

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. - WASTE MANAGEMENT USX Y03-14

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01-A@2'	12/12/23	0.0	No Staining	No Odor	Lab	40.16179088	-104.54042034	NC
FL01-B@3'	12/12/23	0.0	No Staining	No Odor	Lab	40.16392399	-104.54312814	NC
FL01-C@3'	12/12/23	0.0	No Staining	No Odor	Grab	40.16263590	-104.54123006	NC
FL01-D@3'	12/12/23	0.0	No Staining	No Odor	Grab	40.16326558	-104.54182041	NC
FL01-E@3'	12/12/23	0.0	No Staining	No Odor	Grab	40.16375654	-104.54227989	NC

Notes:

PID = Photoionization detector

NC = Not Collected

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 5 decimals of a degree using the North American Datum ("NAD") of 1983

TABLE 2
SOIL ANALYTICAL DATA
NOBLE ENERGY, INC. - WASTE MANAGEMENT USX Y03-14

Soil Sample ID	Date	¹ Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL ^{2,3}		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01-A@2'	12/12/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	81	<50	0.0577	0.131	0.492	0.284	0.410	0.118	0.329	0.0465	0.815	0.0595	0.233	0.763	0.00907	0.0115
FL01-B@3'	12/12/23	<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)
Residential SSL ²		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@2'	12/12/23	8.66	0.169	0.150	<2.00
FL01-B@3'	12/12/23	8.46	0.0707	0.0831	<2.00

Sample ID	Date Sampled	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL ²		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater SSL ^{2,3}		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01-A@2'	12/12/23	0.665	37.4	<0.200	<0.30	1.34	10.1	1.33	<0.260	<0.0200	5.34
FL01-B@3'	12/12/23	0.475	24.7	<0.200	<0.30	1.12	2.96	0.969	<0.260	<0.0200	4.22

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

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 = Millmhos per centimeter

mg/L = Milligrams per liter

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

Highlighted results are equal to or exceed the 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

Photographic Log


Equipment ID: FL01-A @2'

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Equipment ID: FL01-C @3'

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Photographic Log


Equipment ID: FL01-D@3'

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Equipment ID: FL01-E@3'

Equipment Type: Flowline

Material: Steel

Volume:
Contents: Oil/Gas/Water

Notes/Conditions:

Photographic Log

											
Equipment ID: FL01B@3'		Equipment Type: Flowline		Equipment ID:		Equipment Type:					
Material: Steel		Volume:		Contents: Oil/Gas/Water		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					

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Residential SSL ²		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
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1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

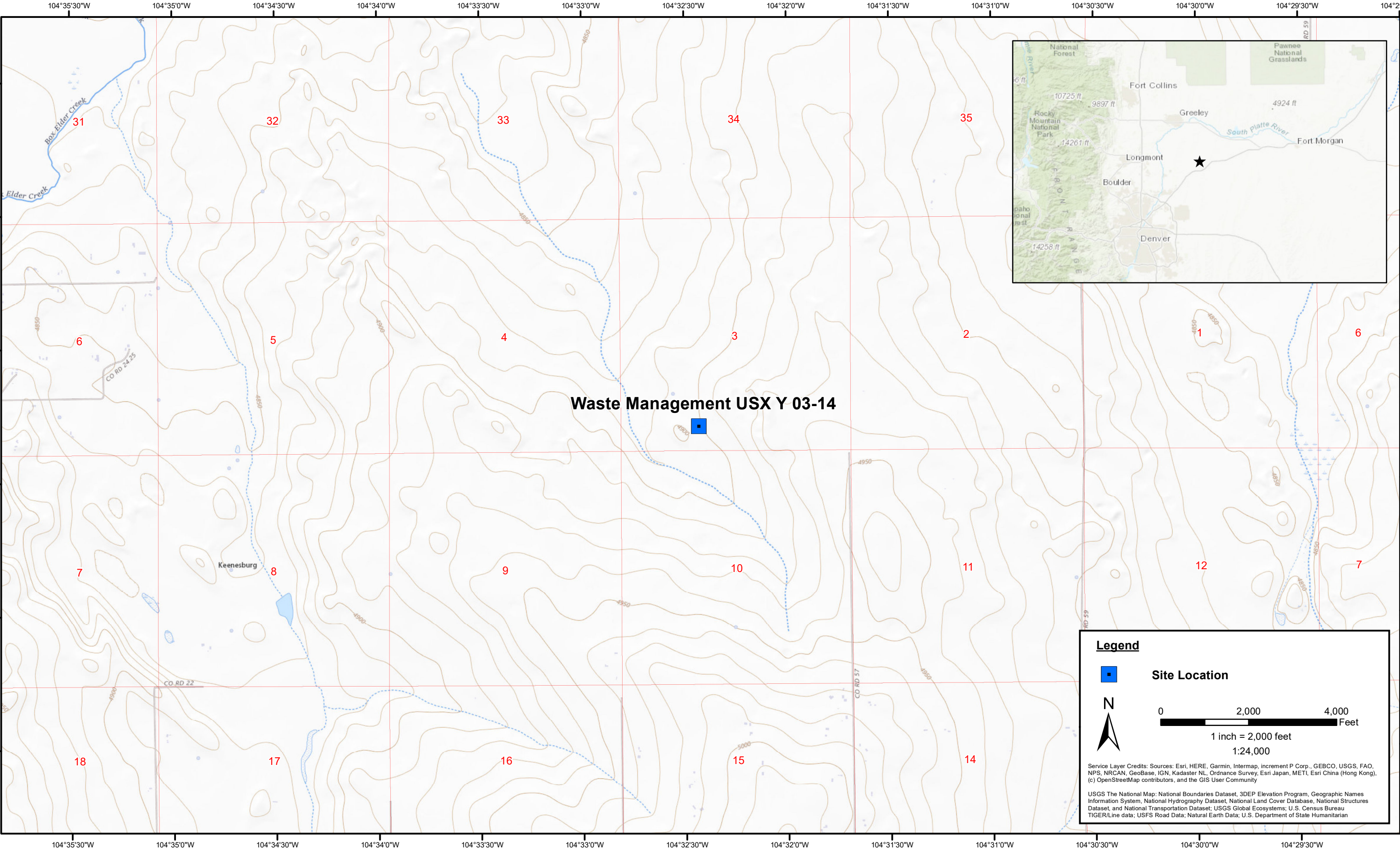
Benzo(a) = Benzo(a)pyrene


A,H = Dibenzo(a,h)anthracene

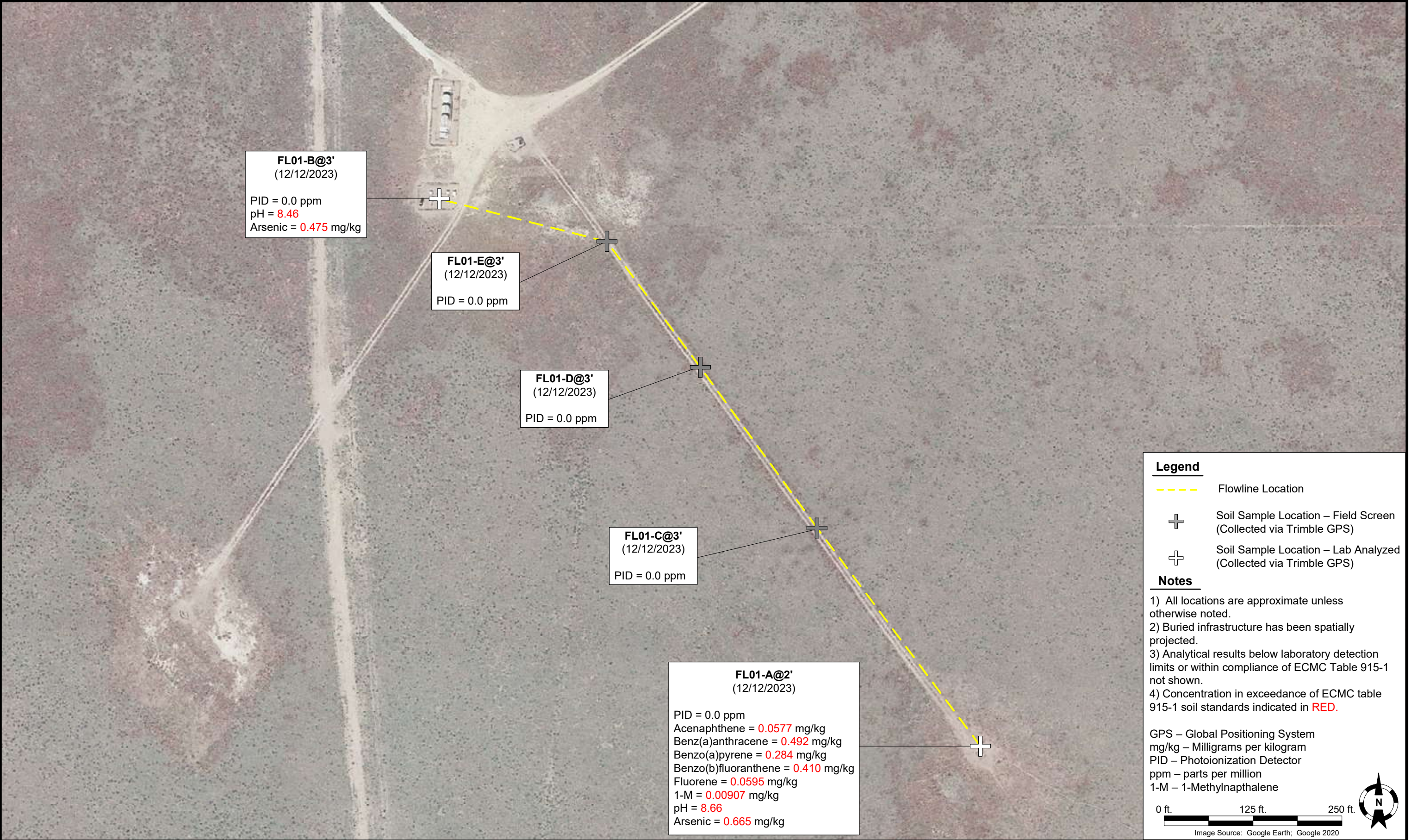
1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene



DATE: January 2024	 Tasman, Inc. 6855 W. 119th Ave Broomfield, CO 80020	Noble Energy, Inc - DJ Basin Waste Management USX Y 03-14 SESW, Section 3, Township 2 North, Range 64 West Weld County, Colorado	Site Location Map	Figure 1
DESIGNED BY: J. Whritenour				
DRAWN BY: L. Reed				



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 12, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

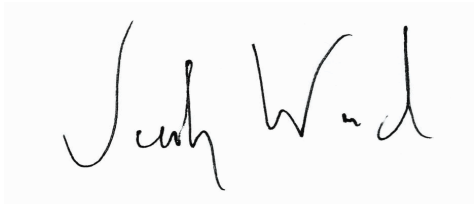
Broomfield, CO 80020

RE: Noble - Waste Management USX Y03-14

Work Order #2312229

Enclosed are the results of analyses for samples received by Summit Scientific on 12/12/23 17:31. 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 - Waste Management USX Y03-14

Project Number: UWRWE-A3445-ABN

Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

ANALYTICAL REPORT FOR SAMPLES



Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-A@2'	2312229-01	Soil	12/12/23 10:43	12/12/23 17:31
FL01-B@3'	2312229-02	Soil	12/12/23 11:25	12/12/23 17:31

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.

		Send Data To:	Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour		Company: Chevron
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Waste Management USX Y 03-14
City/State/Zip: Broomfield/CO/ 80020			AFE#: UW RWE-A3445-ABN
Phone: 978-857-4408	Project Name: Waste Management USX Y 03-14		PO/Billing Codes:
Sampler Name: Matthew Wentzel	Project Number:		Contact: Miguel 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			SAR, EC, pH by saturated paste
1	FL01-A@2'	12.12.23	1043	2			X			X			X	X	X	X	X	X				
2	FL02-B@3'	12.12.23	1125	3			X			X			X	X	X	X	X	X				
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						

Relinquished by: 	Date/Time: 12.12.23 1430	Received by: Tasman Lock Box	Date/Time: 17.12.23 1430	TAT Business Days	Field DO	Notes:
Relinquished by: Tasman Lock Box	Date/Time: 12.12.23 1731	Received by: 	Date/Time: 12.12.23 1731	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 84	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order: 2312229Client: NidekasmannClient Project ID: Waste management VSX403-14Shipped 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)

8.4

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature $< 6^{\circ}\text{C}$? ⁽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"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
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_2SO_4 , NaOH, HNO_3 , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the $\text{pH} \leq 2$? ⁽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

12/12/23
Date/Time



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

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-A@2'
2312229-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGL0623	12/15/23	12/16/23	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: **12/12/23 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	81	50	mg/kg	1	BGL0624	12/15/23	12/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	15.1	121 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-A@2'
2312229-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0577	0.00500	mg/kg	1	BGL0643	12/18/23	12/20/23	EPA 8270D SIM	
Anthracene	0.131	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.492	0.00500	"	"	"	"	"	"	E
Benzo (a) pyrene	0.284	0.00500	"	"	"	"	"	"	E
Benzo (b) fluoranthene	0.410	0.00500	"	"	"	"	"	"	E
Benzo (k) fluoranthene	0.118	0.00500	"	"	"	"	"	"	
Chrysene	0.329	0.00500	"	"	"	"	"	"	E
Dibenz (a,h) anthracene	0.0465	0.00500	"	"	"	"	"	"	
Fluoranthene	0.815	0.00500	"	"	"	"	"	"	E
Fluorene	0.0595	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.233	0.00500	"	"	"	"	"	"	E
Pyrene	0.763	0.00500	"	"	"	"	"	"	E
2-Methylnaphthalene	0.0115	0.00500	"	"	"	"	"	"	

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0202	60.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGL0749	12/20/23	12/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.665	0.200	mg/kg dry	1	BGL0711	12/19/23	12/27/23	EPA 6020B	
Barium	37.4	0.400	"	"	"	"	"	"	

Summit Scientific

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

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-A@2'
2312229-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Cadmium	ND	0.200	mg/kg dry	1	BGL0711	12/19/23	12/27/23	EPA 6020B
Copper	1.34	0.400	"	"	"	"	"	"
Lead	10.1	0.200	"	"	"	"	"	"
Nickel	1.33	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	5.34	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGL0719	12/19/23	12/20/23	EPA 7196A	

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

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	89.9	0.0500	mg/L dry	1	BGL1035	12/29/23	01/03/24	EPA 6020B	
Magnesium	14.4	0.0500	"	"	"	"	"	"	
Sodium	6.56	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.169	0.00100	units	1	BHA0096	01/03/24	01/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.2		%	1	BGL0807	12/21/23	12/21/23	Calculation	

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-A@2'
2312229-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Specific Conductance (EC)	0.150	0.0100	mmhos/cm	1	BGL1087	12/29/23	01/02/24	EPA 120.1	

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

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
pH	8.66		pH Units	1	BGL1086	12/29/23	01/02/24	EPA 9045D	

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Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-A@2'
2312229-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1-Methylnaphthalene	0.00784	0.00500	mg/kg	1	BHA0288	12/18/23	01/10/24	EPA 8270D SIM	I-04

Date Sampled: **12/12/23 10:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0241	72.3 %	40-150		"	"	"	"	I-04
<i>Surrogate: Fluoranthene-d10</i>	0.0257	77.1 %	40-150		"	"	"	"	I-04

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-B@3'
2312229-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGL0623	12/15/23	12/16/23	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: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGL0624	12/15/23	12/16/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.55	68.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-B@3'
2312229-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BGL0643	12/18/23	12/20/23	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: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0208	62.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0180	54.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BGL0749	12/20/23	12/27/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-B@3'
2312229-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	0.475	0.200	mg/kg dry	1	BGL0711	12/19/23	12/27/23	EPA 6020B
Barium	24.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.12	0.400	"	"	"	"	"	"
Lead	2.96	0.200	"	"	"	"	"	"
Nickel	0.969	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	4.22	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 12/12/23 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGL0719	12/19/23	12/20/23	EPA 7196A	

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

Date Sampled: 12/12/23 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	72.4	0.0500	mg/L dry	1	BGL1035	12/29/23	01/03/24	EPA 6020B	
Magnesium	13.1	0.0500	"	"	"	"	"	"	
Sodium	2.49	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 12/12/23 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0707	0.00100	units	1	BHA0096	01/03/24	01/03/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Broomfield CO, 80020

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

FL01-B@3'
2312229-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.5		%	1	BGL0807	12/21/23	12/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0831	0.0100	mmhos/cm	1	BGL1087	12/29/23	01/02/24	EPA 120.1	

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

Date Sampled: **12/12/23 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.46		pH Units	1	BGL1086	12/29/23	01/02/24	EPA 9045D	

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0623 - EPA 5030 Soil MS

Blank (BGL0623-BLK1)

Prepared: 12/15/23 Analyzed: 12/16/23

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	0.0392		"	0.0400		97.9	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

LCS (BGL0623-BS1)

Prepared: 12/15/23 Analyzed: 12/16/23

Benzene	0.110	0.0020	mg/kg	0.100		110	70-130			
Toluene	0.102	0.0050	"	0.100		102	70-130			
Ethylbenzene	0.0980	0.0050	"	0.100		98.0	70-130			
m,p-Xylene	0.190	0.010	"	0.200		94.9	70-130			
o-Xylene	0.0913	0.0050	"	0.100		91.3	70-130			
1,2,4-Trimethylbenzene	0.0856	0.0050	"	0.100		85.6	70-130			
1,3,5-Trimethylbenzene	0.0901	0.0050	"	0.100		90.1	70-130			
Naphthalene	0.0934	0.0038	"	0.100		93.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0380		"	0.0400		94.9	50-150			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.6	50-150			

Matrix Spike (BGL0623-MS1)

Source: 2312213-01

Prepared: 12/15/23 Analyzed: 12/16/23

Benzene	0.0924	0.0020	mg/kg	0.100	ND	92.4	70-130			
Toluene	0.0828	0.0050	"	0.100	ND	82.8	70-130			
Ethylbenzene	0.0776	0.0050	"	0.100	ND	77.6	70-130			
m,p-Xylene	0.150	0.010	"	0.200	ND	74.8	70-130			
o-Xylene	0.0703	0.0050	"	0.100	ND	70.3	70-130			
1,2,4-Trimethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130			
1,3,5-Trimethylbenzene	0.0966	0.0050	"	0.100	ND	96.6	70-130			
Naphthalene	0.0981	0.0038	"	0.100	ND	98.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400		95.2	50-150			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	50-150			

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0623 - EPA 5030 Soil MS

Matrix Spike Dup (BGL0623-MSD1)	Source: 2312213-01			Prepared: 12/15/23 Analyzed: 12/16/23						
Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130	8.90	30	
Toluene	0.0899	0.0050	"	0.100	ND	89.9	70-130	8.20	30	
Ethylbenzene	0.0823	0.0050	"	0.100	ND	82.3	70-130	5.89	30	
m,p-Xylene	0.160	0.010	"	0.200	ND	80.0	70-130	6.76	30	
o-Xylene	0.0755	0.0050	"	0.100	ND	75.5	70-130	7.20	30	
1,2,4-Trimethylbenzene	0.0915	0.0050	"	0.100	ND	91.5	70-130	24.6	30	
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130	4.97	30	
Naphthalene	0.0972	0.0038	"	0.100	ND	97.2	70-130	0.952	30	
Surrogate: 1,2-Dichloroethane-d4	0.0403		"	0.0400		101	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0398		"	0.0400		99.4	50-150			

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0624 - EPA 3550A

Blank (BGL0624-BLK1)

Prepared: 12/15/23 Analyzed: 12/16/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.5		"	12.5		100	30-150			

LCS (BGL0624-BS1)

Prepared: 12/15/23 Analyzed: 12/16/23

C10-C28 (DRO)	442	50	mg/kg	500		88.4	70-130			
Surrogate: o-Terphenyl	10.4		"	12.5		83.5	30-150			

Matrix Spike (BGL0624-MS1)

Source: 2312213-01

Prepared: 12/15/23 Analyzed: 12/16/23

C10-C28 (DRO)	472	50	mg/kg	500	11.4	92.1	70-130			
Surrogate: o-Terphenyl	9.62		"	12.5		76.9	30-150			

Matrix Spike Dup (BGL0624-MSD1)

Source: 2312213-01

Prepared: 12/15/23 Analyzed: 12/16/23

C10-C28 (DRO)	478	50	mg/kg	500	11.4	93.4	70-130	1.37	20	
Surrogate: o-Terphenyl	9.51		"	12.5		76.1	30-150			

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Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0643 - EPA 5030 Soil MS

Blank (BGL0643-BLK1)

Prepared: 12/18/23 Analyzed: 12/19/23

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	0.0159		"	0.0333		47.6	40-150			
Surrogate: Fluoranthene-d10	0.0343		"	0.0333		103	40-150			

LCS (BGL0643-BS1)

Prepared: 12/18/23 Analyzed: 12/19/23

Acenaphthene	0.0267	0.00500	mg/kg	0.0333	80.0	31-137
Anthracene	0.0272	0.00500	"	0.0333	81.6	30-120
Benzo (a) anthracene	0.0291	0.00500	"	0.0333	87.3	30-120
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	78.5	30-120
Benzo (b) fluoranthene	0.0290	0.00500	"	0.0333	87.1	30-120
Benzo (k) fluoranthene	0.0297	0.00500	"	0.0333	89.1	30-120
Chrysene	0.0286	0.00500	"	0.0333	85.8	30-120
Dibenz (a,h) anthracene	0.0265	0.00500	"	0.0333	79.4	30-120
Fluoranthene	0.0273	0.00500	"	0.0333	81.9	30-120
Fluorene	0.0262	0.00500	"	0.0333	78.7	30-120
Indeno (1,2,3-cd) pyrene	0.0200	0.00500	"	0.0333	60.1	30-120
Pyrene	0.0293	0.00500	"	0.0333	88.0	35-142
1-Methylnaphthalene	0.0268	0.00500	"	0.0333	80.5	35-142
2-Methylnaphthalene	0.0177	0.00500	"	0.0333	53.1	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0178		"	0.0333	53.5	40-150
Surrogate: Fluoranthene-d10	0.0286		"	0.0333	85.7	40-150

Summit Scientific

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

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGL0643 - EPA 5030 Soil MS

Matrix Spike (BGL0643-MS1)

Source: 2312211-21

Prepared: 12/18/23 Analyzed: 12/19/23

Acenaphthene	0.0199	0.00500	mg/kg	0.0333	ND	59.7	31-137				
Anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Benzo (a) anthracene	0.0173	0.00500	"	0.0333	ND	51.8	30-120				
Benzo (a) pyrene	0.0147	0.00500	"	0.0333	ND	44.2	30-120				
Benzo (b) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.6	30-120				
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120				
Chrysene	0.0177	0.00500	"	0.0333	ND	53.0	30-120				
Dibenz (a,h) anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120				
Fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120				
Fluorene	0.0192	0.00500	"	0.0333	ND	57.7	30-120				
Indeno (1,2,3-cd) pyrene	0.0159	0.00500	"	0.0333	ND	47.6	30-120				
Pyrene	0.0178	0.00500	"	0.0333	ND	53.5	35-142				
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.4	15-130				
2-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	58.0	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0143		"	0.0333		42.8	40-150				
Surrogate: Fluoranthene-d10	0.0162		"	0.0333		48.5	40-150				

Matrix Spike Dup (BGL0643-MSD1)

Source: 2312211-21

Prepared: 12/18/23 Analyzed: 12/19/23

Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137	1.77	30		
Anthracene	0.0146	0.00500	"	0.0333	ND	43.7	30-120	5.87	30		
Benzo (a) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	16.6	30		
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	48.9	30-120	10.2	30		
Benzo (b) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	8.56	30		
Benzo (k) fluoranthene	0.0200	0.00500	"	0.0333	ND	60.0	30-120	8.07	30		
Chrysene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	16.2	30		
Dibenz (a,h) anthracene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	2.50	30		
Fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	1.10	30		
Fluorene	0.0195	0.00500	"	0.0333	ND	58.6	30-120	1.42	30		
Indeno (1,2,3-cd) pyrene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	8.74	30		
Pyrene	0.0166	0.00500	"	0.0333	ND	49.9	35-142	6.97	30		
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.0	15-130	11.6	50		
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.6	15-130	17.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0143		"	0.0333		42.9	40-150				
Surrogate: Fluoranthene-d10	0.0158		"	0.0333		47.5	40-150				

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BHA0288 - EPA 5030 Soil MS

Blank (BHA0288-BLK1)

Prepared & Analyzed: 01/09/24

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	0.0276		"	0.0333		82.8	40-150			
Surrogate: Fluoranthene-d10	0.0284		"	0.0333		85.1	40-150			

LCS (BHA0288-BS1)

Prepared & Analyzed: 01/09/24

Acenaphthene	0.0291	0.00500	mg/kg	0.0333		87.4	31-137			
Anthracene	0.0311	0.00500	"	0.0333		93.2	30-120			
Benzo (a) anthracene	0.0194	0.00500	"	0.0333		58.1	30-120			
Benzo (a) pyrene	0.0269	0.00500	"	0.0333		80.8	30-120			
Benzo (b) fluoranthene	0.0282	0.00500	"	0.0333		84.5	30-120			
Benzo (k) fluoranthene	0.0301	0.00500	"	0.0333		90.4	30-120			
Chrysene	0.0293	0.00500	"	0.0333		88.0	30-120			
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333		67.7	30-120			
Fluoranthene	0.0293	0.00500	"	0.0333		87.8	30-120			
Fluorene	0.0290	0.00500	"	0.0333		87.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0264	0.00500	"	0.0333		79.3	30-120			
Pyrene	0.0338	0.00500	"	0.0333		101	35-142			
1-Methylnaphthalene	0.0311	0.00500	"	0.0333		93.3	35-142			
2-Methylnaphthalene	0.0250	0.00500	"	0.0333		74.9	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0290		"	0.0333		87.1	40-150			
Surrogate: Fluoranthene-d10	0.0308		"	0.0333		92.5	40-150			

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BHA0288 - EPA 5030 Soil MS

Matrix Spike (BHA0288-MS1)

Source: 2401101-01

Prepared & Analyzed: 01/09/24

Acenaphthene	0.0200	0.00500	mg/kg	0.0333	ND	60.1	31-137		
Anthracene	0.0206	0.00500	"	0.0333	ND	61.7	30-120		
Benzo (a) anthracene	0.0171	0.00500	"	0.0333	ND	51.3	30-120		
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.1	30-120		
Benzo (b) fluoranthene	0.0193	0.00500	"	0.0333	ND	58.0	30-120		
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.5	30-120		
Chrysene	0.0207	0.00500	"	0.0333	ND	62.0	30-120		
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.0	30-120		
Fluoranthene	0.0223	0.00500	"	0.0333	ND	67.0	30-120		
Fluorene	0.0215	0.00500	"	0.0333	ND	64.4	30-120		
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.2	30-120		
Pyrene	0.0235	0.00500	"	0.0333	ND	70.6	35-142		
1-Methylnaphthalene	0.0226	0.00500	"	0.0333	ND	67.8	15-130		
2-Methylnaphthalene	0.0175	0.00500	"	0.0333	ND	52.5	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0229		"	0.0333		68.8	40-150		
Surrogate: Fluoranthene-d10	0.0235		"	0.0333		70.4	40-150		

Matrix Spike Dup (BHA0288-MSD1)

Source: 2401101-01

Prepared & Analyzed: 01/09/24

Acenaphthene	0.0206	0.00500	mg/kg	0.0333	ND	61.9	31-137	3.05	30
Anthracene	0.0222	0.00500	"	0.0333	ND	66.5	30-120	7.57	30
Benzo (a) anthracene	0.0183	0.00500	"	0.0333	ND	54.9	30-120	6.77	30
Benzo (a) pyrene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	3.81	30
Benzo (b) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	2.56	30
Benzo (k) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.7	30-120	1.80	30
Chrysene	0.0212	0.00500	"	0.0333	ND	63.6	30-120	2.56	30
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	8.78	30
Fluoranthene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	2.35	30
Fluorene	0.0216	0.00500	"	0.0333	ND	64.7	30-120	0.449	30
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	0.426	30
Pyrene	0.0249	0.00500	"	0.0333	ND	74.8	35-142	5.87	30
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.3	15-130	2.15	50
2-Methylnaphthalene	0.0173	0.00500	"	0.0333	ND	52.0	15-130	0.977	50
Surrogate: 2-Methylnaphthalene-d10	0.0222		"	0.0333		66.7	40-150		
Surrogate: Fluoranthene-d10	0.0240		"	0.0333		72.0	40-150		

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

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0749 - EPA 3050B

Blank (BGL0749-BLK1)

Prepared: 12/20/23 Analyzed: 12/27/23

Boron ND 2.00 mg/L

LCS (BGL0749-BS1)

Prepared: 12/20/23 Analyzed: 12/27/23

Boron 4.45 2.00 mg/L 5.00 89.1 80-120

Duplicate (BGL0749-DUP1)

Source: 2312229-01

Prepared: 12/20/23 Analyzed: 12/27/23

Boron 0.0504 2.00 mg/L 0.0581 14.2 20

Matrix Spike (BGL0749-MS1)

Source: 2312229-01

Prepared: 12/20/23 Analyzed: 12/27/23

Boron 4.45 2.00 mg/L 5.00 0.0581 87.8 75-125

Matrix Spike Dup (BGL0749-MSD1)

Source: 2312229-01

Prepared: 12/20/23 Analyzed: 12/27/23

Boron 4.58 2.00 mg/L 5.00 0.0581 90.5 75-125 2.97 25

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Broomfield CO, 80020

Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0711 - EPA 3050B

Blank (BGL0711-BLK1)

Prepared: 12/19/23 Analyzed: 12/27/23

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 (BGL0711-BS1)

Prepared: 12/19/23 Analyzed: 12/27/23

Arsenic	37.0	0.200	mg/kg wet	40.0	92.6	80-120
Barium	38.0	0.400	"	40.0	95.1	80-120
Cadmium	1.90	0.200	"	2.00	94.9	80-120
Copper	37.6	0.400	"	40.0	93.9	80-120
Lead	18.9	0.200	"	20.0	94.5	80-120
Nickel	36.8	0.400	"	40.0	92.0	80-120
Silver	1.92	0.0200	"	2.00	96.0	80-120
Zinc	37.6	0.400	"	40.0	93.9	80-120
Selenium	3.86	0.260	"	4.00	96.6	80-120

Duplicate (BGL0711-DUP1)

Source: 2312221-02

Prepared: 12/19/23 Analyzed: 12/27/23

Arsenic	ND	0.200	mg/kg dry	ND		20	
Barium	61.4	0.400	"	73.5		17.9	20
Cadmium	0.159	0.200	"	0.200		22.8	20 QR-01
Copper	1.75	0.400	"	1.14		42.0	20 QR-04
Lead	8.20	0.200	"	12.3		40.3	20 QR-04
Nickel	1.56	0.400	"	1.73		10.3	20
Silver	0.0467	0.0200	"	0.0497		6.12	20
Zinc	5.06	0.400	"	4.22		18.1	20
Selenium	ND	0.260	"	ND			20

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0711 - EPA 3050B

Matrix Spike (BGL0711-MS1)

Source: 2312221-02

Prepared: 12/19/23 Analyzed: 12/27/23

Arsenic	6.96	0.200	mg/kg dry	49.2	ND	14.1	75-125			QM-07
Barium	112	0.400	"	49.2	73.5	77.4	75-125			
Cadmium	2.40	0.200	"	2.46	0.200	89.2	75-125			
Copper	8.89	0.400	"	49.2	1.14	15.7	75-125			QM-07
Lead	29.2	0.200	"	24.6	12.3	68.4	75-125			QM-07
Nickel	9.24	0.400	"	49.2	1.73	15.3	75-125			QM-07
Silver	2.31	0.0200	"	2.46	0.0497	92.0	75-125			
Zinc	12.8	0.400	"	49.2	4.22	17.4	75-125			QM-07
Selenium	4.00	0.260	"	4.92	ND	81.3	75-125			

Matrix Spike Dup (BGL0711-MSD1)

Source: 2312221-02

Prepared: 12/19/23 Analyzed: 12/27/23

Arsenic	7.10	0.200	mg/kg dry	49.2	ND	14.4	75-125	2.05	25	QM-07
Barium	116	0.400	"	49.2	73.5	86.0	75-125	3.73	25	
Cadmium	2.50	0.200	"	2.46	0.200	93.6	75-125	4.34	25	
Copper	8.97	0.400	"	49.2	1.14	15.9	75-125	0.931	25	QM-07
Lead	30.4	0.200	"	24.6	12.3	73.5	75-125	4.15	25	QM-07
Nickel	9.34	0.400	"	49.2	1.73	15.5	75-125	1.05	25	QM-07
Silver	2.40	0.0200	"	2.46	0.0497	95.5	75-125	3.66	25	
Zinc	12.9	0.400	"	49.2	4.22	17.7	75-125	1.27	25	QM-07
Selenium	4.08	0.260	"	4.92	ND	83.0	75-125	2.06	25	

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL0719 - 3060A Mod

Blank (BGL0719-BLK1)

Prepared: 12/19/23 Analyzed: 12/20/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGL0719-BS1)

Prepared: 12/19/23 Analyzed: 12/20/23

Chromium, Hexavalent 25.0 0.30 mg/kg wet 25.0 99.8 80-120

Duplicate (BGL0719-DUP1)

Source: 2311428-01

Prepared: 12/19/23 Analyzed: 12/20/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGL0719-MS1)

Source: 2311428-01

Prepared: 12/19/23 Analyzed: 12/20/23

Chromium, Hexavalent 26.3 0.30 mg/kg dry 28.2 ND 93.4 75-125

Matrix Spike Dup (BGL0719-MSD1)

Source: 2311428-01

Prepared: 12/19/23 Analyzed: 12/20/23

Chromium, Hexavalent 27.1 0.30 mg/kg dry 28.2 ND 96.2 75-125 2.95 20

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL1035 - General Preparation

Blank (BGL1035-BLK1)

Prepared: 12/29/23 Analyzed: 01/03/24

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

LCS (BGL1035-BS1)

Prepared: 12/29/23 Analyzed: 01/03/24

Calcium	5.42	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.16	0.0500	"	5.00	103	70-130
Sodium	5.38	0.0500	"	5.00	108	70-130

Summit Scientific

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Project: Noble - Waste Management USX Y03-14

Project Number: UWRWE-A3445-ABN

Project Manager: Jacob Whritenour

Reported:

01/12/24 14:55

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

Summit Scientific

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

Batch BGL0807 - General Preparation

Duplicate (BGL0807-DUP1)		Source: 2312229-01		Prepared & Analyzed: 12/21/23						
% Solids	93.8		%		94.2			0.419	20	

Summit Scientific

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Project: Noble - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL1087 - General Preparation

Blank (BGL1087-BLK1)

Prepared: 12/29/23 Analyzed: 01/02/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGL1087-BS1)

Prepared: 12/29/23 Analyzed: 01/02/24

Specific Conductance (EC) 0.148 0.0100 mmhos/cm 0.150 98.9 95-105

Duplicate (BGL1087-DUP1)

Source: 2311428-01

Prepared: 12/29/23 Analyzed: 01/02/24

Specific Conductance (EC) 0.257 0.0100 mmhos/cm 0.260 0.928 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 - Waste Management USX Y03-14
Project Number: UWRWE-A3445-ABN
Project Manager: Jacob Whritenour

Reported:
01/12/24 14:55

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 BGL1086 - General Preparation

LCS (BGL1086-BS1)

Prepared: 12/29/23 Analyzed: 01/02/24

pH	9.04	pH Units	9.18	98.5	95-105
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Duplicate (BGL1086-DUP1)

Source: 2311428-01

Prepared: 12/29/23 Analyzed: 01/02/24

pH	8.22	pH Units	8.31	1.09	20
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Summit Scientific

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Notes and Definitions

QR-04	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QR-01	Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
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.
I-04	Sample was analyzed out of recommended holding time per clients request.
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
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