

# **FOURTH QUARTER 2022 SITE MONITORING DATA**

**WERNING 7-2 (WH)**

**COGCC SPILL TRACKING # 479589  
COGCC REMEDIATION # 16540**



2115 117th Avenue  
Greeley, CO 80631

Prepared by:



6855 W. 119<sup>th</sup> Ave  
Broomfield, CO 80020

**TABLE 1**  
**GROUNDWATER ELEVATION DATA**  
**NOBLE ENERGY, INC. - Werning 7-2 WH**



Monitoring Well ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft. BTOC)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
BH01_WH	11/15/21	4665.18	14.72	3.59	ND	ND	4658.31
BH01_WH	03/09/22	4665.18	14.65	4.27	ND	ND	4657.63
BH01_WH	07/29/22	4665.18	14.68	2.73	ND	ND	4659.17
BH01_WH	10/27/22	4665.18	14.65	3.48	ND	ND	4658.42
BH02_WH	11/15/21	4665.20	14.84	3.40	ND	ND	4658.41
BH02_WH	03/09/22	4665.20	14.84	4.17	ND	ND	4657.64
BH02_WH	07/29/22	4665.20	14.84	2.62	ND	ND	4659.19
BH02_WH	10/27/22	4665.20	14.82	3.38	ND	ND	4658.43
BH03_WH	11/15/21	4665.40	14.89	3.66	ND	ND	4658.27
BH03_WH	03/09/22	4665.40	14.93	4.29	ND	ND	4657.64
BH03_WH	07/29/22	4665.40	14.86	2.78	ND	ND	4659.15
BH03_WH	10/27/22	4665.40	14.86	3.51	ND	ND	4658.42
BH04_WH	11/15/21	4665.22	14.83	3.29	ND	ND	4658.44
BH04_WH	03/09/22	4665.22	14.82	4.07	ND	ND	4657.66
BH04_WH	07/29/22	4665.22	14.83	2.56	ND	ND	4659.17
BH04_WH	10/27/22	4665.22	14.89	3.30	ND	ND	4658.43
BH05_WH	11/15/21	4665.23	14.90	3.56	ND	ND	4658.38
BH05_WH	03/09/22	4665.23	14.85	4.29	ND	ND	4657.65
BH05_WH	07/29/22	4665.23	14.81	2.74	ND	ND	4659.20
BH05_WH	10/27/22	4665.23	14.90	3.50	ND	ND	4658.44

**Notes:**

<sup>(1)</sup> Depth to water measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.

\* 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

**Definitions:**

ft. = Feet  
 AMSL = Above mean sea level  
 BTOC = Below top of casing  
 BGS = Below ground surface  
 LNAPL = Light non-aqueous phase liquid  
 ND = No LNAPL detected

**TABLE 2**  
**GROUNDWATER ANALYTICAL DATA**  
**NOBLE ENERGY, INC. - Werning 7-2 WH**

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)	TDS (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
COGCC Groundwater Standard <sup>(1)</sup>		5	560	700	1,400	140	67	67	<1.25 x Background	250 or <1.25 x Background	250 or <1.25 x Background
GW01	02/23/21	<1.0	<1.0	2.1	8.2	<1.0	150	51	NA	NA	NA
BH01_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	937	27.6	131
BH01_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	928	108	191
BH01_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,110	117	199
BH01_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	814	105	123
BH02_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	889	51.4	173
BH02_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	855	92.0	99.2
BH02_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,040	124	210
BH02_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	805	122	175
BH03_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	892	166	388
BH03_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	832	97.8	137
BH03_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	990	115	235
BH03_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	800	103	135
BH04_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	841	153	364
BH04_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	844	107	142
BH04_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	913	106	215
BH04_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	791	105	133
<sup>(2)</sup> BH05_WH	11/15/21	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	879	16.4	99.0
<sup>(2)</sup> BH05_WH	03/09/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	832	106	136
<sup>(2)</sup> BH05_WH	07/29/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	953	106	220
<sup>(2)</sup> BH05_WH	10/27/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	796	117	151

**Notes:**

<sup>(1)</sup> Groundwater standards referenced from 2 CCR 404-1, Table 915-1 (January 15, 2021).

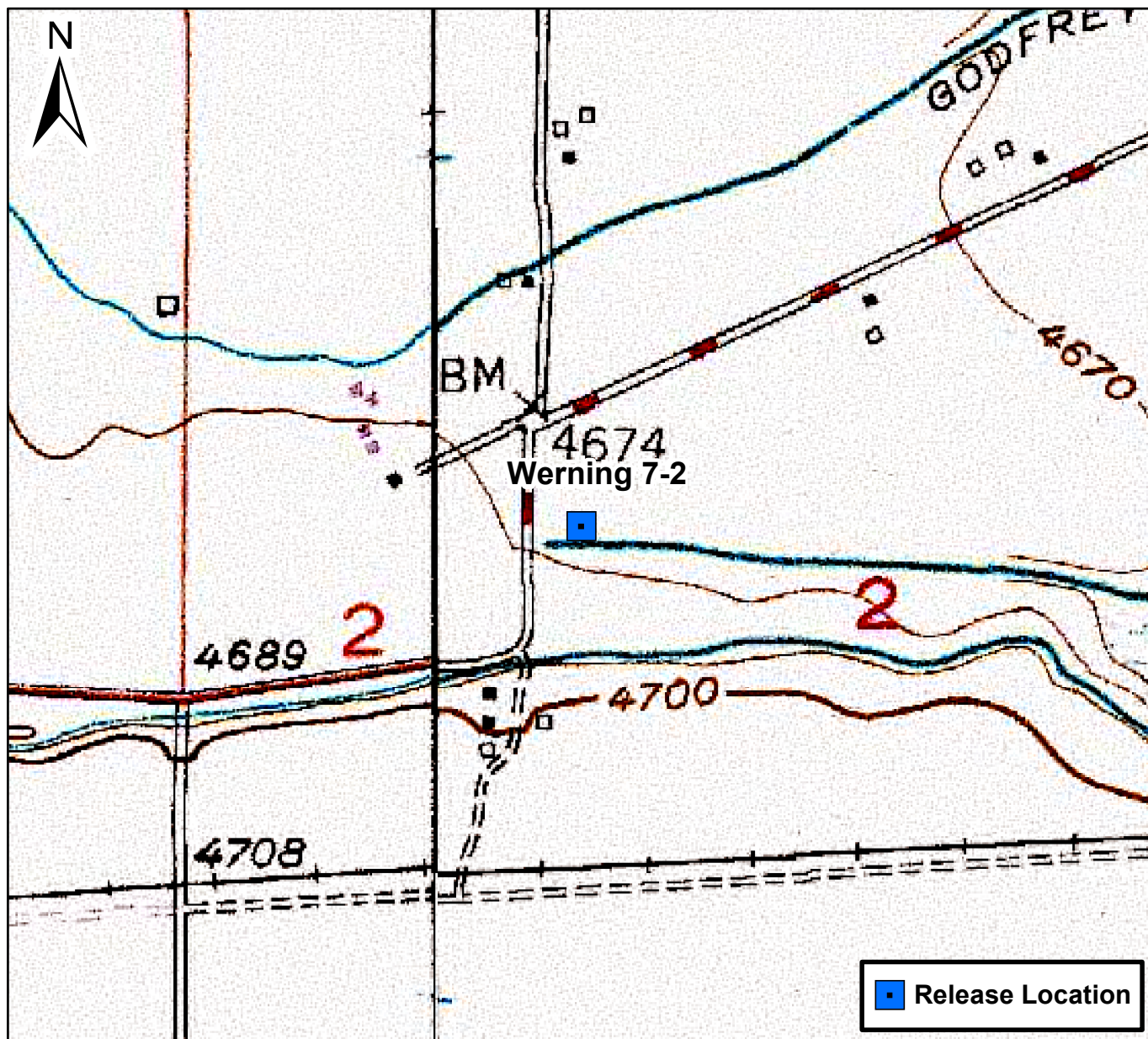
<sup>(2)</sup> Monitoring well used to calculate inorganic background standards.

**Definitions:**

< = Analytical result is less than the indicated laboratory reporting limit  
COGCC = Colorado Oil and Gas Conservation Commission  
µg/L = Micrograms per liter  
mg/L = Milligrams per liter  
NA = Not analyzed  
1,2,4 - TMB = 1,2,4 Trimethylbenzene  
1,3,5 - TMB = 1,3,5 Trimethylbenzene  
TDS = Total Dissolved Solids

**Highlighted results are equal to or exceed the COGCC Table 915-1 standard**

**Bold results exceed the COGCC Table 915-1 standard for groundwater inorganic parameters, site-specific background assessment is on-going for groundwater inorganic constituents.**



0 750 1,500 Feet

## Figure 1

Site Location Map  
Werning 7-2  
SWNE S2 T4N R66W  
Weld County, Colorado







DATE:	07/20/2022
DESIGNED BY:	JW
DRAWN BY:	DQ



**TASMAN**  
GEOSCIENCES

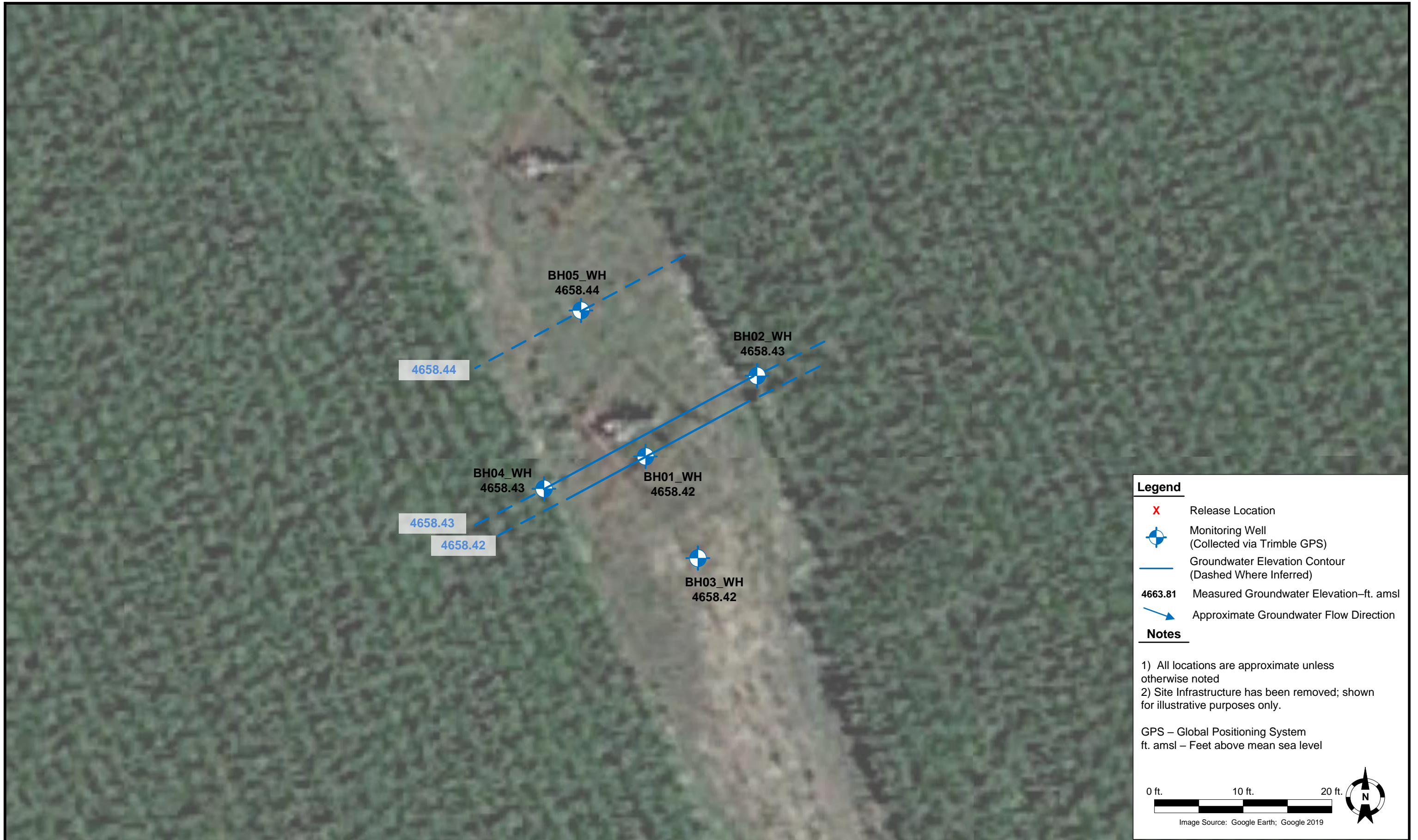
Tasman Geosciences, Inc.  
6855 W 119<sup>th</sup> Avenue  
Broomfield, CO 80020


**Noble Energy, Inc. – DJ Basin**  
**Werning 7-2**  
SWNE, Section 2, Township 4 North, Range 66 West  
Weld County, Colorado

Site Overview Map

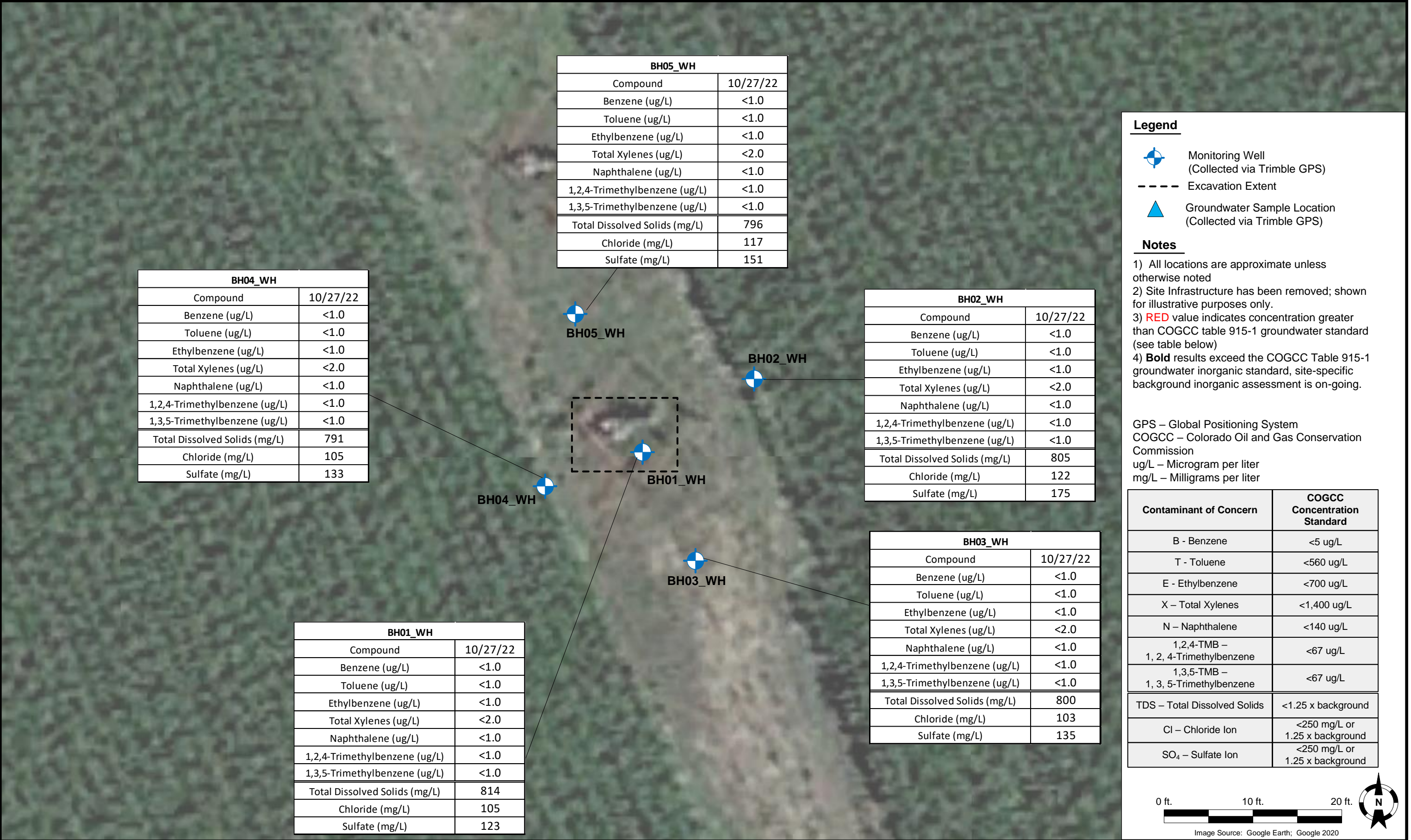
**FIGURE**  
**2**





DATE:	01/25/2023	 <b>TASMAN</b> Tasman, Inc. 6855 W 119 <sup>th</sup> Ave. Broomfield, CO 80020	<b>Noble Energy, Inc. – DJ Basin</b> <b>Werning 7-2</b> SENW, Section 2, Township 4 North, Range 66 West Weld County, Colorado	Groundwater Potentiometric Surface Contour Map (10/27/2022)	FIGURE 3
DESIGNED BY:	JW				
DRAWN BY:	MK				





# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 03, 2022

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Werning 7-2 WH

Work Order #2210531

Enclosed are the results of analyses for samples received by Summit Scientific on 10/27/22 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President





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

Project: Noble - Werning 7-2 WH

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01_WH	2210531-01	Water	10/27/22 13:58	10/27/22 17:10
BH02_WH	2210531-02	Water	10/27/22 13:36	10/27/22 17:10
BH03_WH	2210531-03	Water	10/27/22 13:47	10/27/22 17:10
BH04_WH	2210531-04	Water	10/27/22 13:46	10/27/22 17:10
BH05_WH	2210531-05	Water	10/27/22 13:35	10/27/22 17:10

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.*

# Summit Scientific

S<sub>2</sub>

2210531

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

Page 1 of 1

Client: Noble / Tasman Geoscience

Project Manager: Jake Whritenour

Address: 6855 W. 119th Ave.

E-Mail: Jwhritenour@tasman-geo.com

City/State/Zip: Broomfield / CO / 80020

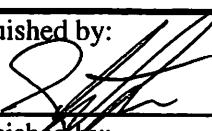
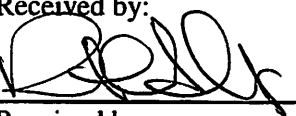
Phone: 303-487-1228

Project Name: Werning 7-2 WH

Sampler Name: Patrick Kline

Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested							Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride	Sulfate	
1	BH01-WH	10/27/22	1338	4	3					X				X	X	X	X	X	X	
2	BH02-WH		1336																	
3	BH03-WH		1347																	
4	BH04-WH		1346																	
5	BH05-WH		1335																	
6																				
7																				
8																				
9																				
10																				

Relinquished by: 	Date/Time: 10/27/22 1600	Received by: Tasman's Lock Box	Date/Time: 10/27/22 1600	<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: 63 Samples Intact: <input checked="" type="checkbox"/> Yes No	<b>Notes:</b>
Relinquished by: Tasman's Lock Box	Date/Time: 10/27/22 1710	Received by: 	Date/Time: 10/27/22 1710		
Relinquished by:	Date/Time:	Received by:	Date/Time:		



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2210231

Client: Noble/Tasman Geoscience Client Project ID: Werning 7-2 WHShipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☒ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☐ Water ☒ Other ☐Temp (°C) 6.3Thermometer # ☐

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> 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? <sup>(1)</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	
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? <b>If yes, contact client and note in narrative.</b>	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Custodian Printed Name

Date/Time

10-27-22 1716



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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

**BH01\_WH**  
**2210531-01 (Water)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		86.9 %	21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chloride	<b>105</b>	12.0	mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	<b>123</b>	60.0	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/27/22 13:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Total Dissolved Solids	<b>814</b>	10.0	mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

Summit Scientific

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

**BH02\_WH**  
**2210531-02 (Water)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		102 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		71.0 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	122	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	175	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/27/22 13:36**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	805	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

Summit Scientific

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

**BH03\_WH**  
**2210531-03 (Water)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		101 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		76.1 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>103</b>	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	<b>135</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/27/22 13:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>800</b>	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	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.





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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

**BH04\_WH**  
**2210531-04 (Water)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		99.8 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		107 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		80.0 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>105</b>	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	<b>133</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/27/22 13:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	<b>791</b>	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

Summit Scientific

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

**BH05\_WH**  
**2210531-05 (Water)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFJ0821	10/28/22	10/29/22	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: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		91.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		61.5 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	117	12.0		mg/L	200	BFJ0805	10/28/22	10/29/22	EPA 300.0	
Sulfate	151	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **10/27/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Total Dissolved Solids	796	10.0		mg/L	1	BFJ0804	10/28/22	10/28/22	SM2540C	

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

## 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 BFJ0821 - EPA 5030 Water MS

##### Blank (BFJ0821-BLK1)

Prepared: 10/28/22 Analyzed: 10/29/22

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	15.7		"	13.3		118	20-170			
Surrogate: 4-Bromofluorobenzene	10.4		"	13.3		78.0	21-167			

##### LCS (BFJ0821-BS1)

Prepared: 10/28/22 Analyzed: 10/29/22

Benzene	30.7	1.0	ug/l	41.7		73.6	51-132			
Toluene	39.8	1.0	"	41.7		95.4	51-138			
Ethylbenzene	39.2	1.0	"	41.7		94.2	58-146			
m,p-Xylene	81.7	2.0	"	83.3		98.1	57-144			
o-Xylene	40.6	1.0	"	41.7		97.5	53-146			
Naphthalene	30.9	1.0	"	41.7		74.2	70-130			
1,2,4-Trimethylbenzene	40.8	1.0	"	41.7		98.0	70-130			
1,3,5-Trimethylbenzene	44.0	1.0	"	41.7		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.9		"	13.3		96.7	23-173			
Surrogate: Toluene-d8	13.5		"	13.3		101	20-170			
Surrogate: 4-Bromofluorobenzene	11.5		"	13.3		86.0	21-167			

##### Matrix Spike (BFJ0821-MS1)

Source: 2210480-01

Prepared: 10/28/22 Analyzed: 10/29/22

Benzene	28.5	1.0	ug/l	41.7	ND	68.4	34-141			
Toluene	41.0	1.0	"	41.7	ND	98.5	27-151			
Ethylbenzene	39.4	1.0	"	41.7	ND	94.5	29-160			
m,p-Xylene	82.5	2.0	"	83.3	ND	99.0	20-166			
o-Xylene	41.6	1.0	"	41.7	ND	99.7	33-159			
Naphthalene	36.6	1.0	"	41.7	ND	87.8	70-130			
1,2,4-Trimethylbenzene	41.6	1.0	"	41.7	ND	99.7	70-130			
1,3,5-Trimethylbenzene	45.1	1.0	"	41.7	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.0		"	13.3		90.1	23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102	20-170			
Surrogate: 4-Bromofluorobenzene	11.6		"	13.3		86.9	21-167			

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

## 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 BFJ0821 - EPA 5030 Water MS

##### Matrix Spike Dup (BFJ0821-MSD1)

Source: 2210480-01

Prepared: 10/28/22 Analyzed: 10/29/22

Benzene	31.5	1.0	ug/l	41.7	ND	75.5	34-141	9.83	30	
Toluene	43.2	1.0	"	41.7	ND	104	27-151	5.10	30	
Ethylbenzene	39.5	1.0	"	41.7	ND	94.8	29-160	0.254	30	
m,p-Xylene	83.2	2.0	"	83.3	ND	99.8	20-166	0.869	30	
o-Xylene	41.3	1.0	"	41.7	ND	99.1	33-159	0.579	30	
Naphthalene	40.1	1.0	"	41.7	ND	96.3	70-130	9.20	30	
1,2,4-Trimethylbenzene	41.9	1.0	"	41.7	ND	101	70-130	0.767	30	
1,3,5-Trimethylbenzene	45.0	1.0	"	41.7	ND	108	70-130	0.222	30	
Surrogate: 1,2-Dichloroethane-d4	14.3		"	13.3		107	23-173			
Surrogate: Toluene-d8	13.8		"	13.3		104	20-170			
Surrogate: 4-Bromofluorobenzene	11.5		"	13.3		86.5	21-167			

Summit Scientific

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

### Anions by EPA Method 300.0 - Quality Control

#### Summit Scientific

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

#### Batch BFJ0805 - General Preparation

##### Blank (BFJ0805-BLK1)

Prepared: 10/28/22 Analyzed: 11/02/22

Chloride	ND	0.0600	mg/L
Sulfate	ND	0.300	"

##### LCS (BFJ0805-BS1)

Prepared: 10/28/22 Analyzed: 11/02/22

Chloride	2.89	0.0600	mg/L	3.00	96.5	90-110
Sulfate	14.3	0.300	"	15.0	95.6	90-110

##### Duplicate (BFJ0805-DUP1)

Source: 2210511-04

Prepared & Analyzed: 10/28/22

Chloride	120	12.0	mg/L	110	8.89	20
Sulfate	895	60.0	"	740	19.0	20

##### Matrix Spike (BFJ0805-MS1)

Source: 2210511-04

Prepared & Analyzed: 10/28/22

Chloride	712	12.0	mg/L	600	110	100	80-120
Sulfate	3850	60.0	"	3000	740	104	80-120

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

Project: Noble - Werning 7-2 WH

Project Number: [none]

Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

### 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 BFJ0804 - General Preparation

##### Blank (BFJ0804-BLK1)

Prepared & Analyzed: 10/28/22

Total Dissolved Solids ND 10.0 mg/L

##### Duplicate (BFJ0804-DUP1)

Source: 2210531-01

Prepared & Analyzed: 10/28/22

Total Dissolved Solids 818 10.0 mg/L 814 0.527 20

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

Project: Noble - Werning 7-2 WH

Project Number: [none]  
Project Manager: Jacob Whritenour

**Reported:**  
11/03/22 10:11

### 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