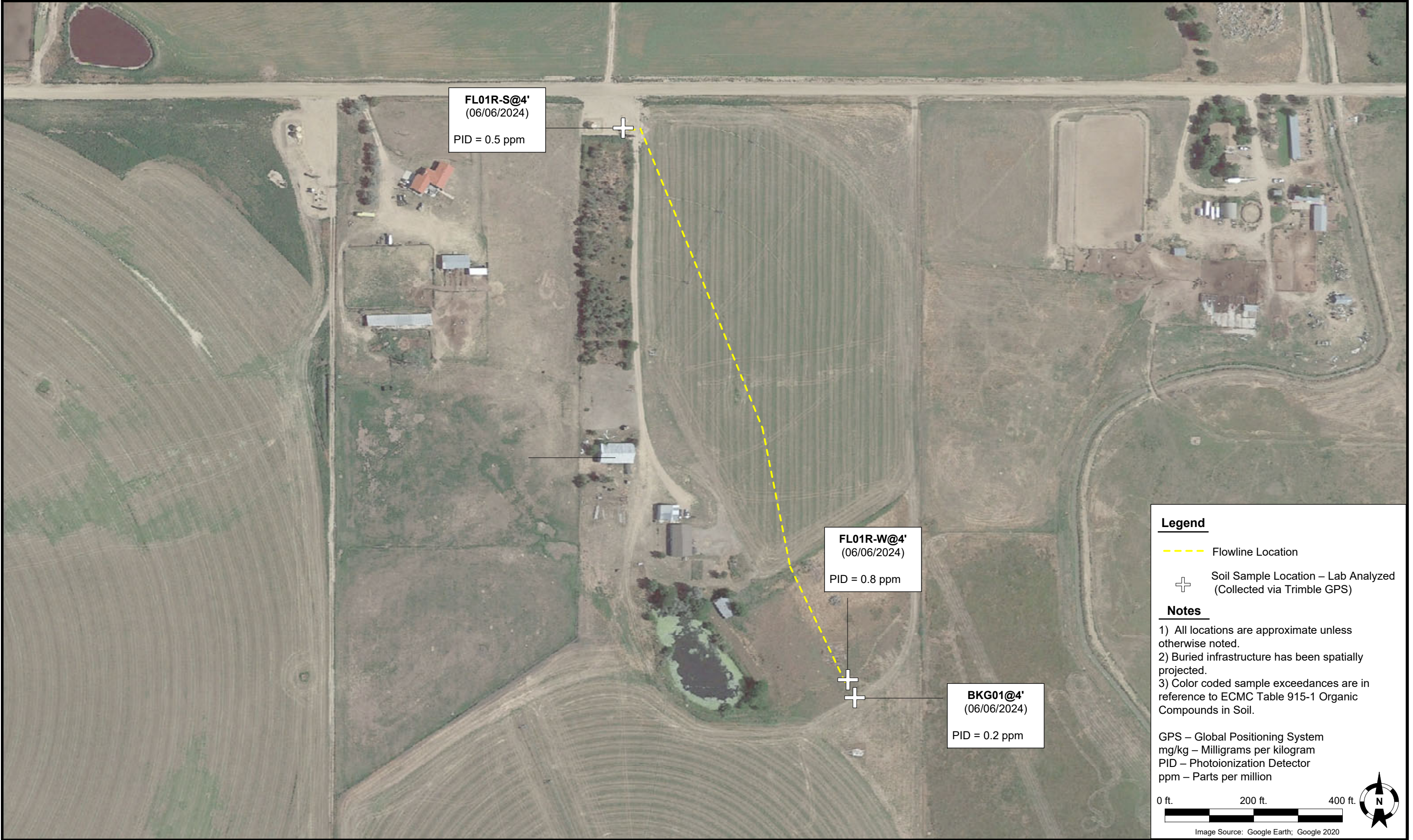
(<) = Analytical result is less than the indicated laboratory reporting limit.

mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

* Indicates laboratory minimum detection limit in excess of SSL



DATE:	07/29/2024
DESIGNED BY:	JW
DRAWN BY:	LM



TASMAN
Tasman, Inc.
6855 W 119th Avenue
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Novacek C28-17
NWNE, Section 28, Township 4 North, Range 64 West
Weld County, Colorado

Flowline Closure & Soil
Analytical Results Map
(06/06/2024)

FIGURE
1

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 24, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Novacek C28-17

Work Order #2406082

Enclosed are the results of analyses for samples received by Summit Scientific on 06/06/24 17:53. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is fluid and cursive, written in a professional style.

Natalie Tessier For Paul Shrewsbury
President



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

Project: Noble - Novacek C28-17

Project Number: UWRWE-A2709-ABN

Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01R-W@4'	2406082-01	Soil	06/06/24 11:22	06/06/24 17:53
FL01R-S@4'	2406082-02	Soil	06/06/24 11:53	06/06/24 17:53
BKG01@4'	2406082-03	Soil	06/06/24 11:33	06/06/24 17:53

SUMMIT SCIENTIFIC

4653 Table Mountain Drive
Golden, CO 80403
303-277-9310

Lab ID	Page 1 of 1
2406082	

Client: Noble / Tasman	Send Data To: Project Manager: Jake Whritenour	Send Invoice To: Company: Chevron
Address: 6855 W. 119th Ave	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location:
City/State/Zip: Broomfield, CO 80020	Project Name: Novacek C28-17	AFE#: UWRWE - A2709 - ASN
Phone: 231-292-2576	Project Number:	PO/Billing Codes:
Sampler Name: Elyse Hossink		Contact: Wade Firestein

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Other	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	VOC - 915	TPH - 915	PAH - 915	pH, EC, SAR	Boron - HWS	Metals - 915	HOLD	
1	FLØIR-W @4'	6/86/24	1122	3			X			X		X	X	X	X	X	X	X	pH, EC, SAR by saturated paste
2	FLØIR-S @4'	I	1153	3			X			X		X	X	X	X	X	X	X	
3	BK6ØL @4'	I	1153	2			X			X		X	X	X	X	X	X	X	
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: Elyse Hossink	Date/Time: 6/86/24 1700	Received by: Tasman Lock Box	Date/Time: 6/86/24 1700	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 6/86/24 1753	Received by: [Signature]	Date/Time: 6/86/24 1753	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 10.9	Corrected Temperature: 8	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2406082Client: Nade Tasman Client Project ID: Navacok C2847Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>NOTE</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
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 , etc.	<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.

AS
Custodian Printed Name

6/6/24
Date/Time



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

Project: Noble - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-W@4'
2406082-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHF0168	06/07/24	06/08/24	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: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0366	91.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0172	06/07/24	06/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.7	85.4 %	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-W@4'
2406082-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0277	06/11/24	06/11/24	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: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0208	62.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0176	06/07/24	06/11/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/06/24 11:22**

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-W@4'
2406082-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	1.64	0.200	mg/kg dry	1	BHF0198	06/07/24	06/12/24	EPA 6020B
Barium	51.9	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	4.15	0.400	"	"	"	"	"	"
Lead	4.84	0.200	"	"	"	"	"	"
Nickel	4.31	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	17.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0184	06/07/24	06/07/24	EPA 7196A	

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

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	11.2	0.0500	mg/L dry	1	BHF0305	06/11/24	06/13/24	EPA 6020B	
Magnesium	4.26	0.0500	"	"	"	"	"	"	
Sodium	0.502	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0324	0.00100	units	1	BHF0430	06/14/24	06/14/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-W@4'
2406082-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6		%	1	BHF0190	06/07/24	06/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0767	0.0100	mmhos/cm	1	BHF0306	06/11/24	06/12/24	EPA 120.1	

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

Date Sampled: **06/06/24 11:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BHF0307	06/11/24	06/12/24	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-S@4'
2406082-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHF0168	06/07/24	06/08/24	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: **06/06/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0419	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0412	103 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHF0172	06/07/24	06/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.7	85.9 %	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-S@4'
2406082-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHF0277	06/11/24	06/11/24	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: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0304	91.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0321	96.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHF0176	06/07/24	06/11/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **06/06/24 11:53**

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-S@4'
2406082-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.24	0.200	mg/kg dry	1	BHF0198	06/07/24	06/12/24	EPA 6020B
Barium	51.1	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	6.85	0.400	"	"	"	"	"	"
Lead	4.68	0.200	"	"	"	"	"	"
Nickel	5.28	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	21.6	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0184	06/07/24	06/07/24	EPA 7196A	

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

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	12.3	0.0500	mg/L dry	1	BHF0305	06/11/24	06/13/24	EPA 6020B	
Magnesium	2.79	0.0500	"	"	"	"	"	"	
Sodium	2.22	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.149	0.00100	units	1	BHF0430	06/14/24	06/14/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

FL01R-S@4'
2406082-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.9		%	1	BHF0190	06/07/24	06/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.136	0.0100	mmhos/cm	1	BHF0306	06/11/24	06/12/24	EPA 120.1	

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

Date Sampled: **06/06/24 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.86		pH Units	1	BHF0307	06/11/24	06/12/24	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

BKG01@4'
2406082-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.75	0.200	mg/kg dry	1	BHF0198	06/07/24	06/12/24	EPA 6020B	
Barium	53.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.27	0.400	"	"	"	"	"	"	
Lead	3.81	0.200	"	"	"	"	"	"	
Nickel	4.54	0.400	"	"	"	"	"	"	
Silver	0.0200	0.0200	"	"	"	"	"	"	
Zinc	18.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHF0184	06/07/24	06/07/24	EPA 7196A	

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

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	13.6	0.0500	mg/L dry	1	BHF0305	06/11/24	06/13/24	EPA 6020B	
Magnesium	5.48	0.0500	"	"	"	"	"	"	
Sodium	3.02	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.175	0.00100	units	1	BHF0430	06/14/24	06/14/24	Calculation	

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

BKG01@4'
2406082-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.7		%	1	BHF0190	06/07/24	06/07/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0691	0.0100	mmhos/cm	1	BHF0306	06/11/24	06/12/24	EPA 120.1	

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

Date Sampled: **06/06/24 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.75		pH Units	1	BHF0307	06/11/24	06/12/24	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0168 - EPA 5030 Soil MS

Blank (BHF0168-BLK1)

Prepared: 06/07/24 Analyzed: 06/08/24

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	0.0380		"	0.0400		95.0	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

LCS (BHF0168-BS1)

Prepared: 06/07/24 Analyzed: 06/08/24

Benzene	0.0866	0.0020	mg/kg	0.100		86.6	70-130			
Toluene	0.0960	0.0050	"	0.100		96.0	70-130			
Ethylbenzene	0.0971	0.0050	"	0.100		97.1	70-130			
m,p-Xylene	0.191	0.010	"	0.200		95.5	70-130			
o-Xylene	0.0973	0.0050	"	0.100		97.3	70-130			
1,2,4-Trimethylbenzene	0.0928	0.0050	"	0.100		92.8	70-130			
1,3,5-Trimethylbenzene	0.0939	0.0050	"	0.100		93.9	70-130			
Naphthalene	0.0721	0.0038	"	0.100		72.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0325		"	0.0400		81.2	50-150			
Surrogate: Toluene-d8	0.0400		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	50-150			

Matrix Spike (BHF0168-MS1)

Source: 2406061-01

Prepared: 06/07/24 Analyzed: 06/08/24

Benzene	0.0380	0.0020	mg/kg	0.100	ND	38.0	70-130			QM-07
Toluene	0.0493	0.0050	"	0.100	ND	49.3	70-130			QM-07
Ethylbenzene	0.0610	0.0050	"	0.100	ND	61.0	70-130			QM-07
m,p-Xylene	0.146	0.010	"	0.200	ND	73.0	70-130			
o-Xylene	0.0734	0.0050	"	0.100	ND	73.4	70-130			
1,2,4-Trimethylbenzene	0.0580	0.0050	"	0.100	ND	58.0	70-130			QM-07
1,3,5-Trimethylbenzene	0.0718	0.0050	"	0.100	ND	71.8	70-130			QM-07
Naphthalene	0.0268	0.0038	"	0.100	ND	26.8	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	50-150			
Surrogate: Toluene-d8	0.0416		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	50-150			

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0168 - EPA 5030 Soil MS

Matrix Spike Dup (BHF0168-MSD1)	Source: 2406061-01			Prepared: 06/07/24 Analyzed: 06/08/24						
Benzene	0.0464	0.0020	mg/kg	0.100	ND	46.4	70-130	19.9	30	QM-07
Toluene	0.0606	0.0050	"	0.100	ND	60.6	70-130	20.6	30	QM-07
Ethylbenzene	0.0731	0.0050	"	0.100	ND	73.1	70-130	18.1	30	
m,p-Xylene	0.173	0.010	"	0.200	ND	86.5	70-130	16.9	30	
o-Xylene	0.0847	0.0050	"	0.100	ND	84.7	70-130	14.4	30	
1,2,4-Trimethylbenzene	0.0719	0.0050	"	0.100	ND	71.9	70-130	21.4	30	QM-07
1,3,5-Trimethylbenzene	0.0816	0.0050	"	0.100	ND	81.6	70-130	12.8	30	
Naphthalene	0.0377	0.0038	"	0.100	ND	37.7	70-130	33.9	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0329		"	0.0400		82.2	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	50-150			

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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0172 - EPA 3550A

Blank (BHF0172-BLK1)

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	16.1		"	12.5		129	30-150			

LCS (BHF0172-BS1)

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	435	50	mg/kg	500		87.1	70-130			
Surrogate: o-Terphenyl	13.1		"	12.5		105	30-150			

Matrix Spike (BHF0172-MS1)

Source: 2406061-01

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	370	50	mg/kg	500	33.4	67.3	70-130			QM-07
Surrogate: o-Terphenyl	11.3		"	12.5		90.7	30-150			

Matrix Spike Dup (BHF0172-MSD1)

Source: 2406061-01

Prepared & Analyzed: 06/07/24

C10-C28 (DRO)	389	50	mg/kg	500	33.4	71.2	70-130	5.14	20	
Surrogate: o-Terphenyl	11.9		"	12.5		94.8	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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0277 - EPA 5030 Soil MS

Blank (BHF0277-BLK1)

Prepared & Analyzed: 06/11/24

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	0.0317		"	0.0333		95.1	40-150			
Surrogate: Fluoranthene-d10	0.0365		"	0.0333		110	40-150			

LCS (BHF0277-BS1)

Prepared & Analyzed: 06/11/24

Acenaphthene	0.0215	0.00500	mg/kg	0.0333		64.4	31-137			
Anthracene	0.0229	0.00500	"	0.0333		68.8	30-120			
Benzo (a) anthracene	0.0234	0.00500	"	0.0333		70.3	30-120			
Benzo (a) pyrene	0.0210	0.00500	"	0.0333		63.1	30-120			
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333		63.3	30-120			
Benzo (k) fluoranthene	0.0207	0.00500	"	0.0333		62.1	30-120			
Chrysene	0.0223	0.00500	"	0.0333		67.0	30-120			
Dibenz (a,h) anthracene	0.0191	0.00500	"	0.0333		57.2	30-120			
Fluoranthene	0.0229	0.00500	"	0.0333		68.6	30-120			
Fluorene	0.0218	0.00500	"	0.0333		65.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0204	0.00500	"	0.0333		61.3	30-120			
Pyrene	0.0256	0.00500	"	0.0333		76.9	35-142			
1-Methylnaphthalene	0.0213	0.00500	"	0.0333		64.0	35-142			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333		63.1	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.8	40-150			
Surrogate: Fluoranthene-d10	0.0251		"	0.0333		75.4	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHF0277 - EPA 5030 Soil MS

Matrix Spike (BHF0277-MS1)

Source: 2406082-01

Prepared & Analyzed: 06/11/24

Acenaphthene	0.0158	0.00500	mg/kg	0.0333	ND	47.4	31-137		
Anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120		
Benzo (a) anthracene	0.0171	0.00500	"	0.0333	ND	51.4	30-120		
Benzo (a) pyrene	0.0150	0.00500	"	0.0333	ND	45.1	30-120		
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	30-120		
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.4	30-120		
Chrysene	0.0164	0.00500	"	0.0333	ND	49.1	30-120		
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120		
Fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120		
Fluorene	0.0160	0.00500	"	0.0333	ND	48.1	30-120		
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	30-120		
Pyrene	0.0202	0.00500	"	0.0333	ND	60.5	35-142		
1-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	50.9	15-130		
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0175		"	0.0333		52.5	40-150		
Surrogate: Fluoranthene-d10	0.0166		"	0.0333		49.8	40-150		

Matrix Spike Dup (BHF0277-MSD1)

Source: 2406082-01

Prepared & Analyzed: 06/11/24

Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	55.0	31-137	14.8	30
Anthracene	0.0192	0.00500	"	0.0333	ND	57.5	30-120	14.7	30
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.0	30-120	8.48	30
Benzo (a) pyrene	0.0170	0.00500	"	0.0333	ND	51.0	30-120	12.3	30
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	10.3	30
Benzo (k) fluoranthene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	15.4	30
Chrysene	0.0182	0.00500	"	0.0333	ND	54.5	30-120	10.5	30
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	1.58	30
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	2.68	30
Fluorene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	13.6	30
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	0.109	30
Pyrene	0.0217	0.00500	"	0.0333	ND	65.2	35-142	7.49	30
1-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.3	15-130	12.0	50
2-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.7	15-130	17.6	50
Surrogate: 2-Methylnaphthalene-d10	0.0203		"	0.0333		60.8	40-150		
Surrogate: Fluoranthene-d10	0.0204		"	0.0333		61.3	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0176 - EPA 3050B

Blank (BHF0176-BLK1)

Prepared: 06/07/24 Analyzed: 06/11/24

Boron ND 2.00 mg/L

LCS (BHF0176-BS1)

Prepared: 06/07/24 Analyzed: 06/11/24

Boron 5.25 2.00 mg/L 5.00 105 80-120

Duplicate (BHF0176-DUP1)

Source: 2406061-01

Prepared: 06/07/24 Analyzed: 06/11/24

Boron 0.203 2.00 mg/L 0.226 10.5 20

Matrix Spike (BHF0176-MS1)

Source: 2406061-01

Prepared: 06/07/24 Analyzed: 06/11/24

Boron 5.13 2.00 mg/L 5.03 0.226 97.5 75-125

Matrix Spike Dup (BHF0176-MSD1)

Source: 2406061-01

Prepared: 06/07/24 Analyzed: 06/11/24

Boron 5.32 2.00 mg/L 5.03 0.226 101 75-125 3.59 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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0198 - EPA 3050B

Blank (BHF0198-BLK1)

Prepared: 06/07/24 Analyzed: 06/12/24

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	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

LCS (BHF0198-BS1)

Prepared: 06/07/24 Analyzed: 06/12/24

Arsenic	39.3	0.200	mg/kg wet	40.0	98.3	80-120
Barium	38.7	0.400	"	40.0	96.7	80-120
Cadmium	1.92	0.200	"	2.00	95.9	80-120
Copper	40.4	0.400	"	40.0	101	80-120
Lead	19.0	0.200	"	20.0	94.8	80-120
Nickel	39.3	0.400	"	40.0	98.2	80-120
Silver	1.93	0.0200	"	2.00	96.6	80-120
Zinc	39.1	0.400	"	40.0	97.7	80-120
Selenium	3.82	0.260	"	4.00	95.6	80-120

Duplicate (BHF0198-DUP1)

Source: 2404081-01

Prepared: 06/07/24 Analyzed: 06/12/24

Arsenic	8.44	0.200	mg/kg dry	8.79	4.09	20
Barium	35.0	0.400	"	29.7	16.6	20
Cadmium	0.320	0.200	"	0.323	0.778	20
Copper	19.8	0.400	"	21.1	6.37	20
Lead	15.4	0.200	"	14.3	7.34	20
Nickel	8.69	0.400	"	8.65	0.421	20
Silver	0.0518	0.0200	"	0.0555	6.94	20
Zinc	58.6	0.400	"	58.3	0.530	20
Selenium	0.492	0.260	"	0.484	1.64	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0198 - EPA 3050B

Matrix Spike (BHF0198-MS1)		Source: 2404081-01			Prepared: 06/07/24 Analyzed: 06/12/24					
Arsenic	47.2	0.200	mg/kg dry	46.7	8.79	82.2	75-125			
Barium	73.7	0.400	"	46.7	29.7	94.4	75-125			
Cadmium	2.51	0.200	"	2.34	0.323	93.6	75-125			
Copper	63.8	0.400	"	46.7	21.1	91.4	75-125			
Lead	31.7	0.200	"	23.4	14.3	74.4	75-125			QM-07
Nickel	54.0	0.400	"	46.7	8.65	97.0	75-125			
Silver	2.30	0.0200	"	2.34	0.0555	96.0	75-125			
Zinc	98.8	0.400	"	46.7	58.3	86.7	75-125			
Selenium	3.77	0.260	"	4.67	0.484	70.3	75-125			QM-07

Matrix Spike Dup (BHF0198-MSD1)		Source: 2404081-01			Prepared: 06/07/24 Analyzed: 06/12/24					
Arsenic	48.1	0.200	mg/kg dry	46.7	8.79	84.1	75-125	1.84	25	
Barium	73.1	0.400	"	46.7	29.7	92.9	75-125	0.934	25	
Cadmium	2.53	0.200	"	2.34	0.323	94.6	75-125	0.908	25	
Copper	64.7	0.400	"	46.7	21.1	93.4	75-125	1.40	25	
Lead	32.0	0.200	"	23.4	14.3	75.5	75-125	0.826	25	
Nickel	54.5	0.400	"	46.7	8.65	98.2	75-125	1.01	25	
Silver	2.29	0.0200	"	2.34	0.0555	95.8	75-125	0.265	25	
Zinc	100	0.400	"	46.7	58.3	90.1	75-125	1.61	25	
Selenium	3.68	0.260	"	4.67	0.484	68.4	75-125	2.40	25	QM-07

Post Spike (BHF0198-PS1)		Source: 2404081-01			Prepared: 06/07/24 Analyzed: 06/12/24					
Arsenic	126		ug/l	100	18.1	108	75-125			
Barium	158		"	100	61.0	97.2	75-125			
Cadmium	5.97		"	5.00	0.664	106	75-125			
Copper	151		"	100	43.4	108	75-125			
Lead	77.2		"	50.0	29.5	95.4	75-125			
Nickel	123		"	100	17.8	105	75-125			
Silver	5.37		"	5.00	0.114	105	75-125			
Zinc	226		"	100	120	106	75-125			
Selenium	10.3		"	10.0	0.996	93.2	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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0184 - 3060A Mod

Blank (BHF0184-BLK1)

Prepared & Analyzed: 06/07/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHF0184-BS1)

Prepared & Analyzed: 06/07/24

Chromium, Hexavalent 25.2 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHF0184-DUP1)

Source: 2406052-01

Prepared & Analyzed: 06/07/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHF0184-MS1)

Source: 2406052-01

Prepared & Analyzed: 06/07/24

Chromium, Hexavalent 25.8 0.30 mg/kg dry 25.9 ND 99.6 75-125

Matrix Spike Dup (BHF0184-MSD1)

Source: 2406052-01

Prepared & Analyzed: 06/07/24

Chromium, Hexavalent 27.6 0.30 mg/kg dry 25.4 ND 109 75-125 6.69 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 - Novacek C28-17

Project Number: UWRWE-A2709-ABN

Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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

Summit Scientific

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

Batch BHF0305 - General Preparation

Blank (BHF0305-BLK1)

Prepared: 06/11/24 Analyzed: 06/13/24

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

LCS (BHF0305-BS1)

Prepared: 06/11/24 Analyzed: 06/13/24

Calcium	5.62	0.0500	mg/L wet	5.00	112	70-130
Magnesium	5.53	0.0500	"	5.00	111	70-130
Sodium	5.43	0.0500	"	5.00	109	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 - Novacek C28-17

Project Number: UWRWE-A2709-ABN

Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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

Summit Scientific

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

Batch BHF0190 - General Preparation

Duplicate (BHF0190-DUP1)		Source: 2404081-01			Prepared & Analyzed: 06/07/24					
% Solids	82.5		%		82.3		0.152		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 - Novacek C28-17
Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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 BHF0306 - General Preparation

Blank (BHF0306-BLK1)

Prepared: 06/11/24 Analyzed: 06/12/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHF0306-BS1)

Prepared: 06/11/24 Analyzed: 06/12/24

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHF0306-DUP1)

Source: 2406082-01

Prepared: 06/11/24 Analyzed: 06/12/24

Specific Conductance (EC) 0.0767 0.0100 mmhos/cm 0.0767 0.0130 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 - Novacek C28-17

Project Number: UWRWE-A2709-ABN

Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

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

Summit Scientific

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

Batch BHF0307 - General Preparation

LCS (BHF0307-BS1)

Prepared: 06/11/24 Analyzed: 06/12/24

pH	9.17	pH Units	9.18	99.9	95-105
----	------	----------	------	------	--------

Duplicate (BHF0307-DUP1)

Source: 2406082-01

Prepared: 06/11/24 Analyzed: 06/12/24

pH	8.02	pH Units	8.12	1.24	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 - Novacek C28-17

Project Number: UWRWE-A2709-ABN
Project Manager: Jacob Whritenour

Reported:
06/24/24 07:53

Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference