

# FREMONT ENVIRONMENTAL INC.

July 21, 2022

Ms. Erica Zuniga  
Noble Energy Inc.  
2115 117<sup>th</sup> Ave,  
Greeley, CO 80634

Subject:       **Excavation Report**  
Kummer PC LE 23-99HZ  
API # 05-123-32789  
NWNW Sec. 23, T8N, R61W  
Weld County, Colorado  
Fremont Project No. C022-052  
Facility #421018, Remediation #22346

Dear Ms. Zuniga:

Enclosed please find a copy of the above referenced Excavation Report for the Kummer PC LE 23-99HZ site in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

As shown in the attached report, soils achieved the COGCC Table 915-1 concentration levels for organic petroleum constituents. However, elevated levels of inorganics remain in situ and will be addressed in the Kummer PC LE 23-99HZ site reclamation plan.

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.**



Paul V. Henahan, P.E.  
Senior Consultant

Enclosure

**EXCAVATION REPORT**

**NOBLE ENERGY INC.**

**KUMMER PC LE 23-99HZ**

**WELD COUNTY, COLORADO**

**FREMONT PROJECT NO. C022-052**

**FACILITY #421018, REMEDIATION #22346**

**Prepared by:**

**Fremont Environmental Inc.**

**1759 Redwing Lane**

**Broomfield, CO 80020**

**(303) 956-8714**

**July 21, 2022**

## TABLE OF CONTENTS

1.0 INTRODUCTION .....	1
2.0 BACKGROUND INFORMATION .....	1
2.1 Site Location .....	1
2.2 Site History .....	1
3.0 FIELD ACTIVITIES .....	2
3.1 Soil Excavation and Sampling.....	2
4.0 DISCUSSION .....	3
5.0 REMARKS.....	3

### Table

Table 1: Summary of Volatile Organic Soil Chemistry Data

### Figures

Figure 1: Site Location Map

Figure 2: Site Map

Figure 3: Soil and Groundwater Chemistry Map

### Appendices

Appendix A: Photo Log

Appendix B: Laboratory Documentation

**EXCAVATION REPORT**  
**NOBLE ENERGY INC.**  
**KUMMER PC LE 23-99HZ**  
**WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-052**  
**FACILITY #421018, REMEDIATION #22346**

**1.0 INTRODUCTION**

The purpose of this document is to present information collected during the single-day excavation of petroleum-impacted soil at the Kummer PC LE 23-99HZ (Kummer) former heater treater location in Weld County, Colorado. This excavation project was completed on June 3, 2022.

**2.0 BACKGROUND INFORMATION**

**2.1 Site Location**

The Kummer PC LE 23-99HZ site is located approximately 6.4 miles southwest of Keota, Colorado in Weld County as shown on Figure 1. The site is located in an agricultural area approximately 1.3 miles northwest of the intersection of Colorado State Highway 14 and County Road 95. The location is further described as the NW  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Section 23, Township 8N, Range 61W.

**2.2 Site History**

The site's excavation area consisted of the former Kummer PC LE 23-99HZ heater treater location. The Kummer PC LE 23-99HZ well was drilled in 2011 to a vertical depth of approximately 6,495 feet. Soil impacts from a historical release at the Kummer heater treater were identified following its abandonment resulting in a comprehensive excavation of the soils directly beneath and adjacent to the release location.

### **3.0 FIELD ACTIVITIES**

#### **3.1 Soil Excavation and Sampling**

Remediation efforts consisted of the excavation and removal of petroleum-impacted soil at and adjacent to the former Kummer heater treater location. The soil consisted of road base which was underlain by silty sand and clay that extends to a depth of at least one foot. Groundwater was not encountered in the excavation. The 8'x25'x1' deep excavation is shown on Figure 2.

The single-day excavation was completed at the Kummer heater treater location on June 3, 2022. Soil samples collected from the excavation were collected as grab samples at a depth of 0.5 feet below ground surface.

The soil samples were analyzed by Summit Scientific Inc. of Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, Total Petroleum Hydrocarbons - Gasoline Range Organics (TPH-GRO) by EPA method 8260B, TPH - Diesel Range Organics (TPH-DRO), Extended Range Organics (TPH-ORO) by EPA method 8015. The laboratory report and chain-of-custody documentation are included in Appendix B.

A summary of the laboratory data for the soil samples is included in Tables 1 through 4. The laboratory analyses indicated that organic petroleum constituents in soil samples collected from the excavation achieved the COGCC Table 915-1 standards.

A total of approximately 7 cubic yards of petroleum impacted soil was removed via excavation by 4X Industrial Services Inc. from the former facility. Impacted soil was disposed of at the North Weld Landfill in Ault, Colorado, as non-hazardous waste.

#### **4.0 DISCUSSION**

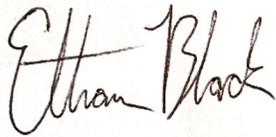
As demonstrated by the soil sampling, organic petroleum impacts were removed from the soils at the former Kummer heater treater location by excavation. This was confirmed by the analyses of the soil samples collected from within the excavation which were below the COGCC Table 915-1 standards for organic petroleum constituents upon completion of the excavation. Approximately 7 cubic yards of impacted soil was removed and transported to the landfill.

Noble should request a no further action designation for the Kummer site. Additionally, should Noble request to leave elevated inorganics in situ by providing a detailed reclamation plan in accordance with COGCC Rule 915.b.

#### **5.0 REMARKS**

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



7/21/22

Date \_\_\_\_\_

\_\_\_\_\_  
Ethan D. Black, P.G.

Geologist

Reviewed by:



7/21/22

Date \_\_\_\_\_

\_\_\_\_\_  
Paul V. Henehan, P.E.

Senior Consultant

**TABLE**

**TABLE 1**  
**SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**KUMMER PC LE 23-99HZ, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C022-052**

Sample	Depth (ft)	Date Sampled	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
AST-N Surface	0.1	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
AST-Cen Surface	0.1	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
AST-S Surface	0.1	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWV-N Wall 4 Ft	4	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWV-N Floor 5 Ft	5	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
PWV-S Surface	0.1	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
Heater Treater Surface	0.1	5/11/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<b>&lt;0.50</b>	<b>510</b>	<b>110</b>
E Floor 0.5 Ft	0.5	6/3/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W Floor 0.5 Ft	0.5	6/3/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500	500	500
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500*	500*	500*

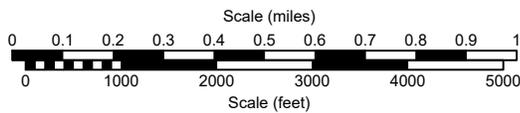
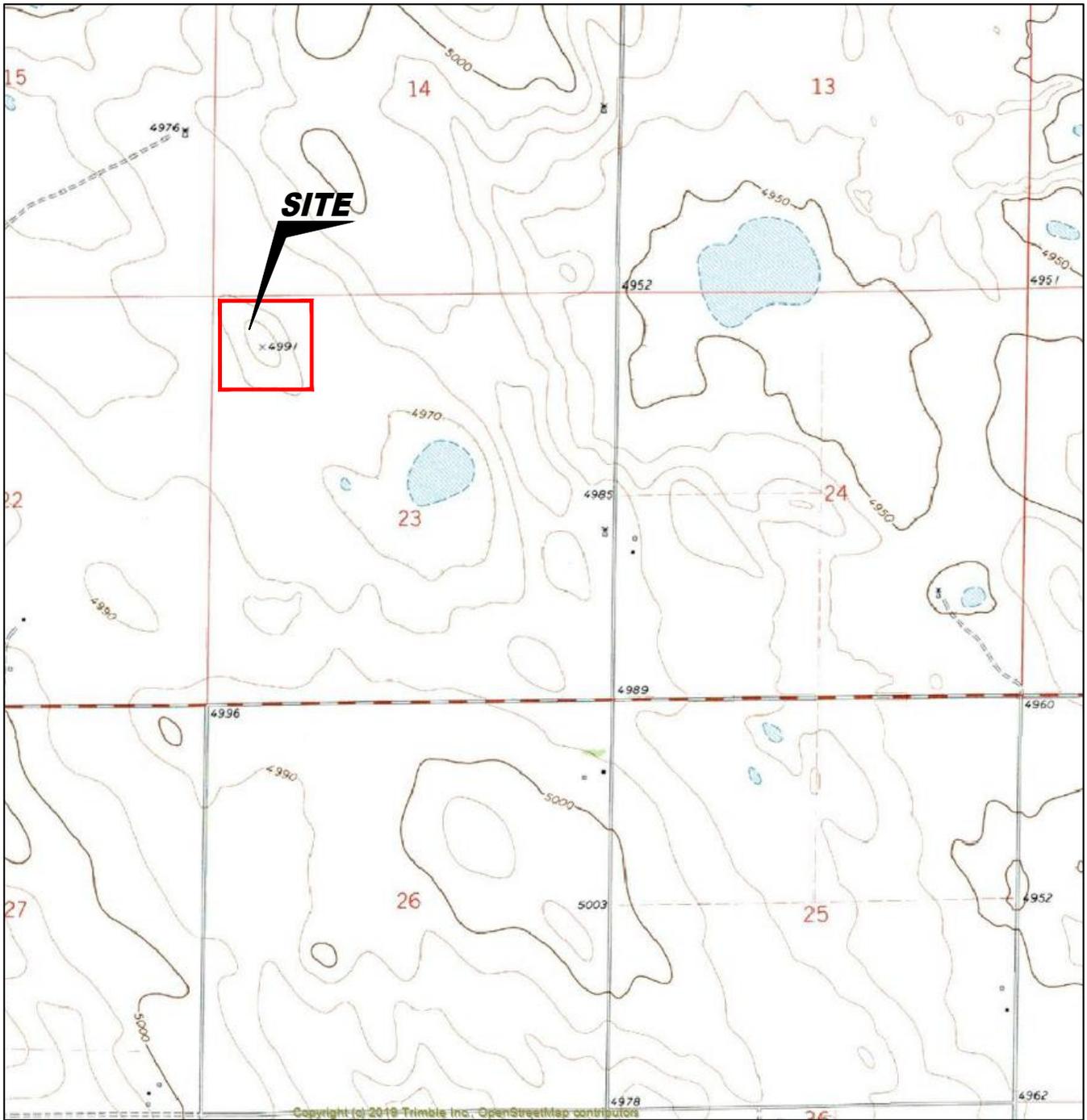
Bold faced values exceed the COGCC Table 915-1 concentrations

Blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

\* Summation of GRO+DRO+ORO must be less than 500 mg/kg

NA - Not analyzed

## FIGURES



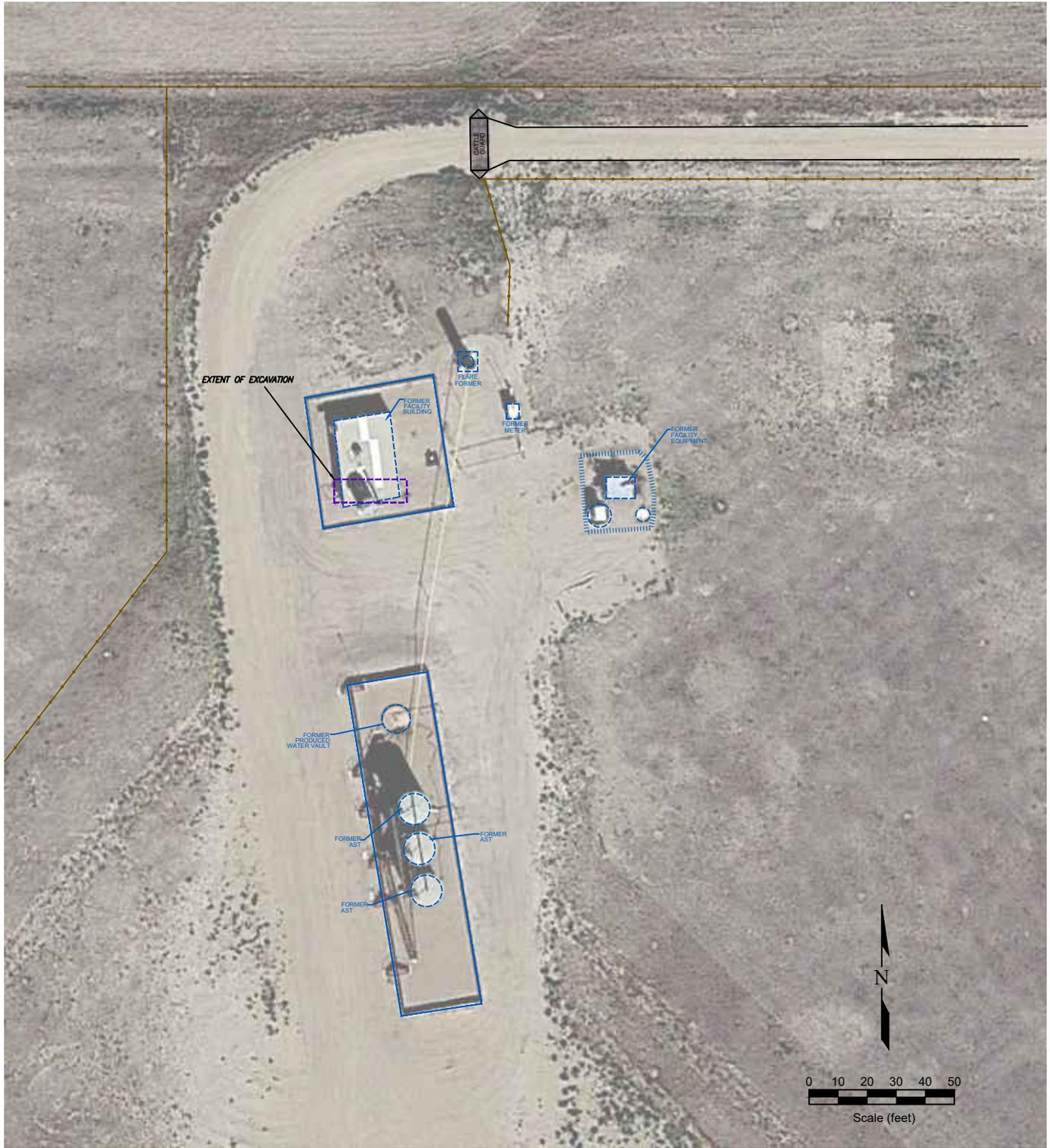
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
**SITE LOCATION MAP**

**Noble Energy, Inc.**  
**Kummer PC LE 23-99HZ Pad**  
 NWNW Sec. 23, T8N, R61W, 6th PM  
 Weld County, Colorado  
 40.654149°, -104.180183°

Project # <b>C022-052</b>	API # <b>05-123-32789</b>	Facility # <b>421018</b>
Date <b>5/24/22</b>	Remediation #	Filename <b>22052T</b>





**LEGEND**

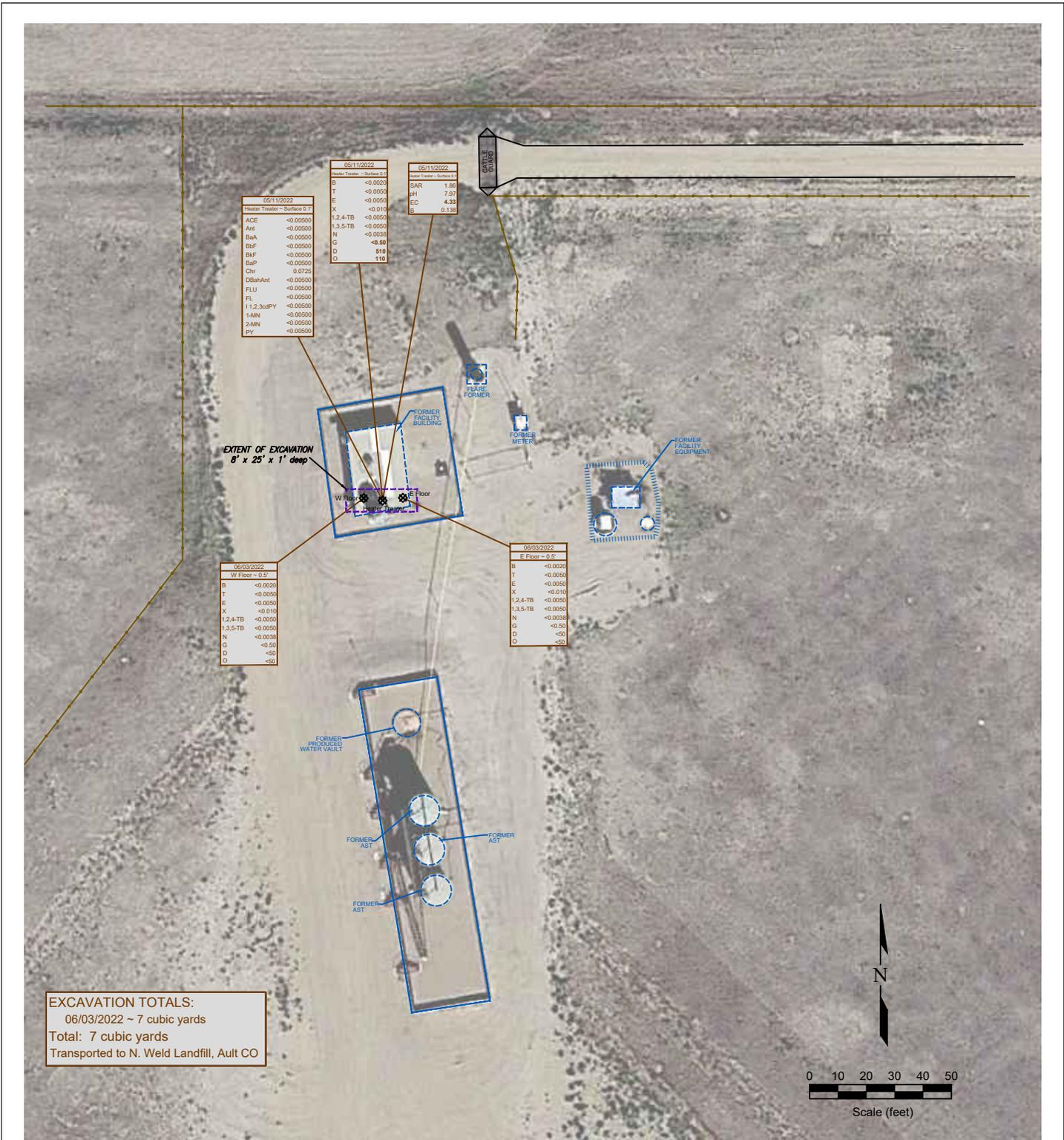
- ABOVE GROUND STORAGE TANK
- BUILDING
- FORMER BUILDING
- FORMER FACILITY
- FORMER FACILITY
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- FENCE LINE

**Figure 2  
SITE MAP**

**Noble Energy, Inc.**  
**Kummer PC LE 23-99HZ Pad**  
 NWNW Sec. 23, T8N, R61W, 6th PM  
 Weld County, Colorado  
 40.654149°, -104.180183°

Project No. <b>C022-052</b>	API # <b>05-123-32789</b>	Facility # <b>421018</b>
Date <b>7/20/22</b>	Remediation #	Filename <b>22052Q</b>





**EXCAVATION TOTALS:**  
 06/03/2022 ~ 7 cubic yards  
 Total: 7 cubic yards  
 Transported to N. Weld Landfill, Ault CO

**LEGEND**

05/11/2022 AST-N - Surface 0.1'	DATE SAMPLED SAMPLE ID and DEPTH (ft)	05/11/2022 AST-N - Surface 0.1'	DATE SAMPLED SAMPLE ID and DEPTH (ft)
ACE	<0.00500	B	<0.00200
Ant	<0.00500	T	<0.00500
BaA	<0.00500	E	<0.00500
BaP	<0.00500	X	<0.010
BkF	<0.00500	1,2,4-TB	<0.00500
BaP	<0.00500	1,3,5-TB	<0.00500
Chr	0.0725	N	<0.0038
DBahAnt	<0.00500	G	<0.50
FLU	<0.00500	D	<50
FL	<0.00500	O	<50
1,1,2,3,4dPY	<0.00500		
1-MN	<0.00500		
2-MN	<0.00500		
PY	<0.00500		

05/11/2022 AST-N - Surface 0.1'	DATE SAMPLED SAMPLE ID and DEPTH (ft)	05/11/2022 AST-N - Surface 0.1'	DATE SAMPLED SAMPLE ID and DEPTH (ft)
B	<0.00200	BENZENE (mg/kg)	
T	<0.00500	TOLUENE (mg/kg)	
E	<0.00500	ETHYL BENZENE (mg/kg)	
X	<0.010	TOTAL XYLENES (mg/kg)	
1,2,4-TB	<0.00500	1,2,4-TRIMETHYLBENZENE (mg/kg)	
1,3,5-TB	<0.00500	1,3,5-TRIMETHYLBENZENE (mg/kg)	
N	<0.0038	NAPHTHALENE (mg/kg)	
G	<0.50	TPH-GRO (mg/kg)	
D	<50	TPH-ORO (mg/kg)	
O	<50	TPH-ORO (mg/kg)	

05/11/2022 AST-N - Surface 0.1'	DATE SAMPLED SAMPLE ID and DEPTH (ft)
SAR	1.72
pH	7.97
EC	1.68
B	0.0985

**Figure 3**  
**SOIL CHEMISTRY MAP**  
 May 11, 2022; June 3, 2022  
 Noble Energy, Inc.  
 Kummer PC LE 23-99HZ Pad  
 NWNW Sec. 23, T8N, R61W, 6th PM  
 Weld County, Colorado  
 40.654149°, -104.180183°

Project No. <b>C022-052</b>	API # <b>05-123-32789</b>	Facility # <b>421018</b>
Date <b>7/21/22</b>	Remediation #	Filename <b>22052Q</b>

**APPENDIX A**

**PHOTO LOG**



**1 – Kummer PC LE 23-99HZ former heater treater location**



**2 – Kummer PC LE 23-99HZ former heater treater excavation, looking east**

**APPENDIX B**

**LABORATORY DOCUMENTATION**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 05, 2022

Paul Henehan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549  
RE: Noble - Kummer

Enclosed are the results of analyses for samples received by Summit Scientific on 06/03/22 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS', with a long, sweeping horizontal line extending to the right.

Ben Shrewsbury  
Laboratory Manager



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Kummer

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
06/05/22 19:53

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E Floor 0.5FT	2206067-01	Soil	06/03/22 00:00	06/03/22 15:00
W Floor 0.5FT	2206067-02	Soil	06/03/22 00:00	06/03/22 15:00

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>

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

- 2206067

Client: FREMONT Env.

Project Manager: Henehan

Page 1 of 1

Address: \_\_\_\_\_ E-Mail: ethanh paulh on file

City/State/Zip: \_\_\_\_\_ Bill To: Dan / Erica

Phone: \_\_\_\_\_ Project Name: Noble - Kummer

Sampler Name: Black Project Number: \_\_\_\_\_

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					
1	E FLOOR 0.5 FT	6/3/22		2													
2	W FLOOR 0.5 FT	L		1			X			X				X	X		
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished by: <u>[Signature]</u>	Date/Time: <u>6/3/22</u>	Received by: <u>[Signature]</u>	Date/Time: <u>0322 1500</u>	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours <u>X</u> Standard _____ 48 hours _____	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: <u>7.4</u>	Corrected Temperature <u>7.4</u>	HNO <sub>3</sub> lot # _____		Sample Integrity:	
IR gun correction: <u>0</u>	IR gun #: <u>1</u>			Samples Intact: <u>Yes</u> No _____	

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2206067

Client: Fremont Client Project ID: Noble-Kummer

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

Grid for shipping information

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

Temp (°C) 74 Thermometer # 1

Table with 5 columns: Yes, No, N/A, Comments (if any). Rows include questions about cooling, sample integrity, volume, custody seals, 48-hour rule, short hold times, COC form, sample IDs, volatiles, preservation, pH, and field filtering.

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

Custodian Printed Name

Date/Time



Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Kummer

Project Number: [none]  
 Project Manager: Paul Henehan

**Reported:**  
 06/05/22 19:53

**E Floor 0.5FT**  
**2206067-01 (Soil)**

Summit Scientific

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

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFF0109	06/03/22	06/04/22	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: **06/03/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		61.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		96.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFF0110	06/03/22	06/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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 - Kummer

Project Number: [none]  
 Project Manager: Paul Henehan

**Reported:**  
 06/05/22 19:53

**W Floor 0.5FT**  
**2206067-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFF0109	06/03/22	06/04/22	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: **06/03/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		65.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.2 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFF0110	06/03/22	06/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/03/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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 - Kummer

Project Number: [none]  
Project Manager: Paul Henehan

Reported:  
06/05/22 19:53

### 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 BFF0109 - EPA 5030 Soil MS

##### Blank (BFF0109-BLK1)

Prepared: 06/03/22 Analyzed: 06/04/22

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0248</i>		<i>"</i>	<i>0.0400</i>		<i>62.1</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0349</i>		<i>"</i>	<i>0.0400</i>		<i>87.2</i>	<i>50-150</i>				

##### LCS (BFF0109-BS1)

Prepared: 06/03/22 Analyzed: 06/04/22

Benzene	0.0566	0.0020	mg/kg	0.0750		75.4	70-130				
Toluene	0.0572	0.0050	"	0.0750		76.2	70-130				
Ethylbenzene	0.0701	0.0050	"	0.0750		93.5	70-130				
m,p-Xylene	0.151	0.010	"	0.150		101	70-130				
o-Xylene	0.0656	0.0050	"	0.0750		87.4	70-130				
1,2,4-Trimethylbenzene	0.0673	0.0050	"	0.0750		89.7	70-130				
1,3,5-Trimethylbenzene	0.0721	0.0050	"	0.0750		96.2	70-130				
Naphthalene	0.0527	0.0038	"	0.0750		70.3	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0237</i>		<i>"</i>	<i>0.0400</i>		<i>59.3</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0347</i>		<i>"</i>	<i>0.0400</i>		<i>86.8</i>	<i>50-150</i>				

##### Matrix Spike (BFF0109-MS1)

Source: 2206063-02

Prepared: 06/03/22 Analyzed: 06/04/22

Benzene	0.0592	0.0020	mg/kg	0.0750	0.00636	70.4	70-130				
Toluene	0.0644	0.0050	"	0.0750	ND	85.9	70-130				
Ethylbenzene	0.0706	0.0050	"	0.0750	0.229	NR	70-130				QM-07
m,p-Xylene	0.150	0.010	"	0.150	0.252	NR	70-130				QM-07
o-Xylene	0.0640	0.0050	"	0.0750	ND	85.3	70-130				
1,2,4-Trimethylbenzene	0.167	0.0050	"	0.0750	1.02	NR	70-130				QM-07
1,3,5-Trimethylbenzene	0.0465	0.0050	"	0.0750	0.530	NR	70-130				QM-07
Naphthalene	0.0647	0.0038	"	0.0750	0.189	NR	70-130				QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0250</i>		<i>"</i>	<i>0.0400</i>		<i>62.6</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0354</i>		<i>"</i>	<i>0.0400</i>		<i>88.6</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.394</i>		<i>"</i>	<i>0.0400</i>		<i>985</i>	<i>50-150</i>				S-02

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Kummer

Project Number: [none]  
 Project Manager: Paul Henehan

**Reported:**  
 06/05/22 19:53

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

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

**Batch BFF0109 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BFF0109-MSD1)</b>	<b>Source: 2206063-02</b>			<b>Prepared: 06/03/22 Analyzed: 06/04/22</b>						
Benzene	0.0603	0.0020	mg/kg	0.0750	0.00636	72.0	70-130	1.96	30	
Toluene	0.0632	0.0050	"	0.0750	ND	84.3	70-130	1.93	30	
Ethylbenzene	0.0726	0.0050	"	0.0750	0.229	NR	70-130	2.85	30	QM-07
m,p-Xylene	0.146	0.010	"	0.150	0.252	NR	70-130	2.90	30	QM-07
o-Xylene	0.0618	0.0050	"	0.0750	ND	82.4	70-130	3.39	30	
1,2,4-Trimethylbenzene	0.158	0.0050	"	0.0750	1.02	NR	70-130	5.54	30	QM-07
1,3,5-Trimethylbenzene	0.0406	0.0050	"	0.0750	0.530	NR	70-130	13.6	30	QM-07
Naphthalene	0.0512	0.0038	"	0.0750	0.189	NR	70-130	23.3	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0287</i>		<i>"</i>	<i>0.0400</i>		<i>71.8</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0363</i>		<i>"</i>	<i>0.0400</i>		<i>90.7</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.431</i>		<i>"</i>	<i>0.0400</i>		<i>NR</i>	<i>50-150</i>			<i>S-02</i>

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Kummer

Project Number: [none]  
 Project Manager: Paul Henehan

**Reported:**  
 06/05/22 19:53

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BFF0110 - EPA 3550A**

**Blank (BFF0110-BLK1)**

Prepared: 06/03/22 Analyzed: 06/04/22

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								

**LCS (BFF0110-BS1)**

Prepared: 06/03/22 Analyzed: 06/04/22

C10-C28 (DRO)	466	50	mg/kg	500	1400	93.3	70-130				
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**Matrix Spike (BFF0110-MS1)**

Source: 2206063-02

Prepared: 06/03/22 Analyzed: 06/04/22

C10-C28 (DRO)	1280	50	mg/kg	500	1400	NR	70-130				QM-07
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**Matrix Spike Dup (BFF0110-MSD1)**

Source: 2206063-02

Prepared: 06/03/22 Analyzed: 06/04/22

C10-C28 (DRO)	1230	50	mg/kg	500	1400	NR	70-130	3.88	20		QM-07
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Kummer

Project Number: [none]  
Project Manager: Paul Henehan

**Reported:**  
06/05/22 19:53

### Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference