

December 17, 2024

Noble Energy, Inc. – Clyncke State B36-25, Baker State B 36-12

Groundwater Monitoring Report

SESW S36 T5N R64W

40.348912, -104.50249

Weld County, Colorado

Fremont Project No. C022-187

Facility 447562, Remediation # 20768

Site Overview – Site History

Soil and groundwater impacts were identified at the former Clyncke State B36-25, Baker State B 36-12 tank battery during the abandonment of the facility. Approximately 1,900 cubic yards of petroleum impacted soil was removed from the site by excavation in November 2023 following the facility abandonment.

Conceptual Site Model*

*Data presented represents the most recent sampling event

- **Land Use** – Cropland
- **Soil Type (USCS)** – Clay with sand and silt (CL)
- **Receptors within ¼ mile** – Residential 0.09/0.12/0.13/0.18/0.2mi N, Riverine 0.24mi W, 0.17mi NE, Farm Structures 0.25mi N
- **Inferred Groundwater Gradient (Ft/Ft) and Flow Direction** – 0.073 ft/ft NW
- **Average Depth to Groundwater** – 5.87 feet (4 to 8 feet)
- **Impacted Media and Extent** – Soil
- **LNAPL Present** – No
- **Points of Compliance** – Excavation (Yes, in all cardinal and ordinal directions)
- **Number of Consecutive ECMC Compliant Quarters** – Two
- **Remediation Type** – MNA
- **Remediation System Operation Date(s)** – NA

Contaminants of Concern (COC)

The laboratory data indicate that the dissolved phase organic constituents were below their respective ECMC Table 915-1 standards in all wells sampled during the November 2024 quarterly monitoring event. The groundwater analytical data are summarized in Table 1 and illustrated on Figure 4. A copy of the laboratory's report, quality control data, and chain-of-custody documentation are included separately.

Remedial Actions

Monitored natural attenuation (MNA) will be implemented at the site to address dissolved phase groundwater impacts. A no further action designation will be requested from the ECMC following observation of four consecutive quarters of groundwater compliant with the applicable ECMC Table 915-1 standards, under static conditions, at the site. The Q4 2024 sampling event marks the second quarter of ECMC-compliant groundwater at the site.

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.

Please contact me at (970) 213-7488 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

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



12/17/2024

Date _____

Chris Lattes

Consultant

Reviewed by:



12/17/2024

Date _____

Ethan D. Black, P.G.

Geologist

Attachments:

Tables

Figures

TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE 100322
CLYNCKE STATE B 36-25, BAKER STATE B 36-12, WELD COUNTY, COLORADO
REM # 20768

Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethyl- Benzene (µg/L)	1,3,5- Trimethyl- Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater Below TOC (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67				
MW-1	08/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4543.95	6.75	4537.20	NP
	11/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.91	4540.04	NP
MW-2	08/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4543.96	6.89	4537.07	NP
	11/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		8.16	4535.80	NP
MW-3	08/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4543.56	6.85	4536.71	NP
	11/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.89	4539.67	NP
MW-4	08/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4543.73	6.42	4537.31	NP
	11/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		5.45	4538.28	NP
MW-5	08/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4543.90	6.67	4537.23	NP
	11/06/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		7.95	4535.95	NP

1. Bold values exceed the ECMC limit(s)

2. Red highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, NL - No Limit, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

TABLE 2
SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE 100322
CLYNCKE STATE B 36-25, BAKER STATE B 36-12, WELD COUNTY, COLORADO
REM # 20768

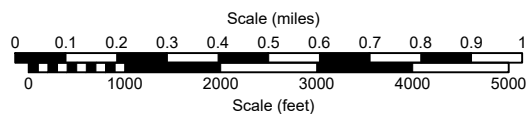
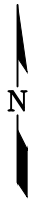
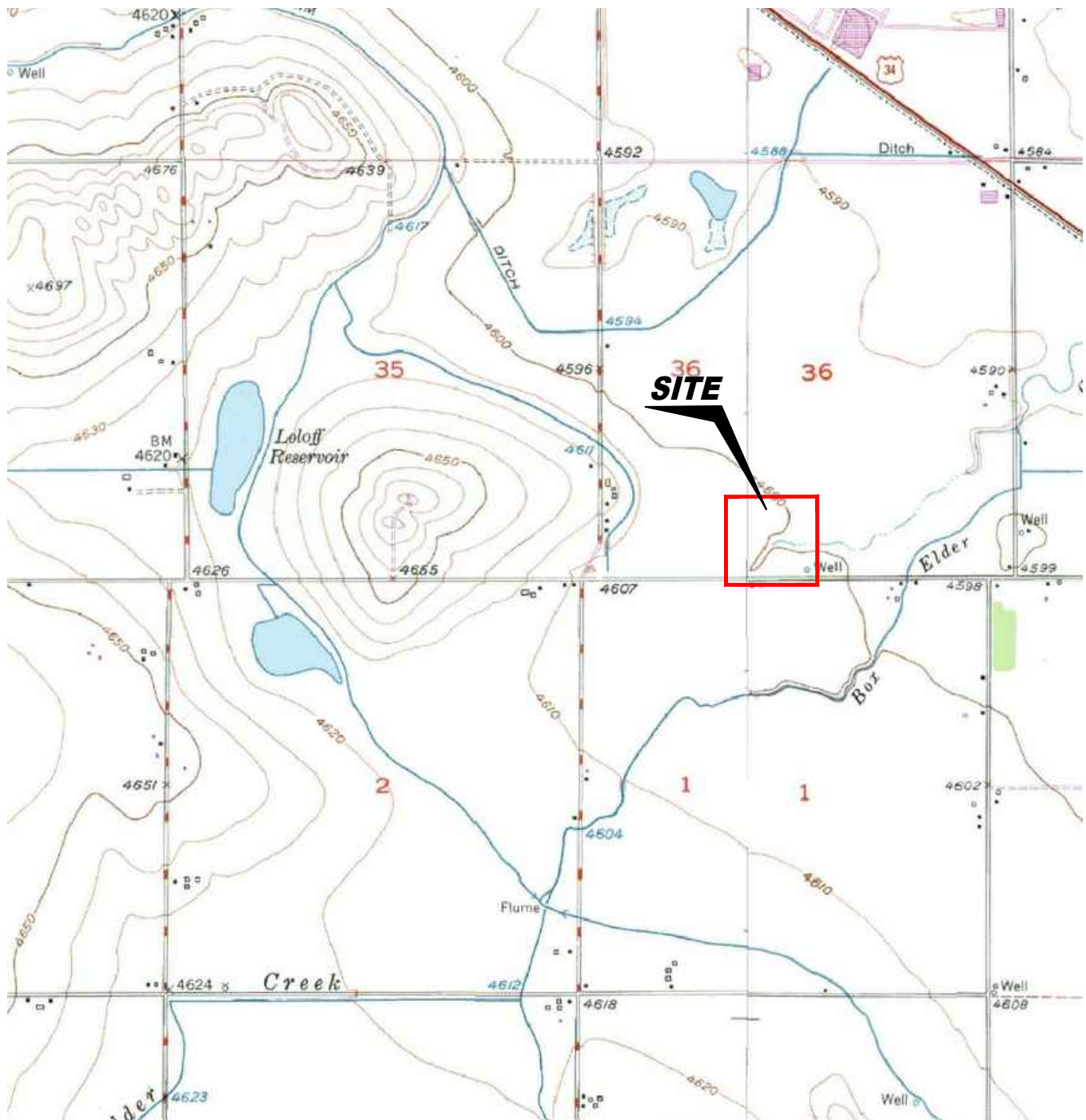
Sample ID	Sample Date	Total Dissolved Solids (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
ECMC Table 915-1 Limits		<1.25 x local background	250 or <1.25 x local background	250 or <1.25 x local background
MW-1	08/16/24	684	121	324
	11/06/24	925	115	334
MW-2	08/16/24	761	127	306
	11/06/24	1100	119	328
MW-3	08/16/24	772	131	313
	11/06/24	1120	122	345
MW-4	08/16/24	776	121	349
	11/06/24	1000	122	366
MW-5	08/16/24	734	126	239
	11/06/24	1030	117	311
Background Concentration (Current)		1250.0	-	457.5

1. Bold values exceed the ECMC limit(s)

2. Blue highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

* MW-4 used as upgradient/crossgradient background monitoring well



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1

SITE LOCATION MAP


Noble Energy, Inc.

Clyncke State B 36-25, Baker State B 36-12

SESW Sec. 36, T5N, R64W, 6th PM

Weld County, Colorado

40.348864°, -104.502153°

Project # C022-187	API #	Facility # 447562	
Date 12/11/24	Remediation # 20768	Filename 22187T	



LEGEND

- MONITORING WELL LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- ✦ DESTROYED MONITORING WELL

Figure 2
SITE MAP

Noble Energy, Inc.
Clyncke State B 36-25, Baker State B 36-12
 SESW Sec. 36, T5N, R64W, 6th PM
 Weld County, Colorado
 40.348864°, -104.502153°

Project No. C022-187	API #	Facility # 447562
Date 12/11/24	Remediation # 20768	Filename 22187Q3





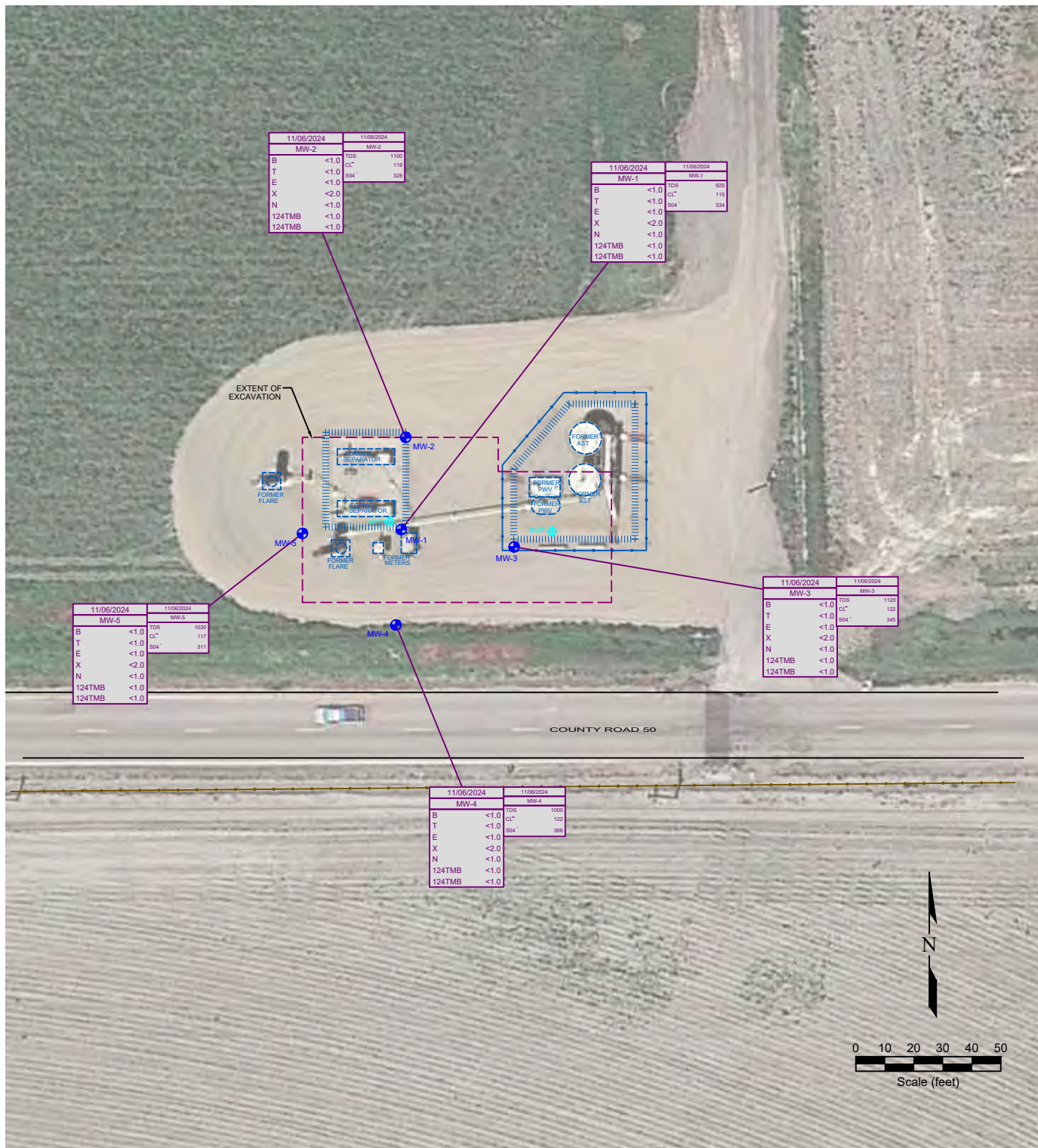
LEGEND

- MONITORING WELL LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- (4537.07) GROUND WATER ELEVATION (ft above arbitrary datum)
- NM NOT MEASURED
- WATER TABLE CONTOUR (contour interval 2 feet)
- GROUND WATER FLOW DIRECTION

Figure 3
INFERRED GROUNDWATER CONTOUR MAP
November 6, 2024
Noble Energy, Inc.
Clyncke State B 36-25, Baker State B 36-12
SESW Sec. 36, T5N, R64W, 6th PM
Weld County, Colorado
40.348864°, -104.502153°

Project No. C022-187	API #	Facility # 447562
Date 12/17/24	Remediation # 20768	Filename 22187Q3





LEGEND

- MONITORING WELL LOCATION
- DESTROYED MONITORING WELL
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- EXTENT OF EXCAVATION

DATE SAMPLED	SAMPLE ID
11/06/2024	MW-1
B	<1.0
T	<1.0
E	<1.0
X	<2.0
N	<1.0
124TMB	<1.0
124TMB	<1.0

DATE SAMPLED	SAMPLE ID
11/06/2024	MW-2
B	<1.0
T	<1.0
E	<1.0
X	<2.0
N	<1.0
124TMB	<1.0
124TMB	<1.0

DATE SAMPLED	SAMPLE ID
11/06/2024	MW-3
TDS	925
CL ⁻	115
SD ⁴⁺	334
124TMB	<1.0

DATE SAMPLED	SAMPLE ID
11/06/2024	MW-4
TDS	1000
CL ⁻	122
SD ⁴⁺	385
124TMB	<1.0

DATE SAMPLED	SAMPLE ID
11/06/2024	MW-5
TDS	1030
CL ⁻	117
SD ⁴⁺	311
124TMB	<1.0

Figure 4 GROUNDWATER CHEMISTRY MAP

Noble Energy, Inc.
Clyncke State B 36-25, Baker State B 36-12
 SESW Sec. 36, T5N, R64W, 6th PM
 Weld County, Colorado
 40.348864°, -104.502153°

Project No.
C022-187

API #

Facility #

447562

Date
12/17/24

Remediation #
20768

Filename
22187Q3

