

# **FREMONT ENVIRONMENTAL INC.**

May 31, 2023

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Ave.  
Greeley, CO 80634

Subject:       **Groundwater Data Submittal**  
Cox PM C8-6  
API # 05-123-14174  
SENW Sec. 8, T4N, R64W  
Weld County, Colorado  
Fremont Project No. C022-018  
Facility # 327111, Remediation # 21024

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Site Investigation Report for the Cox PM C 8-6 site in Weld County, Colorado. The enclosed report describes site investigation and sampling efforts to assess soil and groundwater quality at the site.

The site's monitoring well has achieved Colorado Oil and Gas Conservation Commission compliant standards under static groundwater conditions for four consecutive quarters. Noble should request a no further action (NFA) determination for groundwater monitoring at the site.

Please contact me at (303) 956-8714 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,  
**FREMONT ENVIRONMENTAL INC.**



Ethan D. Black, P.G.  
Consultant

Enclosure

**TABLE 1**  
**SUMMARY OF ORGANIC GROUNDWATER CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**COX PM C 8-6, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-018**

<b>SAMPLE LOCATION</b>	<b>DATE</b>	<b>BENZENE (µg/L)</b>	<b>TOLUENE (µg/L)</b>	<b>ETHYL BENZENE (µg/L)</b>	<b>TOTAL XYLENES (µg/L)</b>	<b>NAPHTHALENE (µg/L)</b>	<b>1,2,4 TRIMETHYL-BENZENE (µg/L)</b>	<b>1,3,5 TRIMETHYL-BENZENE (µg/L)</b>
MW-1	5/4/2022	1.5	<1.0	<1.0	61	<1.0	1.4	14
	8/26/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
	11/16/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
	2/27/2023	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	3/23/2023	DRY	DRY	DRY	DRY	DRY	DRY	DRY
	4/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
Table 915-1 Limits		5	560	700	1,400	140	67	67

**TABLE 2**  
**SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**COX PM C 8-6, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-018**

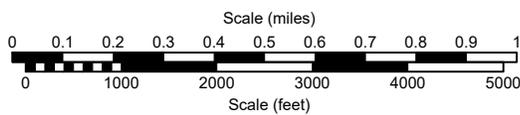
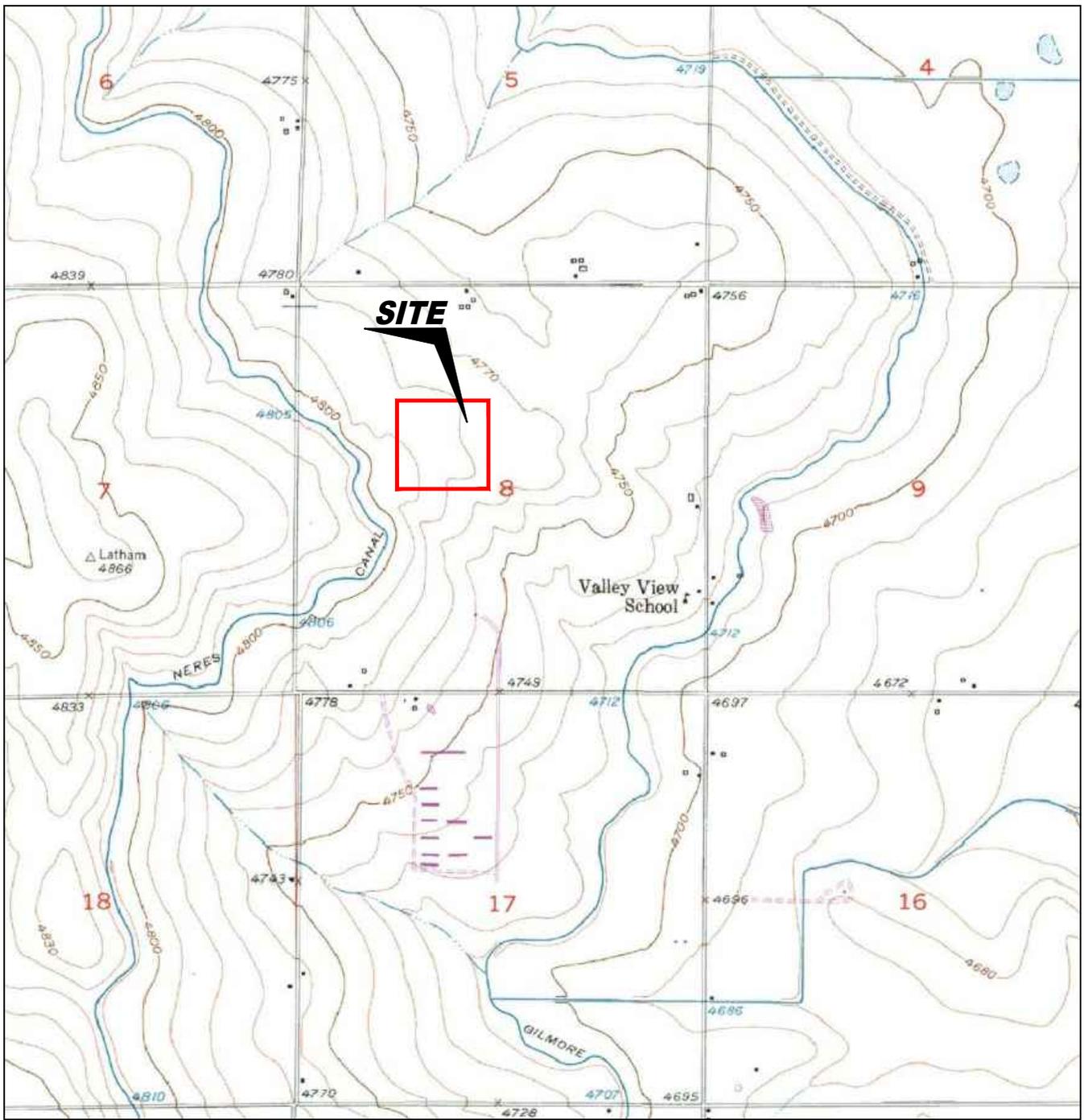
<b>SAMPLE LOCATION</b>	<b>DATE</b>	<b>TOTAL DISSOLVED SOLIDS (mg/L)</b>	<b>CHLORIDE ION (mg/L)</b>	<b>SULFATE ION (mg/L)</b>
MW-1	5/4/2022	2050	367	198
	8/26/2022	1280	205	283.0
	11/16/2022	526	251	98.4
	2/27/2023	DRY	DRY	DRY
	3/23/2023	DRY	DRY	DRY
	4/28/2023	2280	811	933.0
<b>Table 915-1 Limits</b>		<b>&lt;1.25 x local background</b>	<small>250 or &lt;1.25 x local background</small>	<small>250 or &lt;1.25 x local background</small>

Bold face values exceed the COGCC limits

NP - No Free Product

NA - Not Analyzed

NAP - Not Applicable



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
**SITE LOCATION MAP**

**NOBLE ENERGY INC. ~ COX PMC 8-6**  
 SENW Sec. 8, T4N, R64W, 6th PM  
 Weld County, Colorado  
 40.333729°, -104.577017°

Project # <b>C022-018</b>	Prepared By	Drawn By <b>TA</b>
Date <b>6/1/23</b>	Reviewed by <b>EB</b>	Filename 22018T





**LEGEND**

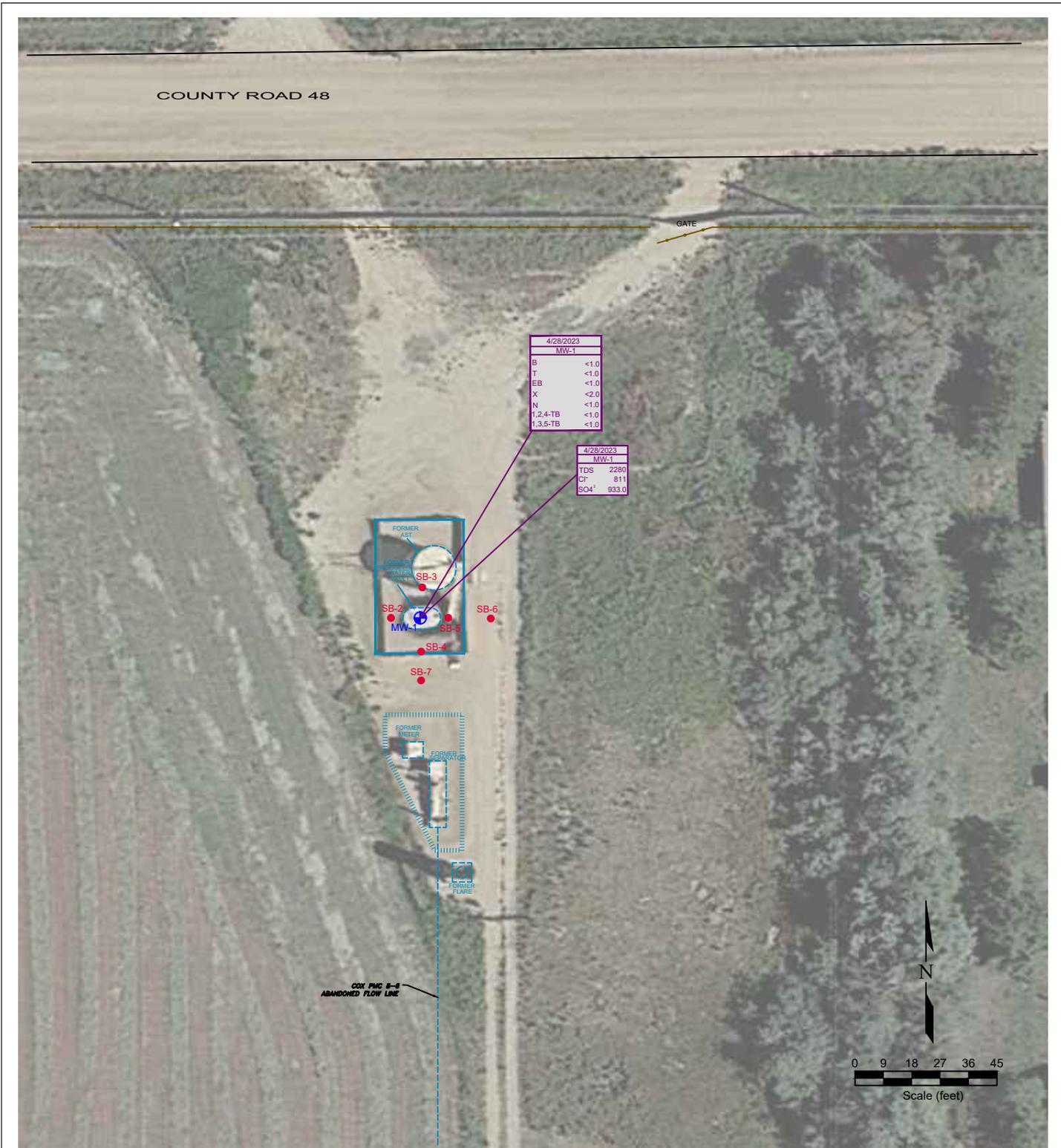
- SOIL BORING
- ⊕ MONITORING WELL
- ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- CONTAINMENT WALL
- CONTAINMENT BERM
- FLOW LINE
- FENCE LINE

**Figure 2  
SITE MAP**

**NOBLE ENERGY INC. ~ COX PMC 8-6**  
 SENW Sec. 8, T4N, R64W, 6th PM  
 Weld County, Colorado  
 40.333729°, -104.577017°

Project No. <b>C022-018</b>	API #	Facility # <b>TA</b>
Date <b>6/1/23</b>	Reviewed By <b>EB</b>	Filename <b>22018QQ</b>





4/28/2023	
MW-1	
B	<1.0
T	<1.0
EB	<1.0
X	<2.0
N	<1.0
1,2,4-TB	<1.0
1,3,5-TB	<1.0

4/28/2023	
MW-1	
TDS	2280
Cl <sup>-</sup>	811
SO <sub>4</sub> <sup>2-</sup>	933.0

**LEGEND**

- SOIL BORING
- ⊕ MONITORING WELL
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- CONTAINMENT WALL
- CONTAINMENT BERM
- FLOW LINE
- FENCE LINE

11/18/2022	
MW-1	
B	<1.0
T	<1.0
EB	<1.0
X	<2.0
N	<1.0
1,2,4-TB	<1.0
1,3,5-TB	<1.0

11/18/2022	
MW-1	
TDS	2280
Cl <sup>-</sup>	251
SO <sub>4</sub> <sup>2-</sup>	98.4

Figure 3  
**GROUNDWATER CHEMISTRY MAP**  
 April 28, 2023  
**NOBLE ENERGY INC. ~ COX PMC 8-8**  
 SENW Sec. 8, T4N, R64W, 6th PM  
 Weld County, Colorado  
 40.333729°, -104.577017°

Project No. <b>C022-018</b>	API #	Facility # <b>TA</b>
Date <b>6/1/23</b>	Reviewed By <b>EB</b>	Filename <b>22018QQ</b>



# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 15, 2023

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549  
RE: Noble - Cox PMC  
Work Order #2305084

Enclosed are the results of analyses for samples received by Summit Scientific on 05/03/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/15/23 15:01

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	2305084-01	Water	04/28/23 00:00	05/03/23 16:30

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.*

2305084

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Client: Fremont Environmental

Project Manager: Paul Henehan

Address:

E-Mail: Fremont Distribution List: PaulH, EthanB, JeffG and ChrisL. @fremontenv.com

City/State/Zip:

Bill to: Dan

Phone:

Project Name: Noble-Cox PMC

Sampler Name: EB

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMS, Naph.	TPH	PAH (915)	EC, SAR, pH, Boron	Metals (915)	
1	MW-1	4/28/23		4		X	X		X								X	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: <i>Ethan Black</i>	Date/Time: 5/3/23 1649	Received by: S <sub>2</sub>	Date/Time: 5/3/23 1649	<b>Turn Around Time</b> (Check) Same Day ___ 72 hours 24 hours ___ Standard <input checked="" type="checkbox"/> 48 hours ___ <b>Sample Integrity:</b> Temperature Upon Receipt: 11.8 Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: S <sub>2</sub>	Date/Time: 5/3/23 1630	Received by: <i>[Signature]</i>	Date/Time: 5/3/23 1630		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2305084

Client: Fremont Client Project ID: Noble-Cox Pmc

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

Matrix (Check all that apply) Air  Soil/Solid  Water  Other

Temp (°C)  Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	COC marked HNO <sub>3</sub> no bottles marked
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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): <u>VOAS may be HCl and there is an error on the COC</u>				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS

Custodian Printed Name

5/3/23

Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/15/23 15:01

**MW-1**  
**2305084-01 (Water)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **04/28/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGE0175	05/05/23	05/10/23	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: **04/28/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.1	106 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	98.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.3	99.6 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **04/28/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>811</b>	12.0		mg/L	200	BGE0144	05/04/23	05/05/23	EPA 300.0	
Sulfate	<b>933</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **04/28/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>2280</b>	10.0		mg/L	1	BGE0152	05/04/23	05/04/23	SM2540C	

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.



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/15/23 15:01

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BGE0175 - EPA 5030 Water MS

##### Blank (BGE0175-BLK1)

Prepared: 05/05/23 Analyzed: 05/10/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	13.8		"	13.3		104	23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.3	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.9	21-167			

##### LCS (BGE0175-BS1)

Prepared: 05/05/23 Analyzed: 05/10/23

Benzene	37.7	1.0	ug/l	41.7		90.4	51-132			
Toluene	39.1	1.0	"	41.7		93.8	51-138			
Ethylbenzene	44.5	1.0	"	41.7		107	58-146			
m,p-Xylene	103	2.0	"	83.3		124	57-144			
o-Xylene	43.6	1.0	"	41.7		105	53-146			
Naphthalene	43.3	1.0	"	41.7		104	70-130			
1,2,4-Trimethylbenzene	45.4	1.0	"	41.7		109	70-130			
1,3,5-Trimethylbenzene	51.6	1.0	"	41.7		124	70-130			
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	13.0		"	13.3		97.7	20-170			
Surrogate: 4-Bromofluorobenzene	13.4		"	13.3		100	21-167			

##### Matrix Spike (BGE0175-MS1)

Source: 2305084-01

Prepared: 05/05/23 Analyzed: 05/10/23

Benzene	38.2	1.0	ug/l	41.7	ND	91.7	34-141			
Toluene	39.9	1.0	"	41.7	ND	95.8	27-151			
Ethylbenzene	44.2	1.0	"	41.7	ND	106	29-160			
m,p-Xylene	98.3	2.0	"	83.3	ND	118	20-166			
o-Xylene	43.0	1.0	"	41.7	ND	103	33-159			
Naphthalene	52.2	1.0	"	41.7	ND	125	70-130			
1,2,4-Trimethylbenzene	52.3	1.0	"	41.7	ND	125	70-130			
1,3,5-Trimethylbenzene	50.8	1.0	"	41.7	ND	122	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		110	23-173			
Surrogate: Toluene-d8	13.3		"	13.3		99.5	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		98.8	21-167			

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 05/15/23 15:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BGE0175 - EPA 5030 Water MS**

Matrix Spike Dup (BGE0175-MSD1)	Source: 2305084-01			Prepared: 05/05/23 Analyzed: 05/10/23					
Benzene	37.4	1.0	ug/l	41.7	ND	89.7	34-141	2.22	30
Toluene	42.6	1.0	"	41.7	ND	102	27-151	6.54	30
Ethylbenzene	54.5	1.0	"	41.7	ND	131	29-160	20.9	30
m,p-Xylene	130	2.0	"	83.3	ND	156	20-166	27.9	30
o-Xylene	51.6	1.0	"	41.7	ND	124	33-159	18.2	30
Naphthalene	52.9	1.0	"	41.7	ND	127	70-130	1.41	30
1,2,4-Trimethylbenzene	52.2	1.0	"	41.7	ND	125	70-130	0.153	30
1,3,5-Trimethylbenzene	50.1	1.0	"	41.7	ND	120	70-130	1.27	30
Surrogate: 1,2-Dichloroethane-d4	16.0		"	13.3		120	23-173		
Surrogate: Toluene-d8	13.8		"	13.3		104	20-170		
Surrogate: 4-Bromofluorobenzene	10.8		"	13.3		80.9	21-167		

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 05/15/23 15:01

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch BGE0144 - General Preparation**

**Blank (BGE0144-BLK1)**

Prepared: 05/04/23 Analyzed: 05/05/23

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

**LCS (BGE0144-BS1)**

Prepared: 05/04/23 Analyzed: 05/05/23

Chloride	3.24	0.0600	mg/L	3.00	108	90-110		
Sulfate	15.9	0.300	"	15.0	106	90-110		

**Duplicate (BGE0144-DUP1)**

Source: 2305083-01

Prepared: 05/04/23 Analyzed: 05/05/23

Chloride	159	12.0	mg/L	181			12.7	20
Sulfate	1320	60.0	"	1430			8.28	20

**Matrix Spike (BGE0144-MS1)**

Source: 2305083-01

Prepared: 05/04/23 Analyzed: 05/05/23

Chloride	837	12.0	mg/L	600	181	109	80-120	
Sulfate	4440	60.0	"	3000	1430	100	80-120	

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 05/15/23 15:01

**Total Dissolved Solids by SM2540C - Quality Control**

**Summit Scientific**

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

**Batch BGE0152 - General Preparation**

**Blank (BGE0152-BLK1)**

Prepared & Analyzed: 05/04/23

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (BGE0152-DUP1)**

Source: 2305083-01

Prepared & Analyzed: 05/04/23

Total Dissolved Solids      1710      10.0      mg/L      1640      4.60      20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Cox PMC

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
05/15/23 15:01

### 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