



SITE NAME: Watkins 12-09 Tank Battery							DATE: 4/17/2024	REM. PROJECT #: 32623		WEATHER: Sunny's, 60s	
SITE DIRECTIONS: CR 61 & CR 46, N .45 mi, W into							CLIENT: Noble				
LEGALS AND LAT/LONG: 40.326455, -104.489826							TASMAN PERSONNEL: KS				
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		
							Above Ground Storage Tank (AST)		1		
4/17/2024 09:00	AST01@0.5'	0.0	No Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		1		
4/17/2024 09:16	MH01@0.5'	0.0	No Staining	No Odor	Yes	Grab	Separator		1		
4/17/2024 09:18	FLARE01@0.5'	0.1	No Staining	No Odor	Yes	Grab	Emission Control Device (ECD)		1		
4/17/2024 11:10	SEP01-FL@3'	2.7	HC Staining	Slight HC Odor	Yes	Lab	Dump Line		1		
4/17/2024 11:15	SEP01-DL@3'	0.8	HC Staining	Slight HC Odor	Yes	Lab	Wellhead		1		
4/17/2024 10:00	FS01@3'	0.1	No Staining	No Odor	Yes	Lab	Flowline		1		
4/17/2024 10:05	SS01@1.5'	0.4	No Staining	No Odor	Yes	Lab	Other:				
4/17/2024 10:10	SS02@1.5'	0.3	No Staining	No Odor	Yes	On-hold	Soil Loads Removed				
4/17/2024 10:15	SS03@1.5'	0.4	No Staining	No Odor	Yes	On-hold	IMPACTED SOIL IDENTIFIED?				
4/17/2024 10:20	SS04@1.5'	0.3	No Staining	No Odor	Yes	On-hold	ESTIMATED VOLUME OF IMPACTS:				
4/17/2024 11:20	AUTO01@0.5'	0.9	No Staining	No Odor	Yes	Grab	Date		Number	CY	
4/17/2024 11:30	BG01@0.5'	0.1	No Staining	No Odor	Yes	Lab					
4/17/2024 11:35	BG01@1.5'	0.2	No Staining	No Odor	Yes	Lab					
4/17/2024 11:40	BG01@3'	0.0	No Staining	No Odor	Yes	Lab					
							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:				

Need wellhead closure checklist?

Photographic Log



Equipment ID: AST01@0.5'

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions: EAST FACING



Equipment ID: MH01@0.5'

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions: EAST FACING

Photographic Log

							
Equipment ID: FLARE01@0.5'		Equipment Type:		Equipment ID: FS01@3'		Equipment Type:	
Material:		Volume:		Material:		Volume:	
Contents:				Contents:			
Notes/Conditions: EAST FACING				Notes/Conditions: NORTH FACING			

Photographic Log

					
Equipment ID: SS01@1.5'		Equipment Type:			
Material:	Volume:	Contents:		Material:	Volume:
Notes/Conditions: NORTH FACING			Notes/Conditions: EAST FACING		

Photographic Log

					
Equipment ID: SS03@1.5'		Equipment Type:		Equipment ID: SS04@1.5'	
Material:	Volume:	Contents:	Material:	Volume:	Contents:
Notes/Conditions: SOUTH FACING			Notes/Conditions: WEST FACING		

Photographic Log

					
Equipment ID: SEP01-FL@3'		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions: EAST FACING					
					
Equipment ID: SEP01-DL@3'		Equipment Type:			
Material:	Volume:	Contents:			
Notes/Conditions: EAST FACIG					

Photographic Log



Equipment ID: AUTO01@0.5'

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions: NORTH FACING



Equipment ID: BG01

Equipment Type:

Material:

Volume:

Contents:

Notes/Conditions: WEST FACING

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. (100322) - WATKINS 12-09

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
AST01@0.5'	04/17/24	0.0	No Staining	No Odor	Lab	40.326692	-104.489884	2.1
AUTO01@0.5'	04/17/24	0.9	No Staining	No Odor	Grab	40.326425	-104.489825	0.8
FLARE01@0.5'	04/17/24	0.1	No Staining	No Odor	Grab	40.326423	-104.489916	0.9
FS01@3'	04/17/24	0.1	No Staining	No Odor	Grab	40.326659	-104.489885	1.0
MH01@0.5'	04/17/24	0.0	No Staining	No Odor	Grab	40.326469	-104.489833	1.0
SEP01-DL@3'	04/17/24	0.8	HC Staining	Slight HC Odor	Lab	40.326467	-104.489854	1.0
SEP01-FL@3'	04/17/24	2.7	HC Staining	Slight HC Odor	Lab	40.326446	-104.489844	1.2
SS01@1.5'	04/17/24	0.4	No Staining	No Odor	Lab	40.326672	-104.489887	1.1
SS02@1.5'	04/17/24	0.3	No Staining	No Odor	Grab	40.326651	-104.489856	1.0
SS03@1.5'	04/17/24	0.4	No Staining	No Odor	Grab	40.326627	-104.489887	0.9
SS04@1.5'	04/17/24	0.3	No Staining	No Odor	Grab	40.326653	-104.489910	0.9
BG01@0.5'	04/17/24	0.1	No Staining	No Odor	Lab	40.326534	-104.489996	0.9
BG01@1.5'	04/17/24	0.2	No Staining	No Odor	Lab	40.326534	-104.489996	0.9
BG01@3'	04/17/24	0.0	No Staining	No Odor	Lab	40.326534	-104.489996	0.9

Notes:

PID = Photoionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 6 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. (100322) - WATKINS 12-09

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 ^{1,2}		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 ^{1,2,3}		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
AST01@0.5'	04/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<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
FS01@3'	04/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00508	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@3'	04/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<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
SEP01-FL@3'	04/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<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
SS01@1.5'	04/17/24	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<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)
SSR ^{1,2}		6 - 8.3	<6	<4mmhos/cm	2
AST01@0.5'	04/17/24	7.77	0.0640	0.149	<2.00
FS01@3'	04/17/24	8.64	0.0281	0.118	<2.00
SEP01-DL@3'	04/17/24	6.99	3.15	1.65	<2.00
SEP01-FL@3'	04/17/24	7.83	3.15	1.14	<2.00
SS01@1.5'	04/17/24	8.49	0.121	0.154	<2.00
BG01@0.5'	04/17/24	7.70	NA	NA	NA
BG01@1.5'	04/17/24	8.08	NA	NA	NA
BG01@3'	04/17/24	8.29	NA	NA	NA
Highest Background		8.29	-	-	-

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 ^{1,2}		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{1,2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
AST01@0.5'	04/17/24	3.41	99.9	0.361	<0.30	11.6	12.1	9.34	<0.260	0.0469	40.6
FS01@3'	04/17/24	3.19	125	0.365	<0.30	13.2	11.5	11.0	<0.260	0.0568	45.7
SEP01-DL@3'	04/17/24	3.33	112	0.406	<0.30	15.5	10.4	11.1	<0.260	0.0574	45.9
SEP01-FL@3'	04/17/24	2.88	104	0.376	<0.30	10.5	7.92	8.57	<0.260	0.0411	36.2
SS01@1.5'	04/17/24	4.27	128	0.386	<0.30	15.8	12.7	13.9	<0.260	0.0716	55.1
BG01@0.5'	04/17/24	4.25	136	0.481	<0.30	16.7	15.3	14.1	<0.260	0.0835	59.5
BG01@1.5'	04/17/24	3.74	135	0.406	<0.30	17.0	13.0	12.6	<0.260	0.0669	56.4
BG01@3'	04/17/24	3.47	132	0.454	<0.30	14.1	13.2	12.0	<0.260	0.0619	53.0
Mean Background Concentration		3.82	134	0.447							
Mean Background x1.25		4.78	168	0.559							
Highest Background		4.25	136	0.481							
Highest Background x1.25		5.31	170	0.601							

Notes:

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

2. Soil Screening Levels (SSL) and Soil Suitability for Reclamation (SSR) standards 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:

ECMC = Energy and Carbon Management 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 = Millimhos 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 ECMC Table 915-1 standard

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

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

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

Benzo(a) = Benzo(a)pyrene

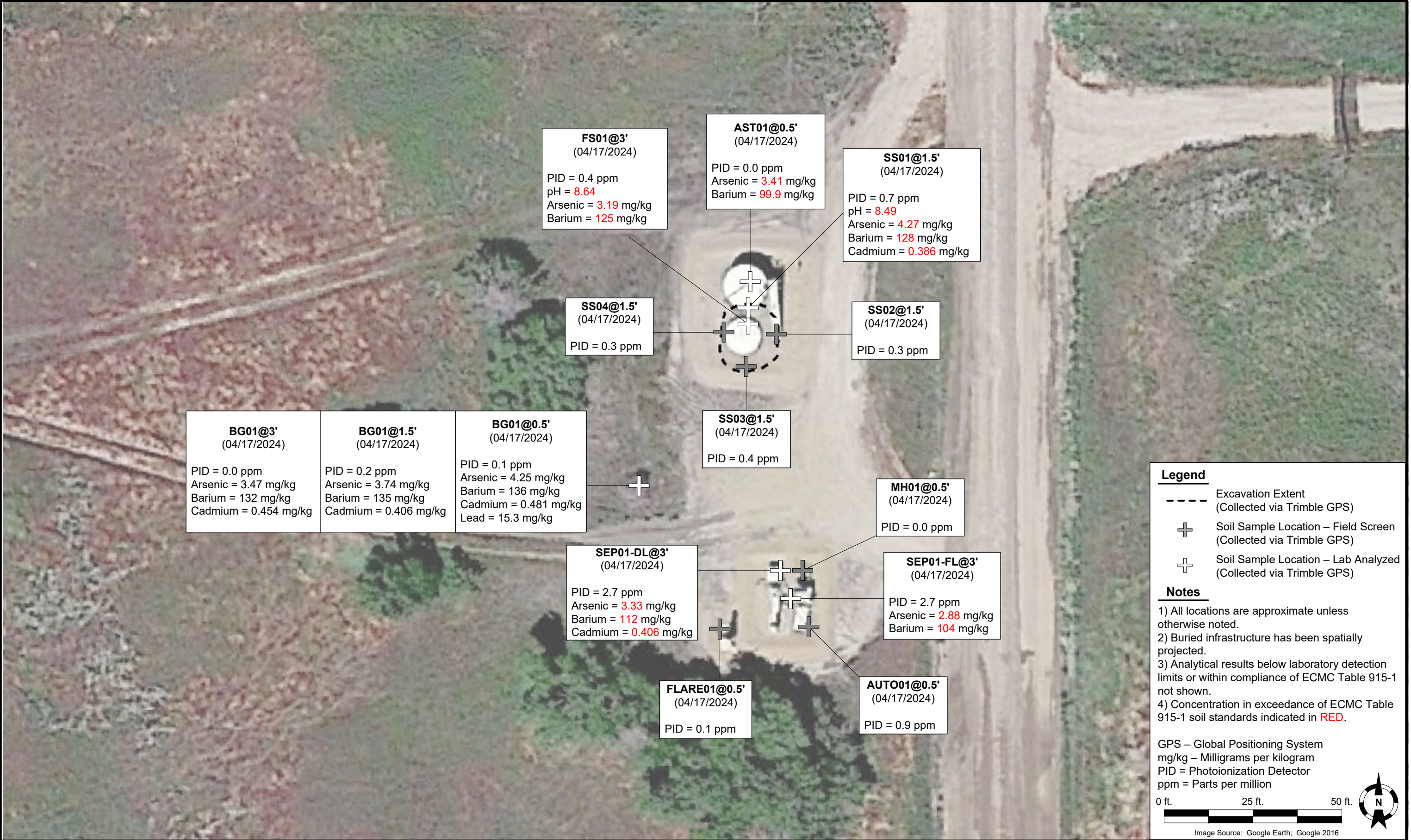
A,H = Dibenzo(a,h)anthracene

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

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene

NA = Not Analyzed



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 10, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

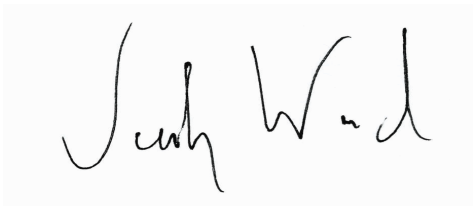
Broomfield, CO 80020

RE: Noble - Watkins 12-09 Tank Battery

Work Order #2404306

Enclosed are the results of analyses for samples received by Summit Scientific on 04/17/24 17:37. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
AST01@0.5'	2404306-01	Soil	04/17/24 09:00	04/17/24 17:37
SEP01-FL@3'	2404306-02	Soil	04/17/24 11:10	04/17/24 17:37
SEP01-DL@3'	2404306-03	Soil	04/17/24 11:15	04/17/24 17:37
FS01@3'	2404306-04	Soil	04/17/24 10:00	04/17/24 17:37
SS01@1.5'	2404306-05	Soil	04/17/24 10:05	04/17/24 17:37
BG01@0.5'	2404306-09	Soil	04/17/24 11:30	04/17/24 17:37
BG01@1.5'	2404306-10	Soil	04/17/24 11:35	04/17/24 17:37
BG01@3'	2404306-11	Soil	04/17/24 11:40	04/17/24 17:37

Case Narrative

Hunter Merlo requested pH be added to BG01@0.5', BG01@1.5', & BG01@3' on 5/6/2024.
This report includes those results.

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.

Client: Noble/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave.		Project Manager: Jake Whritenour		Company: Noble	
City/State/Zip: Broomfield/CO/ 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Watkins 12-09 Tank Battery	
Phone: 978-857-4408		Project Name: Watkins 12-09 Tank Battery		AFE#: WWRWE-A31053-ABN	
Sampler Name: Matthew Wentzel <i>Kathin Steinfart</i>		Project Number:		PO/Billing Codes:	
				Contact: Michael Barron	

					Preservative				Matrix				Analysis Requested								Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		
1	AST01 @ 0.5'	04-17-24	0900	3			X			X			X	X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	SEP01-FL @ 3'		1110	1			X			X											
3	SEP01-DL @ 3'		1115	1																	
4	ES01 @ 3'		1000	1																	
5	SS01 @ 1.5'		1005	1																	
6	SS02 @ 1.5'		1010	1																	
7	SS03 @ 1.5'		1015	1															X		
8	SS04 @ 1.5'		1020	1															X		
9	BG01 @ 0.5'		1130	2									X						X		
10	BG01 @ 1.5'		1135	1																	
11	BG01 @ 3'		1140	1																	
12																					
13																					
14																					
15																					

Relinquished by: <i>K. Steinfart</i>	Date/Time: 04-17-24 1421	Received by: Tasman Lock Box	Date/Time: 04-17-24 1421	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>Tasman Lock Box</i>	Date/Time: 4/17/24 1737	Received by: <i>[Signature]</i>	Date/Time: 4/17/24 1737	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 9.7	Corrected Temperature: 9.7	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2404306Client: Noble T. TomanClient Project ID: Watkins 12-09 Tank BatteryShipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #: _____

☐	☒	☐	☐	☐
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply)

Air

☐

Soil/Solid

☒

Water

☐

Other

☐Temp (°C) 9.7

Thermometer #

1

	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.	☒	☐	☐	
If custody seals are present, are they intact? ⁽¹⁾	☒	☐	☐	
Are samples due within 48 hours present?	☐	☒	☐	
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	☐	☒	☐	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	☒	☐	☐	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	☒	☐	☐	
Were all samples received intact? ⁽¹⁾	☒	☐	☐	
Was adequate sample volume provided? ⁽¹⁾	☒	☐	☐	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	☒	☐	☐	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	☒	☐	☐	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	☐	☐	☒	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	☐	☐	☒	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	☐	☐	☒	
If dissolved metals are requested, were samples field filtered?	☐	☐	☒	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

SN
Custodian Printed Name

4-17-24
Date/Time

4/17/24



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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

AST01@0.5'
2404306-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHD0631	04/18/24	04/20/24	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: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0543	136 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0635	04/18/24	04/21/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.56	68.5 %	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 - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

AST01@0.5'
2404306-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthylene	ND	0.330	mg/kg	1	BHD0591	04/18/24	04/19/24	EPA 8270D SIM	
Acenaphthene	ND	0.00500	"	"	"	"	"	"	
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: **04/17/24 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0165	49.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0144	43.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0747	04/22/24	05/02/24	EPA 6020B	

Total Metals by EPA 6020B

Summit Scientific

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

AST01@0.5'
2404306-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.41	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	99.9	0.400	"	"	"	"	"	"	
Cadmium	0.361	0.200	"	"	"	"	"	"	
Copper	11.6	0.400	"	"	"	"	"	"	
Lead	12.1	0.200	"	"	"	"	"	"	
Nickel	9.34	0.400	"	"	"	"	"	"	
Silver	0.0469	0.0200	"	"	"	"	"	"	
Zinc	40.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

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

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	123	0.0500	mg/L dry	1	BHE0042	05/01/24	05/03/24	EPA 6020B	
Magnesium	53.5	0.0500	"	"	"	"	"	"	
Sodium	3.38	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.0640	0.00100	units	1	BHE0137	05/04/24	05/04/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

AST01@0.5'
2404306-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	79.9			%	1	BHD0770	04/22/24	04/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.149	0.0100		mmhos/cm	1	BHE0043	05/01/24	05/02/24	EPA 120.1	

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

Date Sampled: **04/17/24 09:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.77			pH Units	1	BHE0044	05/01/24	05/02/24	EPA 9045D	

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-FL@3'
2404306-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0631	04/18/24	04/20/24	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: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0622	156 %	50-150		"	"	"	"	S-07
Surrogate: Toluene-d8	0.0383	95.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0635	04/18/24	04/21/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.82	62.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-FL@3'
2404306-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthylene	ND	0.330	mg/kg	1	BHD0591	04/18/24	04/19/24	EPA 8270D SIM	
Acenaphthene	ND	0.00500	"	"	"	"	"	"	
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: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0137	41.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0162	48.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0747	04/22/24	05/02/24	EPA 6020B	

Total Metals by EPA 6020B

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-FL@3'
2404306-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.88	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	104	0.400	"	"	"	"	"	"	
Cadmium	0.376	0.200	"	"	"	"	"	"	
Copper	10.5	0.400	"	"	"	"	"	"	
Lead	7.92	0.200	"	"	"	"	"	"	
Nickel	8.57	0.400	"	"	"	"	"	"	
Silver	0.0411	0.0200	"	"	"	"	"	"	
Zinc	36.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

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

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	74.0	0.0500	mg/L dry	1	BHE0042	05/01/24	05/03/24	EPA 6020B	
Magnesium	30.9	0.0500	"	"	"	"	"	"	
Sodium	128	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	3.15	0.00100	units	1	BHE0137	05/04/24	05/04/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-FL@3'
2404306-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.1		%	1	BHD0770	04/22/24	04/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.14	0.0100	mmhos/cm	1	BHE0043	05/01/24	05/02/24	EPA 120.1	

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

Date Sampled: **04/17/24 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83		pH Units	1	BHE0044	05/01/24	05/02/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-DL@3'
2404306-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0631	04/18/24	04/20/24	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: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0572	143 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.5 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0635	04/18/24	04/21/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.51	68.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-DL@3'
2404306-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthylene	ND	0.330	mg/kg	1	BHD0591	04/18/24	04/19/24	EPA 8270D SIM	
Acenaphthene	ND	0.00500	"	"	"	"	"	"	
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: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0133	40.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0135	40.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0747	04/22/24	05/02/24	EPA 6020B	

Total Metals by EPA 6020B

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-DL@3'
2404306-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.33	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	112	0.400	"	"	"	"	"	"	
Cadmium	0.406	0.200	"	"	"	"	"	"	
Copper	15.5	0.400	"	"	"	"	"	"	
Lead	10.4	0.200	"	"	"	"	"	"	
Nickel	11.1	0.400	"	"	"	"	"	"	
Silver	0.0574	0.0200	"	"	"	"	"	"	
Zinc	45.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

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

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	137	0.0500	mg/L dry	1	BHE0042	05/01/24	05/03/24	EPA 6020B	
Magnesium	67.0	0.0500	"	"	"	"	"	"	
Sodium	180	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	3.15	0.00100	units	1	BHE0137	05/04/24	05/04/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SEP01-DL@3'
2404306-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.8		%	1	BHD0770	04/22/24	04/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.65	0.0100	mmhos/cm	1	BHE0043	05/01/24	05/02/24	EPA 120.1	

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

Date Sampled: **04/17/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.99		pH Units	1	BHE0044	05/01/24	05/02/24	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

FS01@3'
2404306-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0631	04/18/24	04/20/24	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: **04/17/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0458	115 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.1 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0391	97.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0635	04/18/24	04/21/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.19	73.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

FS01@3'
2404306-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthylene	ND	0.330	mg/kg	1	BHD0591	04/18/24	04/19/24	EPA 8270D SIM	
Acenaphthene	ND	0.00500	"	"	"	"	"	"	
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	0.00508	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: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0139	41.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0143	43.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0747	04/22/24	05/02/24	EPA 6020B	

Total Metals by EPA 6020B

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

FS01@3'
2404306-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: 04/17/24 10:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.19	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	125	0.400	"	"	"	"	"	"	
Cadmium	0.365	0.200	"	"	"	"	"	"	
Copper	13.2	0.400	"	"	"	"	"	"	
Lead	11.5	0.200	"	"	"	"	"	"	
Nickel	11.0	0.400	"	"	"	"	"	"	
Silver	0.0568	0.0200	"	"	"	"	"	"	
Zinc	45.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 04/17/24 10:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

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

Date Sampled: 04/17/24 10:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	54.3	0.0500	mg/L dry	1	BHE0042	05/01/24	05/03/24	EPA 6020B	
Magnesium	12.5	0.0500	"	"	"	"	"	"	
Sodium	0.884	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 04/17/24 10:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0281	0.00100	units	1	BHE0137	05/04/24	05/04/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

FS01@3'
2404306-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.6		%	1	BHD0770	04/22/24	04/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.118	0.0100	mmhos/cm	1	BHE0043	05/01/24	05/02/24	EPA 120.1	

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

Date Sampled: **04/17/24 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.64		pH Units	1	BHE0044	05/01/24	05/02/24	EPA 9045D	

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SS01@1.5'
2404306-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0631	04/18/24	04/20/24	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: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0501	125 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0361	90.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0635	04/18/24	04/21/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.54	76.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
05/10/24 14:06

SS01@1.5'
2404306-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthylene	ND	0.330	mg/kg	1	BHD0591	04/18/24	04/19/24	EPA 8270D SIM	
Acenaphthene	ND	0.00500	"	"	"	"	"	"	
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: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0146	43.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0747	04/22/24	05/02/24	EPA 6020B	

Total Metals by EPA 6020B

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Reported:
05/10/24 14:06

SS01@1.5'
2404306-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.27	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	128	0.400	"	"	"	"	"	"	
Cadmium	0.386	0.200	"	"	"	"	"	"	
Copper	15.8	0.400	"	"	"	"	"	"	
Lead	12.7	0.200	"	"	"	"	"	"	
Nickel	13.9	0.400	"	"	"	"	"	"	
Silver	0.0716	0.0200	"	"	"	"	"	"	
Zinc	55.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

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

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	29.1	0.0500	mg/L dry	1	BHE0042	05/01/24	05/03/24	EPA 6020B	
Magnesium	9.72	0.0500	"	"	"	"	"	"	
Sodium	2.94	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.121	0.00100	units	1	BHE0137	05/04/24	05/04/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

SS01@1.5'
2404306-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.0		%	1	BHD0770	04/22/24	04/22/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.154	0.0100	mmhos/cm	1	BHE0043	05/01/24	05/02/24	EPA 120.1	

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

Date Sampled: **04/17/24 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.49		pH Units	1	BHE0044	05/01/24	05/02/24	EPA 9045D	

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

BG01@0.5'
2404306-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	4.25	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	136	0.400	"	"	"	"	"	"	
Cadmium	0.481	0.200	"	"	"	"	"	"	
Copper	16.7	0.400	"	"	"	"	"	"	
Lead	15.3	0.200	"	"	"	"	"	"	
Nickel	14.1	0.400	"	"	"	"	"	"	
Silver	0.0835	0.0200	"	"	"	"	"	"	
Zinc	59.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	82.9		%	1	BHD0770	04/22/24	04/22/24	Calculation	

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

Date Sampled: **04/17/24 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.70		pH Units	1	BHE0259	05/08/24	05/08/24	EPA 9045D	

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

BG01@1.5'
2404306-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.74	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	135	0.400	"	"	"	"	"	"	
Cadmium	0.406	0.200	"	"	"	"	"	"	
Copper	17.0	0.400	"	"	"	"	"	"	
Lead	13.0	0.200	"	"	"	"	"	"	
Nickel	12.6	0.400	"	"	"	"	"	"	
Silver	0.0669	0.0200	"	"	"	"	"	"	
Zinc	56.4	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.8		%	1	BHD0770	04/22/24	04/22/24	Calculation	

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

Date Sampled: **04/17/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.08		pH Units	1	BHE0259	05/08/24	05/08/24	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

BG01@3'
2404306-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **04/17/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.47	0.200	mg/kg dry	1	BHD1034	04/29/24	05/02/24	EPA 6020B	
Barium	132	0.400	"	"	"	"	"	"	
Cadmium	0.454	0.200	"	"	"	"	"	"	
Copper	14.1	0.400	"	"	"	"	"	"	
Lead	13.2	0.200	"	"	"	"	"	"	
Nickel	12.0	0.400	"	"	"	"	"	"	
Silver	0.0619	0.0200	"	"	"	"	"	"	
Zinc	53.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **04/17/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0872	04/24/24	04/24/24	EPA 7196A	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/17/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.6		%	1	BHD0770	04/22/24	04/22/24	Calculation	

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

Date Sampled: **04/17/24 11:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.29		pH Units	1	BHE0259	05/08/24	05/08/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD0631 - EPA 5030 Soil MS

Blank (BHD0631-BLK1)

Prepared: 04/18/24 Analyzed: 04/20/24

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	0.0493		"	0.0400		123	50-150			
Surrogate: Toluene-d8	0.0360		"	0.0400		90.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

LCS (BHD0631-BS1)

Prepared: 04/18/24 Analyzed: 04/20/24

Benzene	0.0856	0.0020	mg/kg	0.100		85.6	70-130			
Toluene	0.0921	0.0050	"	0.100		92.1	70-130			
Ethylbenzene	0.0976	0.0050	"	0.100		97.6	70-130			
m,p-Xylene	0.183	0.010	"	0.200		91.3	70-130			
o-Xylene	0.0922	0.0050	"	0.100		92.2	70-130			
1,2,4-Trimethylbenzene	0.0898	0.0050	"	0.100		89.8	70-130			
1,3,5-Trimethylbenzene	0.0915	0.0050	"	0.100		91.5	70-130			
Naphthalene	0.0926	0.0038	"	0.100		92.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0533		"	0.0400		133	50-150			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

Matrix Spike (BHD0631-MS1)

Source: 2404290-01

Prepared: 04/18/24 Analyzed: 04/20/24

Benzene	0.0840	0.0020	mg/kg	0.100	ND	84.0	70-130			
Toluene	0.0960	0.0050	"	0.100	ND	96.0	70-130			
Ethylbenzene	0.0989	0.0050	"	0.100	ND	98.9	70-130			
m,p-Xylene	0.180	0.010	"	0.200	ND	90.1	70-130			
o-Xylene	0.0883	0.0050	"	0.100	ND	88.3	70-130			
1,2,4-Trimethylbenzene	0.0883	0.0050	"	0.100	ND	88.3	70-130			
1,3,5-Trimethylbenzene	0.0921	0.0050	"	0.100	ND	92.1	70-130			
Naphthalene	0.0917	0.0038	"	0.100	ND	91.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0512		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0376		"	0.0400		94.0	50-150			

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD0631 - EPA 5030 Soil MS

Matrix Spike Dup (BHD0631-MSD1)	Source: 2404290-01			Prepared: 04/18/24 Analyzed: 04/20/24						
Benzene	0.0912	0.0020	mg/kg	0.100	ND	91.2	70-130	8.25	30	
Toluene	0.0733	0.0050	"	0.100	ND	73.3	70-130	26.8	30	
Ethylbenzene	0.0950	0.0050	"	0.100	ND	95.0	70-130	3.99	30	
m,p-Xylene	0.177	0.010	"	0.200	ND	88.3	70-130	2.03	30	
o-Xylene	0.0863	0.0050	"	0.100	ND	86.3	70-130	2.30	30	
1,2,4-Trimethylbenzene	0.0867	0.0050	"	0.100	ND	86.7	70-130	1.78	30	
1,3,5-Trimethylbenzene	0.0891	0.0050	"	0.100	ND	89.1	70-130	3.34	30	
Naphthalene	0.0975	0.0038	"	0.100	ND	97.5	70-130	6.15	30	
Surrogate: 1,2-Dichloroethane-d4	0.0561		"	0.0400		140	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0388		"	0.0400		97.1	50-150			

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Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD0635 - EPA 3550A

Blank (BHD0635-BLK1)

Prepared: 04/18/24 Analyzed: 04/20/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.3		"	12.5		98.0	30-150			

LCS (BHD0635-BS1)

Prepared: 04/18/24 Analyzed: 04/20/24

C10-C28 (DRO)	434	50	mg/kg	500		86.8	70-130			
Surrogate: o-Terphenyl	13.5		"	12.5		108	30-150			

Matrix Spike (BHD0635-MS1)

Source: 2404290-01

Prepared: 04/18/24 Analyzed: 04/20/24

C10-C28 (DRO)	417	50	mg/kg	500	15.1	80.3	70-130			
Surrogate: o-Terphenyl	10.5		"	12.5		83.8	30-150			

Matrix Spike Dup (BHD0635-MSD1)

Source: 2404290-01

Prepared: 04/18/24 Analyzed: 04/20/24

C10-C28 (DRO)	411	50	mg/kg	500	15.1	79.2	70-130	1.44	20	
Surrogate: o-Terphenyl	11.2		"	12.5		89.5	30-150			

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Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHD0591 - EPA 5030 Soil MS

Blank (BHD0591-BLK1)

Prepared & Analyzed: 04/18/24

Acenaphthylene	ND	0.330	mg/kg								
Acenaphthene	ND	0.00500	"								
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	0.0244		"	0.0333		73.3		40-150			
Surrogate: Fluoranthene-d10	0.0191		"	0.0333		57.4		40-150			

LCS (BHD0591-BS1)

Prepared & Analyzed: 04/18/24

Acenaphthylene	0.0304	0.330	mg/kg	0.0333		91.3		30-120			
Acenaphthene	0.0303	0.00500	"	0.0333		91.0		31-137			
Anthracene	0.0320	0.00500	"	0.0333		95.9		30-120			
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.6		30-120			
Benzo (a) pyrene	0.0246	0.00500	"	0.0333		73.7		30-120			
Benzo (b) fluoranthene	0.0274	0.00500	"	0.0333		82.3		30-120			
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333		89.6		30-120			
Chrysene	0.0304	0.00500	"	0.0333		91.3		30-120			
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333		50.8		30-120			
Fluoranthene	0.0309	0.00500	"	0.0333		92.8		30-120			
Fluorene	0.0245	0.00500	"	0.0333		73.5		30-120			
Indeno (1,2,3-cd) pyrene	0.0203	0.00500	"	0.0333		61.0		30-120			
Pyrene	0.0308	0.00500	"	0.0333		92.5		35-142			
1-Methylnaphthalene	0.0291	0.00500	"	0.0333		87.4		35-142			
2-Methylnaphthalene	0.0291	0.00500	"	0.0333		87.2		35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0264		"	0.0333		79.2		40-150			
Surrogate: Fluoranthene-d10	0.0229		"	0.0333		68.6		40-150			

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHD0591 - EPA 5030 Soil MS

Matrix Spike (BHD0591-MS1)

Source: 2404262-01

Prepared & Analyzed: 04/18/24

Acenaphthylene	0.0182	0.330	mg/kg	0.0333	ND	54.5	15-130		
Acenaphthene	0.0176	0.00500	"	0.0333	ND	52.7	31-137		
Anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120		
Benzo (a) anthracene	0.0180	0.00500	"	0.0333	ND	54.1	30-120		
Benzo (a) pyrene	0.0145	0.00500	"	0.0333	ND	43.4	30-120		
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	30-120		
Benzo (k) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.4	30-120		
Chrysene	0.0174	0.00500	"	0.0333	ND	52.3	30-120		
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120		
Fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120		
Fluorene	0.0167	0.00500	"	0.0333	ND	50.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0176	0.00500	"	0.0333	ND	52.8	30-120		
Pyrene	0.0183	0.00500	"	0.0333	ND	54.9	35-142		
1-Methylnaphthalene	0.0176	0.00500	"	0.0333	ND	52.9	15-130		
2-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.3	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0168		"	0.0333		50.5	40-150		
Surrogate: Fluoranthene-d10	0.0146		"	0.0333		43.9	40-150		

Matrix Spike Dup (BHD0591-MSD1)

Source: 2404262-01

Prepared & Analyzed: 04/18/24

Acenaphthylene	0.0171	0.330	mg/kg	0.0333	ND	51.4	15-130	5.88	50
Acenaphthene	0.0170	0.00500	"	0.0333	ND	50.9	31-137	3.39	30
Anthracene	0.0177	0.00500	"	0.0333	ND	53.2	30-120	4.52	30
Benzo (a) anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	0.290	30
Benzo (a) pyrene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	0.717	30
Benzo (b) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	1.86	30
Benzo (k) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	3.62	30
Chrysene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	2.17	30
Dibenz (a,h) anthracene	0.0187	0.00500	"	0.0333	ND	56.0	30-120	30.0	30
Fluoranthene	0.0186	0.00500	"	0.0333	ND	55.8	30-120	2.49	30
Fluorene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	4.94	30
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	1.74	30
Pyrene	0.0177	0.00500	"	0.0333	ND	53.0	35-142	3.56	30
1-Methylnaphthalene	0.0181	0.00500	"	0.0333	ND	54.4	15-130	2.91	50
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130	1.82	50
Surrogate: 2-Methylnaphthalene-d10	0.0156		"	0.0333		46.7	40-150		
Surrogate: Fluoranthene-d10	0.0145		"	0.0333		43.4	40-150		

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD0747 - EPA 3050B

Blank (BHD0747-BLK1)

Prepared: 04/22/24 Analyzed: 05/02/24

Boron ND 2.00 mg/L

LCS (BHD0747-BS1)

Prepared: 04/22/24 Analyzed: 05/02/24

Boron 4.88 2.00 mg/L 5.00 97.6 80-120

Duplicate (BHD0747-DUP1)

Source: 2402319-01RE1

Prepared: 04/22/24 Analyzed: 05/02/24

Boron 2.65 2.00 mg/L 2.58 2.72 20

Matrix Spike (BHD0747-MS1)

Source: 2402319-01RE1

Prepared: 04/22/24 Analyzed: 05/02/24

Boron 7.81 2.00 mg/L 5.05 2.58 104 75-125

Matrix Spike Dup (BHD0747-MSD1)

Source: 2402319-01RE1

Prepared: 04/22/24 Analyzed: 05/02/24

Boron 7.56 2.00 mg/L 5.05 2.58 98.8 75-125 3.29 25

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Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD1034 - EPA 3050B

Blank (BHD1034-BLK1)

Prepared: 04/29/24 Analyzed: 05/02/24

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 (BHD1034-BS1)

Prepared: 04/29/24 Analyzed: 05/02/24

Arsenic	39.7	0.200	mg/kg wet	40.0	99.3	80-120
Barium	41.5	0.400	"	40.0	104	80-120
Cadmium	1.99	0.200	"	2.00	99.7	80-120
Copper	39.0	0.400	"	40.0	97.5	80-120
Lead	19.8	0.200	"	20.0	99.0	80-120
Nickel	38.8	0.400	"	40.0	97.0	80-120
Silver	1.96	0.0200	"	2.00	98.2	80-120
Zinc	39.0	0.400	"	40.0	97.4	80-120
Selenium	3.98	0.260	"	4.00	99.6	80-120

Duplicate (BHD1034-DUP1)

Source: 2403148-01RE1

Prepared: 04/29/24 Analyzed: 05/02/24

Arsenic	1.39	0.200	mg/kg wet	1.39	0.660	20
Barium	84.4	0.400	"	73.0	14.5	20
Cadmium	0.205	0.200	"	0.204	0.584	20
Copper	5.57	0.400	"	5.59	0.361	20
Lead	16.9	0.200	"	14.4	15.9	20
Nickel	3.82	0.400	"	3.87	1.27	20
Silver	0.0223	0.0200	"	0.0205	8.52	20
Zinc	41.3	0.400	"	41.6	0.962	20
Selenium	ND	0.260	"	ND		20

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Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD1034 - EPA 3050B

Matrix Spike (BHD1034-MS1)		Source: 2403148-01RE1			Prepared: 04/29/24		Analyzed: 05/02/24			
Arsenic	39.6	0.200	mg/kg wet	37.6	1.39	102	75-125			
Barium	118	0.400	"	37.6	73.0	121	75-125			
Cadmium	2.13	0.200	"	1.88	0.204	102	75-125			
Copper	43.5	0.400	"	37.6	5.59	101	75-125			
Lead	39.4	0.200	"	18.8	14.4	133	75-125			QM-07
Nickel	41.8	0.400	"	37.6	3.87	101	75-125			
Silver	1.87	0.0200	"	1.88	0.0205	98.4	75-125			
Zinc	79.5	0.400	"	37.6	41.6	101	75-125			
Selenium	3.29	0.260	"	3.76	ND	87.5	75-125			

Matrix Spike Dup (BHD1034-MSD1)		Source: 2403148-01RE1			Prepared: 04/29/24		Analyzed: 05/02/24			
Arsenic	39.3	0.200	mg/kg wet	37.6	1.39	101	75-125	0.780	25	
Barium	115	0.400	"	37.6	73.0	112	75-125	2.87	25	
Cadmium	2.11	0.200	"	1.88	0.204	101	75-125	0.923	25	
Copper	42.9	0.400	"	37.6	5.59	99.3	75-125	1.39	25	
Lead	38.3	0.200	"	18.8	14.4	127	75-125	2.79	25	QM-07
Nickel	41.4	0.400	"	37.6	3.87	99.8	75-125	0.936	25	
Silver	1.85	0.0200	"	1.88	0.0205	97.1	75-125	1.36	25	
Zinc	79.1	0.400	"	37.6	41.6	99.6	75-125	0.550	25	
Selenium	3.29	0.260	"	3.76	ND	87.6	75-125	0.103	25	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHD0872 - 3060A Mod

Blank (BHD0872-BLK1)

Prepared & Analyzed: 04/24/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHD0872-BS1)

Prepared & Analyzed: 04/24/24

Chromium, Hexavalent 25.5 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BHD0872-DUP1)

Source: 2404290-01

Prepared & Analyzed: 04/24/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHD0872-MS1)

Source: 2404290-01

Prepared & Analyzed: 04/24/24

Chromium, Hexavalent 28.4 0.30 mg/kg dry 30.2 ND 94.0 75-125

Matrix Spike Dup (BHD0872-MSD1)

Source: 2404290-01

Prepared & Analyzed: 04/24/24

Chromium, Hexavalent 28.4 0.30 mg/kg dry 30.2 ND 93.8 75-125 0.213 20

Summit Scientific

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHE0042 - General Preparation

Blank (BHE0042-BLK1)

Prepared: 05/01/24 Analyzed: 05/03/24

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

LCS (BHE0042-BS1)

Prepared: 05/01/24 Analyzed: 05/03/24

Calcium	4.88	0.0500	mg/L wet	5.00	97.6	70-130
Magnesium	4.86	0.0500	"	5.00	97.2	70-130
Sodium	4.96	0.0500	"	5.00	99.2	70-130

Summit Scientific

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Project: Noble - Watkins 12-09 Tank Battery

Project Number: UWRWE-A3653-ABN

Project Manager: Jacob Whritenour

Reported:

05/10/24 14:06

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 BHD0770 - General Preparation

Duplicate (BHD0770-DUP1)		Source: 2404298-01			Prepared & Analyzed: 04/22/24					
% Solids	77.6		%		77.1		0.610		20	

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHE0043 - General Preparation

Blank (BHE0043-BLK1)

Prepared: 05/01/24 Analyzed: 05/02/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHE0043-BS1)

Prepared: 05/01/24 Analyzed: 05/02/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHE0043-DUP1)

Source: 2404306-01

Prepared: 05/01/24 Analyzed: 05/02/24

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.149 1.42 20

Summit Scientific

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

Project: Noble - Watkins 12-09 Tank Battery
Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

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 BHE0044 - General Preparation

LCS (BHE0044-BS1)

Prepared: 05/01/24 Analyzed: 05/02/24

pH	9.08		pH Units	9.18		98.9	95-105		
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Duplicate (BHE0044-DUP1)

Source: 2404306-01

Prepared: 05/01/24 Analyzed: 05/02/24

pH	7.81		pH Units		7.77			0.513	20
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Batch BHE0259 - General Preparation

LCS (BHE0259-BS1)

Prepared & Analyzed: 05/08/24

pH	9.24		pH Units	9.18		101	95-105		
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Duplicate (BHE0259-DUP1)

Source: 2404306-09

Prepared & Analyzed: 05/08/24

pH	7.64		pH Units		7.70			0.782	20
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Summit Scientific

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

Project: Noble - Watkins 12-09 Tank Battery

Project Number: UWRWE-A3653-ABN
Project Manager: Jacob Whritenour

Reported:
05/10/24 14:06

Notes and Definitions

S-07	The surrogate recovery was outside acceptance limits indicating a potential high bias. The sample did not exhibit concentrations above reporting level for analytes represented by this surrogate. Data quality is not affected.
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