FREMONT ENVIRONMENTAL INC.

August 2, 2023

Mr. Dan Peterson
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80634

Subject: **Flowline Closure Data Submittal**
HSR Cutler 14-31 Flowline
API # 05-123-15168
SESW Sec. 31, T4N, R65W
Weld County, Colorado
Fremont Project No. C023-112
Remediation # 27651

Dear Mr. Peterson:

As requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline abandonment activities at the Noble Energy Inc. (Noble) HSR Cutler 14-31 Flowline. Details of the flowline abandonment activities are documented in the attached Closure Report. Groundwater was not encountered during decommissioning activities.

Please contact me at (970) 213-7488 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.

Chris Lattes
Consultant

Attachments:
- Figures
- Tables
- Flowline Closure Checklist
- Photos
- Laboratory Reports

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

Flowline Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure

Site Name & COGCC Facility Number:	*Date:*	*Remediation Project #:*
HSR-CUTLER 14-31	4/21/23 & 4/24/23	27651
Associated Wells:	*Age of Site:*	*Number of Photos Attached:*
05-123-15168	Unknown	See attached

Starting point: *(GPS coordinates and descriptions)*
40.263485, -104.708590

End point: *(GPS coordinates and descriptions)*
40.265392, -104.710479

USCS Soil Type: Sand (SP) | *Estimated Depth to Groundwater:* Unknown

Hydrocarbon Impacted Soils / Spills: *(Note estimated size and if impact appears to be surficial or extends to an unknown depth)*

No observed hydrocarbon impacted soil or spills.

Salt Crusted Soils or Impacted Vegetation: *(Note estimated size and if impact appears to be surficial or extends to an unknown depth)*

No observed salt crusted soil or impacted vegetation.

Flowlines

Flowline type	Wellhead line							
Depth	4-6 feet							
Age	Unknown							
Length	878							
Construction Material	2" steel							
Were flowlines pulled?	Yes							
Visual Integrity of lines	Good							
Visual impacts if trenched	None observed							
PID Readings if trenched	0.5 to 1 ppm							
Sample taken? Location/Sample ID#	SEP02@4'							
Photo Number(s)	See attached							

Other observations regarding on loction flowlines:

Summary

Was impacted soil identified?
☑ No ☐ Yes - less than 10 cubic yards ☐ Yes - more than 10 cubic yards

Total number of samples field screened: 2	*Total number of samples collected:* 2
Highest PID Reading: 1.0 ppm	*Total number of samples submitted to lab for analysis:* 1

If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	*Estimated spill volume:*
Lateral extent:	*Volume of soil removed:*

Is additional investigation required?

Was groundwater encountered during the investigation?
☑ No ☐ Yes - not impacted or in contact with impacted soils ☐ Yes - groundwater impacted and/or in contact with impacted soils

Measured depth to groundwater:	*Was remedial groundwater removal conducted?* Yes ☐ No ☐
Date Groundwater was encountered:	*Commencement date of removal:*
Sheen on groundwater? ☐ Yes ☐ No	*Volume of groundwater removed prior to sampling:*
Free product observed? ☐ Yes ☐ No	*Volume of groundwater removed post sampling:*
Total number of samples collected:	*Total Volume of groundwater removed:*
Total number of samples submitted to lab for analysis:	

TABLE 1

SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA

NOBLE ENERGY, INC.

HSR CUTLER 31-15G, WELD COUNTY, COLORADO

FREMONT PROJECT NO. C023-112

Sample ID	Sample Date	Depth (ft)	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)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	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		
SEP02@4'	04/24/2023	4'	*<0.0020*	*<0.0050*	*<0.0050*	*<0.010*	*<0.0050*	*<0.0050*	*<0.0038*	*<0.50*	*<50*	*<50*

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

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

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY, INC.
HSR CUTLER 31-15G, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-112

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl-Naphthalene (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
SEP02@4'	04/24/2023	4'	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*	*<0.00500*

Bold faced values exceed the COGCC Table 915-1 concentrations
Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

TABLE 3

SUMMARY OF SOIL SUITIBILITY FOR RECLAMATION

NOBLE ENERGY, INC.

HSR CUTLER 31-15G, WELD COUNTY, COLORADO

FREMONT PROJECT NO. C023-112

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
	COGCC Table 915-1 Soil Suitability Limits		6 - 8.3	<4	<6	2
SEP02@4'	04/24/2023	4'	7.07	0.204	0.139	*<0.0100*

Bold faced values exceed the COGCC Table 915-1 concentrations

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

TABLE 4
SUMMARY OF POTHOLE FIELD OBSERVATIONS
NOBLE ENERGY INC.
HSR CUTLER 14-31, WELD COUNTY, COLORADO
FREMONT PROJECT C023-112

Location	Latitude	Longitude	PID Reading	Field Observations
SEP02@4'	40.265392	-104.710479	1	No suspected impacts.
FL01@6'	40.265279	-104.710356	0.5	No suspected impacts.
WH (Sampled by others)	40.263485	-104.70859	-	Sampled by others.

TABLE 5

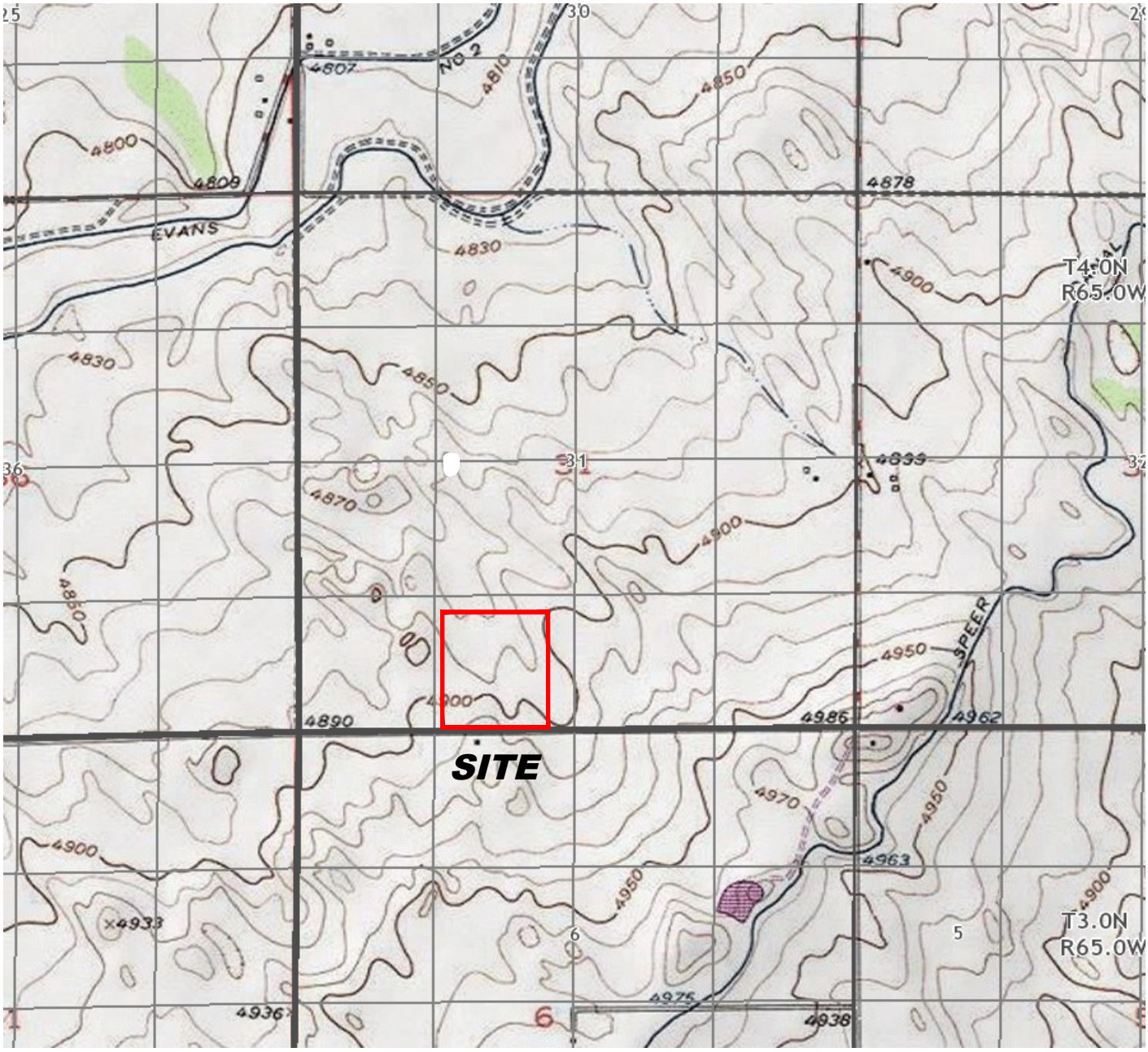
SUMMARY OF FLOW LINE CONDITION

NOBLE ENERGY INC.

HSR CUTLER 14-31, WELD COUNTY, COLORADO

FREMONT PROJECT C023-112

START	STOP	FOOTAGE	PIPE TYPE AND CONDITION
SEP02@4'	FL01@6'	54	2" steel, good condition. Removed flowline.
FL01@6'	WH (Sampled by others)	824	2" steel, good condition. AIP flowline.
		878	Total linear feet of flow line



N

Scale (miles)

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1

0 1000 2000 3000 4000 5000

Scale (feet)

Figure 1

Site Location Map
HSR Cutler 14-31
SESW S31 T4N R65W
Weld County, Colorado

USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Drawn By: HM
Date: 09/13/2023

FREMONT ENVIRONMENTAL

Legend

PID READING LOCATION

FORMER FLOWLINE

WELL HEAD LOCATION

N

0 10 20 30 40 50

Scale (feet)

Figure 2
Site Map

Noble Energy, Inc. – HSR Cutler 14-31
SESW, Sec. 31, T4N, R65W, 6th PM
Weld County, Colorado
40.265392°, -104.71047°

FREMONT ENVIRONMENTAL

Date: 09/13/2023

Remediation #: 27651

API #: 05-123-15168

Project No. CO023-112

Filename :

04/24/23
SEP02 4FT
ACE <0.00500
Ant <0.00500
BaA <0.00500
BbF <0.00500
BaP <0.00500
Chr <0.00500
DBahAnt <0.00500
FLU <0.00500
FL <0.00500
I123cdPY <0.00500
1MN <0.00500
2MN <0.00500
PY <0.00500

04/24/23	
SEP02 4FT	
B	<0.0020
T	<0.0050
E	<0.0050
X	<0.010
124TMB	<0.0050
135TMB	<0.0050
N	<0.0038
G	<0.50
D	<50
O	<50

04/24/23	
SEP02 4FT	
SAR	0.139
pH	7.07
EC	0.204
B	<0.0100

Well Head

N

Legend

PID READING LOCATION

FORMER FLOWLINE

SOIL SAMPLE LOCATION

WELL HEAD LOCATION

04/24/23	DATE SAMPLED
SEP02 4FT	SAMPLE ID and DEPTH (ft)
ACE <0.00500	ACENAPHTHENE (mg/kg)
Ant <0.00500	ANTHRACENE (mg/kg)
BaA <0.00500	BENZO(A)ANTHRACENE (mg/kg)
BbF <0.00500	BENZO(B)FLUORANTHENE (mg/kg)
BaP <0.00500	BENZO(K)FLUORANTHENE (mg/kg)
Chr <0.00500	CHRYSENE (mg/kg)
DBahAnt <0.00500	DIBENZ(A,H)ANTHRACENE (mg/kg)
FLU <0.00500	FLUORANTHENE (mg/kg)
FL <0.00500	FLUORENE (mg/kg)
I123cdPY <0.00500	INDENO(1,2,3-CD)PYRENE (mg/kg)
1MN <0.00500	1-METHYLNAPHTHALENE (mg/kg)
2MN <0.00500	2-METHYLNAPHTHALENE (mg/kg)
PY <0.00500	PYRENE (mg/kg)

04/24/23	DATE SAMPLED
SEP02 4FT	SAMPLE ID and DEPTH (ft)
SAR 2.22	SAR (units)
pH 8.08	pH (units)
EC 0.489	EC (mmhos/cm)
B 0.0514	BORON (mg/L)

04/24/23	DATE SAMPLED
SEP02 4FT	SAMPLE ID and DEPTH (ft)
B <0.0020	BENZENE (mg/kg)
T <0.0050	TOLUENE (mg/kg)
E <0.0050	ETHYLBENZENE (mg/kg)
X <0.010	TOTAL XYLENES (mg/kg)
124TMB <0.0050	1,2,4-TRIMETHYLBENZENE
135TMB <0.0050	1,3,5-TRIMETHYLBENZENE
N <0.0038	NAPHTHALENE (mg/kg)
G <0.50	TPH-GRO (mg/kg)
D <50	TPH-DRO (mg/kg)
O <50	TPH-ORO (mg/kg)

Figure 3
SOIL CHEMISTRY MAP

Noble Energy, Inc. – HSR Cutler 14-31
SESW, Sec. 31, T4N, R65W, 6th PM
Weld County, Colorado
40.265392°, -104.71047°

FREMONT ENVIRONMENTAL

Date: 09/13/2023

Remediation #: 27651

API #: 05-123-15168

Project No. CO023-112

Filename :

Photo Log

Description:

SEP01@5', UPRC 31-15G FL AIP

Photo Log

Description:

SEP02@4'

Photo Log

Description:

HSR Cutler 14-31 AIP and FL01@6'