

FIRST QUARTER 2024
SITE MONITORING DATA
MATSUSHIMA-PM K 2-1 FACILITY
ECMC SPILL TRACKING #485348
ECMC REMEDIATION #29940

Prepared for:



2115 117th Avenue
Greeley, CO 80631

Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLE 1
GROUNDWATER ELEVATION DATA
NOBLE ENERGY, INC. - MATSUSHIMA-PM K 2-1



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.) ⁽¹⁾	Depth to LNAPL (ft.) ⁽¹⁾	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01	12/21/23	4666.56	13.16	6.23	ND	ND	4660.59
BH01	03/06/24	4666.56	13.25	6.69	ND	ND	4660.13
BH02	12/21/23	4667.03	13.38	6.70	ND	ND	4660.55
BH02	03/06/24	4667.03	13.31	7.14	ND	ND	4660.11
BH03	12/21/23	4666.71	13.35	6.40	ND	ND	4660.55
BH03	03/06/24	4666.71	13.37	6.86	ND	ND	4660.09
BH04	12/21/23	4666.20	13.36	5.79	ND	ND	4660.63
BH04	03/06/24	4666.20	13.39	6.27	ND	ND	4660.15
BH05	12/21/23	4667.24	13.66	4.89	ND	ND	4661.61
BH05	03/06/24	4667.24	13.59	5.30	ND	ND	4661.20

Notes:

* Groundwater elevation was corrected for product thickness (when present) using the following calculation:

Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

1. Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

Definitions:

ft. = Feet

BTOC = Below top of casing

ND = No LNAPL detected

AMSL = Above mean sea level

LNAPL = Light non-aqueous phase liquid

TABLE 2
GROUNDWATER ANALYTICAL DATA
NOBLE ENERGY, INC. - MATSUSHIMA-PM K 2-1



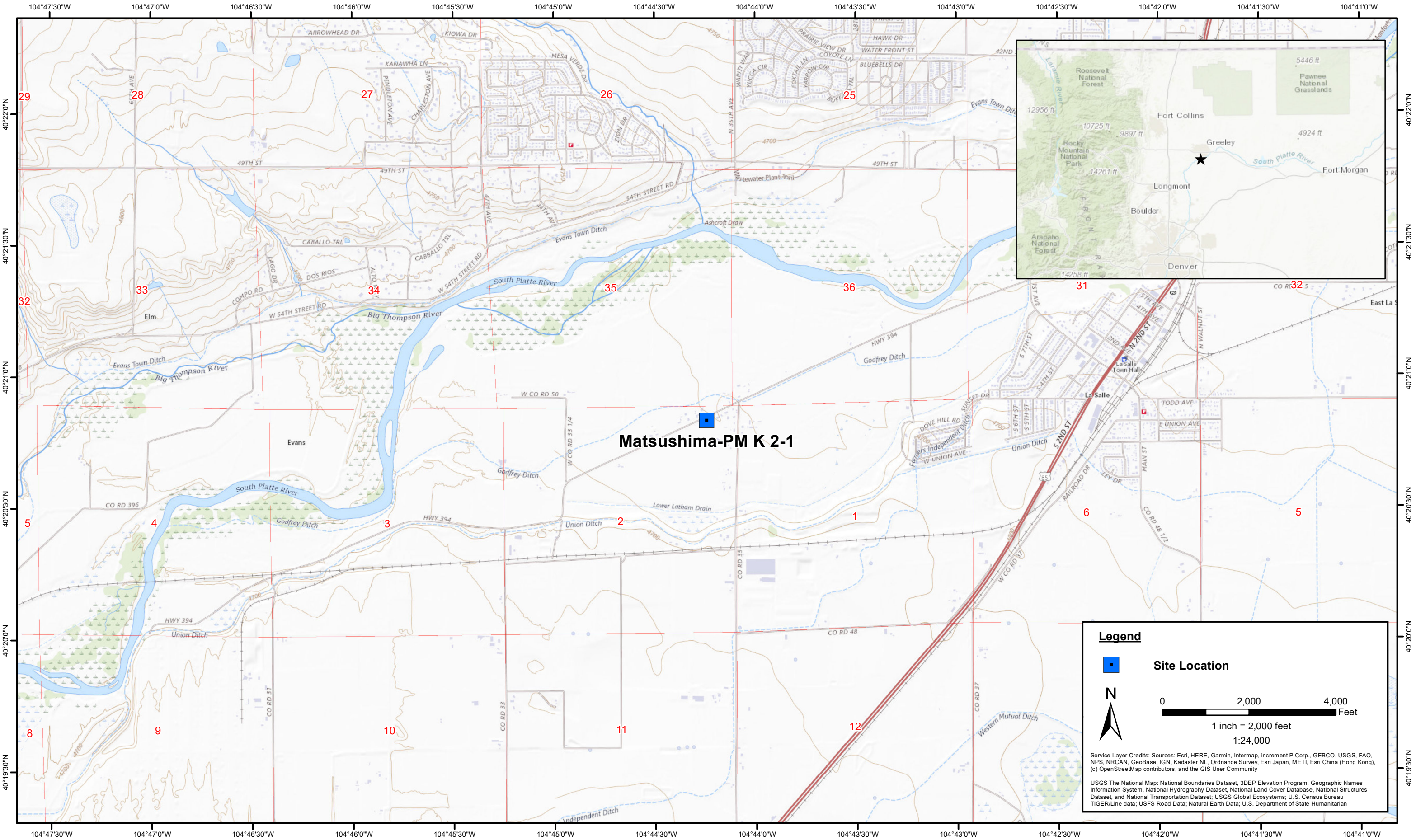
Monitoring Well ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4 - TMB (µg/L)	1,3,5 - TMB (µg/L)	1-M (µg/L)	2-M (µg/L)	Total Dissolved Solids (mg/L)	Chlorides (mg/L)	Sulfates (mg/L)
ECMC Standard ⁽¹⁾		5	560	700	1,400	140	67	67	1.1 ⁽²⁾	3.6 ⁽²⁾	1.25 X Background	250	250
BH01	12/21/23	3.3	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	758	125	274
BH01	03/06/24	2.7	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	823	116	320
BH02	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	797	127	265
BH02	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	834	118	261
BH03	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	779	122	265
BH03	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	859	120	258
BH04 ⁽³⁾	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	809	118	252
BH04 ⁽³⁾	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	820	116	252
BH05 ⁽³⁾	12/21/23	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	824	130	274
BH05 ⁽³⁾	03/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<0.500	<0.500	815	117	270

Notes:

⁽¹⁾ Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).
⁽²⁾Groundwater standards reference from USEPA Regional Screening Level (RSL) Resident Tapwater Table (TR=1E-06, HQ=0.1) November 2022
⁽³⁾Monitoring well used for background inorganic concentrations

Definitions:

< = Analytical result is less than the indicated laboratory reporting limit
ECMC = Colorado Energy and Carbon Management Commission
USEPA = United States Environmental Protection Agency
µg/L = Micrograms per liter
mg/L = Milligrams per liter
1,2,4 - TMB = 1,2,4 - trimethylbenzene
1,3,5 - TMB = 1,3,5 - trimethylbenzene
M = Methylnaphthalene
TDS = Total Dissolved Solids



DATE:
October 2023

DESIGNED BY:
J. Whritenour

DRAWN BY:
L. Reed




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

Noble Energy, Inc - DJ Basin
Matsushima-PM K 2-1
NENE, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Site Location Map

Figure
1



DATE: January 2024	 <div>Tasman, Inc. 6855 W 119th Ave. Broomfield, CO 80020</div>	Noble Energy, Inc. – DJ Basin Matsushima-PMK 2-1 NENE, Section 2, Township 4 North, Range 66 West Weld County, Colorado	Site Overview Map	FIGURE 2
DESIGNED BY: JW				
DRAWN BY: MR				



DATE:	March 2024
DESIGNED BY:	JW
DRAWN BY:	J. Woffinden

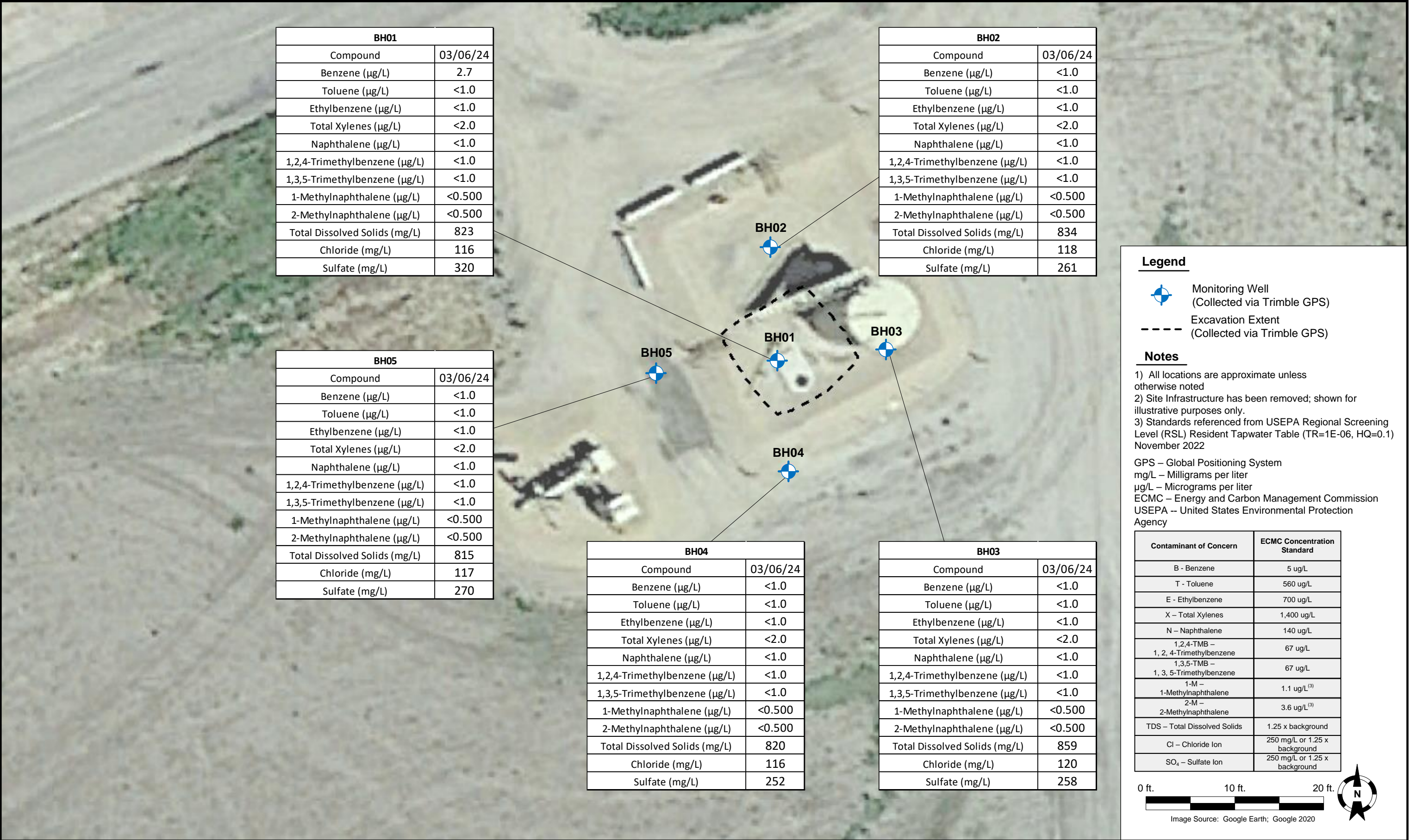


TASMAN
Tasman, Inc.
6855 W 119th Ave.
Broomfield, CO 80020

Noble Energy, Inc. – DJ Basin
Matsushima-PMK 2-1
NENE, Section 2, Township 4 North, Range 66 West
Weld County, Colorado

Groundwater Potentiometric
Surface Contour Map
(03/06/2024)

FIGURE
3



Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 18, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

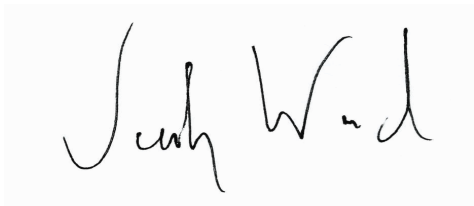
Broomfield, CO 80020

RE: Noble - Matsushima-PM K 2-1

Work Order #2403105

Enclosed are the results of analyses for samples received by Summit Scientific on 03/06/24 17:30. 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 - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

ANALYTICAL REPORT FOR SAMPLES

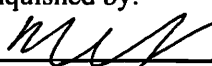
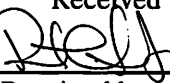
Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	2403105-01	Water	03/06/24 11:29	03/06/24 17:30
BH02	2403105-02	Water	03/06/24 11:06	03/06/24 17:30
BH03	2403105-03	Water	03/06/24 11:16	03/06/24 17:30
BH04	2403105-04	Water	03/06/24 11:18	03/06/24 17:30
BH05	2403105-05	Water	03/06/24 11:05	03/06/24 17:30

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: Matsushima PMK 2-1
City/State/Zip: Broomfield/CO/ 80020			AFE#:
Phone:		Project Name: Matsushima PMK 2-1	PO/Billing Codes:
Sampler Name: RY, MW		Project Number:	Contact: Dan Peterson

					Preservative				Matrix				Analysis Requested						Special Instructions
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN	1,2,4 & 1,3,5-TMBS	TDS, Cl, SO4	1-M, 2-M			
1	BH01	3/6/24	1129	6	3		3		X				X	X	X	X			
2	BH02		1106																
3	BH03		1116																
4	BH04		1118																
5	BH05		1105																
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 3/6/24 1430	Received by: Tasman Lock Box	Date/Time: 3/6/24 1430	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: Tasman Lock Box	Date/Time: 3/6/24 1730	Received by: 	Date/Time: 3/6/24 1730	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: 6.7	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2403105Client: Noble TushmanClient Project ID: Matsushima Pmk 2-1Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other

Airbill #:

--	--	--	--	--

Matrix (Check all that apply)

Air

☐

Soil/Solid

☐

Water

☒

Other

☐

Temp (°C)

6.7

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

3/6/24
Date/Time



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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH01
2403105-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	2.7	1.0		ug/l	1	BHC0194	03/07/24	03/08/24	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	12.4	93.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.6	102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.6 %		21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
1-Methylnaphthalene	ND	0.500		ug/l	1	BHC0222	03/08/24	03/09/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500		"	"	"	"	"	"	

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 2-Methylnaphthalene-d10	2.64	132 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.46	123 %		40-150		"	"	"	"	

Anions by EPA Method 300.0

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH01
2403105-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	116	12.0		mg/L	200	BHC0351	03/13/24	03/13/24	EPA 300.0	
Sulfate	320	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/06/24 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	823	10.0		mg/L	1	BHC0314	03/12/24	03/13/24	SM2540C	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH02
2403105-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHC0194	03/07/24	03/08/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	12.2	91.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.6	102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.8 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHC0222	03/08/24	03/09/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.27	114 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.05	103 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH02
2403105-02 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	118	12.0		mg/L	200	BHC0351	03/13/24	03/13/24	EPA 300.0	
Sulfate	261	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/06/24 11:06**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	834	10.0		mg/L	1	BHC0314	03/12/24	03/13/24	SM2540C	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH03
2403105-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHC0194	03/07/24	03/08/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	12.2	91.5 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.5	101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.6 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHC0222	03/08/24	03/09/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.43	122 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.18	109 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1

Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH03
2403105-03 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	120	12.0		mg/L	200	BHC0351	03/13/24	03/13/24	EPA 300.0	
Sulfate	258	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/06/24 11:16**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	859	10.0		mg/L	1	BHC0314	03/12/24	03/13/24	SM2540C	

Summit Scientific

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

Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

BH04
2403105-04 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHC0194	03/07/24	03/08/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	12.5	93.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.7	103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.4	101 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHC0222	03/08/24	03/09/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	2.03	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.45	123 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

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Reported:
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BH04
2403105-04 (Water)

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Anions by EPA Method 300.0

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	116	12.0		mg/L	200	BHC0351	03/13/24	03/13/24	EPA 300.0	
Sulfate	252	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/06/24 11:18**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	820	10.0		mg/L	1	BHC0314	03/12/24	03/13/24	SM2540C	

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Reported:
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BH05
2403105-05 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	1.0	ug/l	1	BHC0194	03/07/24	03/08/24	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	12.3	92.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8	13.5	101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.2 %	21-167		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
1-Methylnaphthalene	ND	0.500	ug/l	1	BHC0222	03/08/24	03/09/24	EPA 8270D SIM	
2-Methylnaphthalene	ND	0.500	"	"	"	"	"	"	

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	1.81	90.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	2.52	126 %	40-150		"	"	"	"	

Anions by EPA Method 300.0

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Reported:
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BH05
2403105-05 (Water)

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Anions by EPA Method 300.0

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	117	12.0		mg/L	200	BHC0351	03/13/24	03/13/24	EPA 300.0	
Sulfate	270	60.0		"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **03/06/24 11:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	815	10.0		mg/L	1	BHC0314	03/12/24	03/13/24	SM2540C	

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Reported:
03/18/24 11:51

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHC0194 - EPA 5030 Water MS

Blank (BHC0194-BLK1)

Prepared & Analyzed: 03/07/24

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.8		"	13.3		96.2	23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

LCS (BHC0194-BS1)

Prepared & Analyzed: 03/07/24

Benzene	37.0	1.0	ug/l	33.3		111	51-132			
Toluene	34.6	1.0	"	33.3		104	51-138			
Ethylbenzene	44.3	1.0	"	33.3		133	58-146			
m,p-Xylene	90.3	2.0	"	66.7		135	57-144			
o-Xylene	43.7	1.0	"	33.3		131	53-146			
Naphthalene	24.4	1.0	"	33.3		73.1	70-130			
1,2,4-Trimethylbenzene	39.4	1.0	"	33.3		118	70-130			
1,3,5-Trimethylbenzene	39.1	1.0	"	33.3		117	70-130			
Surrogate: 1,2-Dichloroethane-d4	22.6		"	13.3		169	23-173			
Surrogate: Toluene-d8	13.9		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	10.7		"	13.3		80.2	21-167			

Matrix Spike (BHC0194-MS1)

Source: 2403062-01

Prepared & Analyzed: 03/07/24

Benzene	33.0	1.0	ug/l	33.3	ND	98.9	34-141			
Toluene	31.4	1.0	"	33.3	ND	94.2	27-151			
Ethylbenzene	29.9	1.0	"	33.3	ND	89.8	29-160			
m,p-Xylene	61.5	2.0	"	66.7	ND	92.2	20-166			
o-Xylene	30.3	1.0	"	33.3	ND	90.9	33-159			
Naphthalene	25.8	1.0	"	33.3	ND	77.3	70-130			
1,2,4-Trimethylbenzene	26.6	1.0	"	33.3	ND	79.8	70-130			
1,3,5-Trimethylbenzene	27.2	1.0	"	33.3	ND	81.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.4		"	13.3		93.1	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		105	21-167			

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Project: Noble - Matsushima-PM K 2-1
Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
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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 BHC0194 - EPA 5030 Water MS

Matrix Spike Dup (BHC0194-MSD1)	Source: 2403062-01			Prepared & Analyzed: 03/07/24						
Benzene	33.9	1.0	ug/l	33.3	ND	102	34-141	2.84	30	
Toluene	32.0	1.0	"	33.3	ND	96.1	27-151	1.99	30	
Ethylbenzene	31.4	1.0	"	33.3	ND	94.3	29-160	4.92	30	
m,p-Xylene	63.5	2.0	"	66.7	ND	95.3	20-166	3.28	30	
o-Xylene	31.3	1.0	"	33.3	ND	93.8	33-159	3.18	30	
Naphthalene	27.4	1.0	"	33.3	ND	82.2	70-130	6.21	30	
1,2,4-Trimethylbenzene	28.6	1.0	"	33.3	ND	85.7	70-130	7.18	30	
1,3,5-Trimethylbenzene	28.5	1.0	"	33.3	ND	85.5	70-130	4.81	30	
Surrogate: 1,2-Dichloroethane-d4	12.4		"	13.3		93.2	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	13.9		"	13.3		104	21-167			

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Reported:
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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 BHC0222 - EPA 5030 Water MS

Blank (BHC0222-BLK1)

Prepared: 03/08/24 Analyzed: 03/09/24

1-Methylnaphthalene	ND	0.500	ug/l							
2-Methylnaphthalene	ND	0.500	"							
Surrogate: 2-Methylnaphthalene-d10	2.52		"	2.00		126	40-150			
Surrogate: Fluoranthene-d10	1.63		"	2.00		81.3	40-150			

LCS (BHC0222-BS1)

Prepared: 03/08/24 Analyzed: 03/09/24

1-Methylnaphthalene	2.13	0.500	ug/l	2.00		106	30-120			
2-Methylnaphthalene	2.15	0.500	"	2.00		107	0-200			
Surrogate: 2-Methylnaphthalene-d10	1.66		"	2.00		83.2	40-150			
Surrogate: Fluoranthene-d10	1.95		"	2.00		97.4	40-150			

LCS Dup (BHC0222-BS1)

Prepared: 03/08/24 Analyzed: 03/09/24

1-Methylnaphthalene	2.23	0.500	ug/l	2.00		111	30-120	4.60	30	
2-Methylnaphthalene	2.37	0.500	"	2.00		119	0-200	9.96	200	
Surrogate: 2-Methylnaphthalene-d10	1.65		"	2.00		82.5	40-150			
Surrogate: Fluoranthene-d10	2.82		"	2.00		141	40-150			

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Anions by EPA Method 300.0 - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch BHC0351 - General Preparation

Blank (BHC0351-BLK1)

Prepared & Analyzed: 03/13/24

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

LCS (BHC0351-BS1)

Prepared & Analyzed: 03/13/24

Chloride	3.07	0.0600	mg/L	3.00	102	90-110
Sulfate	15.2	0.300	"	15.0	101	90-110

Duplicate (BHC0351-DUP1)

Source: 2403062-01

Prepared & Analyzed: 03/13/24

Chloride	117	12.0	mg/L	119	1.53	20
Sulfate	538	60.0	"	617	13.7	20

Matrix Spike (BHC0351-MS1)

Source: 2403062-01

Prepared & Analyzed: 03/13/24

Chloride	711	12.0	mg/L	600	119	98.6	80-120
Sulfate	3560	60.0	"	3000	617	98.1	80-120

Matrix Spike (BHC0351-MS2)

Source: 2403106-01

Prepared & Analyzed: 03/13/24

Chloride	713	12.0	mg/L	600	111	100	80-120
Sulfate	3990	60.0	"	3000	909	103	80-120

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Reported:
03/18/24 11:51

Total Dissolved Solids by SM2540C - Quality Control

Summit Scientific

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

Batch BHC0314 - General Preparation

Blank (BHC0314-BLK1)

Prepared: 03/12/24 Analyzed: 03/13/24

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BHC0314-DUP1)

Source: 2403105-01

Prepared: 03/12/24 Analyzed: 03/13/24

Total Dissolved Solids 817 10.0 mg/L 823 0.805 20

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Project Number: UWRWE-A1966-ABN
Project Manager: Jacob Whritenour

Reported:
03/18/24 11:51

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference