

NOBLE ENERGY, INC

First Quarter 2025 Groundwater Monitoring Summary

April 17, 2025

HSR Fischer 6-23

NWNE Sec 23, T4N, R65W

Remediation # 34710

This groundwater monitoring summary has been prepared by Fremont Environmental, Inc. for the HSR Fischer 6-23 location.

Site History and Background

Historical soil and groundwater impacts were identified at the site of the former Noble HSR Fischer 6-23 tank battery (HSR Fischer) on January 19, 2024 while potholing for the RBU Madison pipeline. On January 29, 2024, a site investigation was conducted to delineate the extent of soil and groundwater impacts at the HSR Fischer site. Fourteen monitoring wells were installed during the initial site investigation.

On March 5, 2024, the pipeline installation crews installed a 20-inch diameter pipeline through the former HSR Fischer tank battery location. The scope of work included removal and offsite disposal of clean and impacted soil while trenching through the former location. The excavation was intended to accommodate the installation of the pipeline rather than removing all of the impacted soil. Approximately 380 cubic yards of clean and impacted soil were excavated and transported to Waste Management's Buffalo Ridge landfill. During the March 5, 2024 pipeline installation project and subsequent reclamation work, 12 of the 14 monitoring wells were destroyed or damaged. The 14 monitoring well network was re-installed on March 2, 2024.

Groundwater Monitoring Activities

First quarter 2025 groundwater sampling was completed at the location on February 27, 2025. Fourteen monitoring wells (MW-1R through MW-14R) were sampled and submitted to Enthalpy Analytical Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260D and Chloride ion, Sulfate ion by EPA Method 300.0 and Total Dissolved Solids (TDS) by SM2540C.

The laboratory analytical results indicate that dissolved phase organic constituents were compliant with their respective ECMC Table 915-1 standards in 12 of 14 wells sampled. Two monitoring wells were reported with concentrations of an organic compound that exceeded the ECMC Table 915-1 standard; two wells exceeded the standard of 5 µg/L for benzene. The groundwater analytical data are summarized in Table 1 and Table 2. The site location is illustrated on Figure 1, monitoring well locations are illustrated on Figure 2, groundwater elevations are illustrated on Figure 3, groundwater chemistry is illustrated on Figure 4, and the proposed remediation system

layout is shown on Figure 5. A copy of the laboratory report, quality control data, and chain-of-custody documentation is included separately.

Current Remediation Strategy and Path Forward

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 Q1 2025 sampling event marks zero consecutive quarters of ECMC-compliant groundwater at the site. A solar-powered air sparge (AS) remediation system is being considered to address residual hydrocarbon impacts in the soil and groundwater if concentrations of Table 915-1 organic compounds rebound and do not naturally attenuate. The proposed remediation system layout can be found in attached Figure 5.

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TABLE 1
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE 100322
HSR FISCHER 6-23, WELD COUNTY, COLORADO
REM # 34710

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				
GW01	01/19/24	190	<1.0	5.8	68	5.8	94	57	NA	NA	NA	<0.1
MW-1	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	96.78	3.24	93.54	NP
MW-1R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.97	2.95	97.02	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.00	95.97	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.73	96.24	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.29	96.68	NP
MW-2	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	96.45	2.86	93.59	NP
MW-2R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.59	2.54	97.05	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.00	95.59	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.28	96.31	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		2.85	96.74	NP
MW-3	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	96.58	2.97	93.61	NP
MW-3R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.67	2.55	97.12	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.05	95.62	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.32	96.35	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		2.94	96.73	NP
MW-4	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	96.47	2.91	93.56	NP
MW-4R	05/02/24	9.21	<1.00	7.32	81.4	<2.00	18.3	10.3	99.73	2.70	97.03	NP
	08/13/24	77.2	<1.00	8.73	133	4.28	43.6	27.4		4.18	95.55	NP
	11/20/24	59	<1.0	11	29	<1.0	29	1.9		3.45	96.28	NP
	02/27/25	10.9	<1.00	<1.00	3.19	<2.00	<2.00	<2.00		3.01	96.72	NP
MW-5	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.66	5.96	93.70	NP
MW-5R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.88	3.86	96.02	NP

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-5R	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.88	4.14	95.74	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.44	96.44	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.02	96.86	NP
MW-6	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.34	5.80	93.54	NP
MW-6R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	2.41	<2.00	99.76	2.77	96.99	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.31	95.45	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.55	96.21	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.09	96.67	NP
MW-7	01/29/24	3500	<1.0	550	5600	94	790	430	99.69	6.14	93.55	NP
MW-7R	05/02/24	46.7	<1.00	13.7	175	<2.00	28.4	18.8	99.65	2.62	97.03	NP
	08/13/24	399	<1.00	13.0	94.7	2.48	46.7	10.9		4.14	95.51	NP
	11/20/24	<1.0	<1.0	1.2	6.6	<1.0	1.9	<1.0		3.38	96.27	NP
	02/27/25	186	<1.00	<1.00	2.05	<2.00	<2.00	<2.00		2.75	96.90	NP
MW-8	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.21	5.77	93.44	NP
MW-8R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.74	2.90	96.84	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.37	95.37	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.63	96.11	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.25	96.49	NP
MW-9	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.78	6.46	93.32	NP
MW-9R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	NF	3.17	NM	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.75	NM	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.97	NM	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.95	3.54	96.41	NP
MW-10	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.82	6.52	93.30	NP
MW-10R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	100.00	3.25	96.75	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.77	95.23	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		4.03	95.97	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.60	96.40	NP

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-11	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	98.87	5.39	93.48	NP
MW-11R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.39	2.45	96.94	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.02	95.37	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.20	96.19	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		2.79	96.60	NP
MW-12	01/29/24	<1.0	<1.0	<1.0	10	<1.0	<1.0	<1.0	96.61	3.03	93.58	NP
MW-12R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.81	2.75	97.06	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.23	95.58	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.49	96.32	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		3.08	96.73	NP
MW-13	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	99.11	5.64	93.47	NP
MW-13R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.46	2.57	96.89	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.05	95.41	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.36	96.10	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		2.89	96.57	NP
MW-14	01/29/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	100.00	6.52	93.48	NP
MW-14R	05/02/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	99.54	2.56	96.98	NP
	08/13/24	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		4.12	95.42	NP
	11/20/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0		3.35	96.19	NP
	02/27/25	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00		2.94	96.60	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
HSR FISCHER 6-23, WELD COUNTY, COLORADO
REM # 34710

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
GW01	01/19/24	1800	381	241
MW-1	01/29/24	2570	435	942
MW-1R	05/02/24	2410	468	1100
	08/13/24	2490	413	833
	11/20/24	2530	431	974
	02/27/25	2770	430	1040
MW-2	01/29/24	2400	411	929
MW-2R	05/02/24	2260	434	998
	08/13/24	2430	389	810
	11/20/24	2130	375	776
	02/27/25	2330	382	857
MW-3	01/29/24	3310	554	1390
MW-3R	05/02/24	3190	542	1440
	08/13/24	3220	493	1150
	11/20/24	2550	397	1020
	02/27/25	3140	454	1180
MW-4	01/29/24	2270	406	830
MW-4R	05/02/24	2380	443	1100
	08/13/24	2120	380	713

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-4R	11/20/24	2090	368	758
	02/27/25	2150	358	788
MW-5	01/29/24	2180	393	775
MW-5R	05/02/24	1840	362	838
	08/13/24	2510	403	823
	11/20/24	3300	452	1790
	02/27/25	2840	400	1070
MW-6	01/29/24	2450	451	928
MW-6R	05/02/24	2520	494	1150
	08/13/24	2370	444	574
	11/20/24	2090	385	801
	02/27/25	2800	421	1040
MW-7	01/29/24	2170	409	409
MW-7R	05/02/24	2360	467	948
	08/13/24	2220	430	391
	11/20/24	2680	553	571
	02/27/25	3100	561	717
MW-8	01/29/24	2110	394	838
MW-8R	05/02/24	2260	432	1050
	08/13/24	2270	380	785
	11/20/24	2150	390	858
	02/27/25	2340	384	883

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-9	01/29/24	1930	340	701
MW-9R	05/02/24	1940	392	800
	08/13/24	1980	337	610
	11/20/24	2020	375	713
	02/27/25	2090	351	697
	MW-10	01/29/24	2160	367
MW-10R	05/02/24	2120	386	814
	08/13/24	2060	356	635
	11/20/24	1760	338	648
	02/27/25	2260	379	754
	MW-11	01/29/24	2380	430
MW-11R	05/02/24	2610	584	890
	08/13/24	2280	420	430
	11/20/24	1970	252	814
	02/27/25	2420	405	462
	MW-12	01/29/24	2230	411
MW-12R	05/02/24	2240	421	995
	08/13/24	2430	379	827
	11/20/24	2160	388	910
	02/27/25	2440	379	964
	MW-13	01/29/24	2910	517
MW-13R	05/02/24	2640	474	1170
	08/13/24	3030	475	1000

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-13R	11/20/24	2280	388	862
	02/27/25	2930	453	1080
MW-14	01/29/24	2140	400	778
MW-14R	05/02/24	2220	448	1070
	08/13/24	2270	385	756
	11/20/24	2250	385	806
	02/27/25	2390	371	770
Background Concentration (Current)		3550	500	1337.5

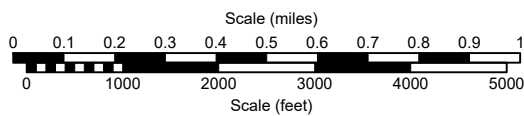
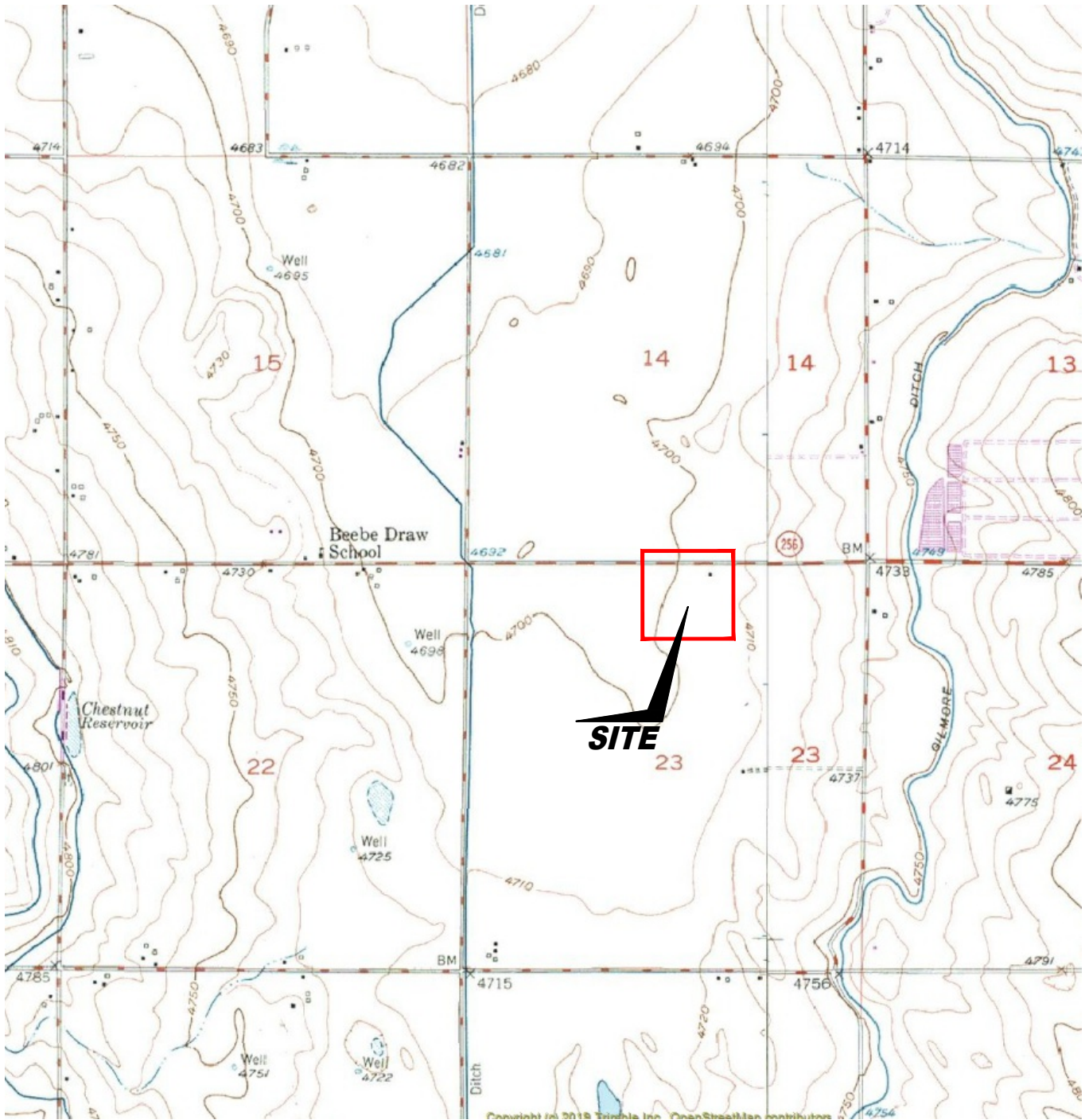
1. Bold values exceed the ECMC limit(s)

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-5R is used as upgradient/cross gradient well

FIGURES



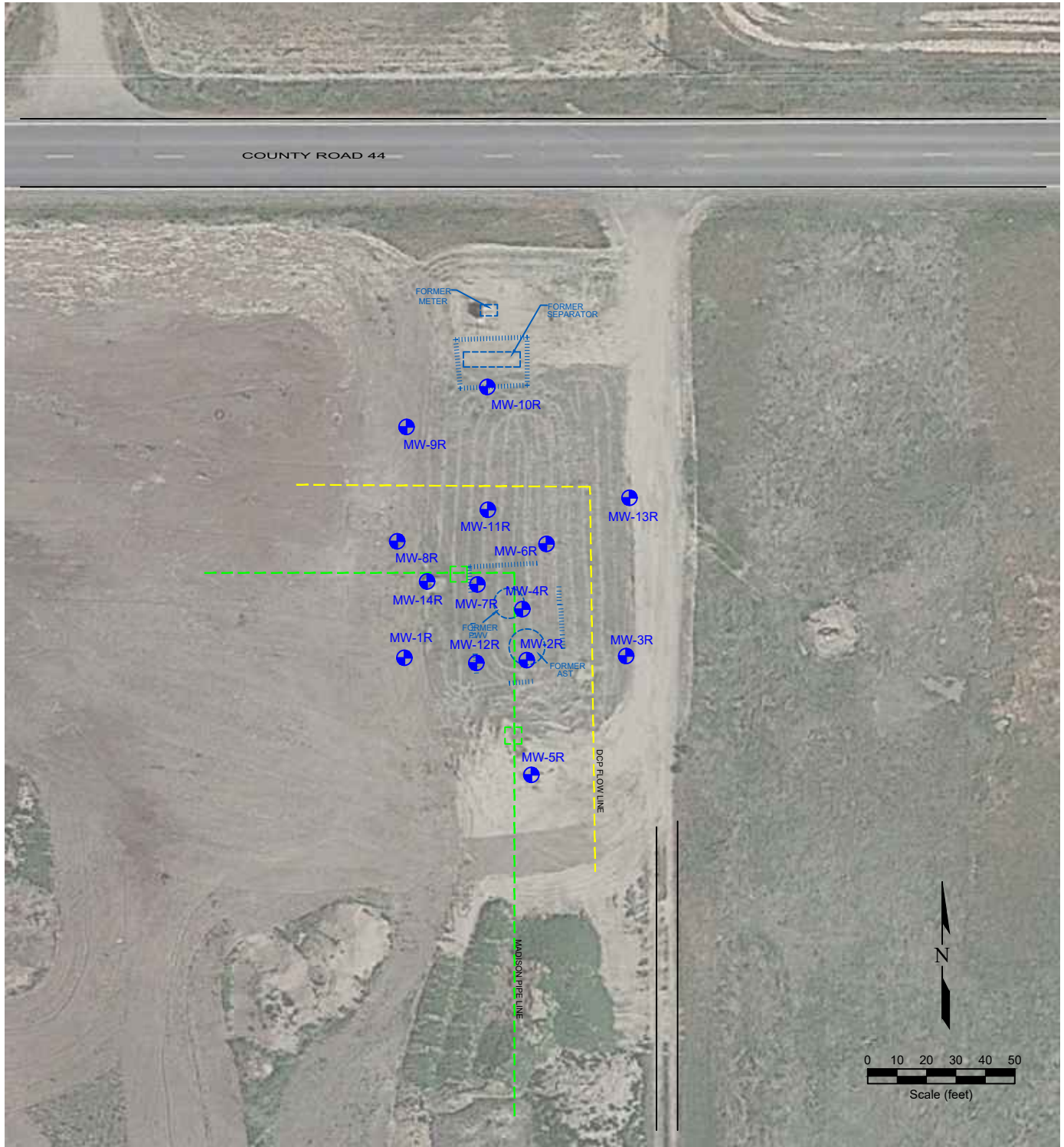
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ HSR Fisher 6-23
 NWNE, Sec 23, T4N, R65W, 6th P.M.
 Weld County, Colorado
 40.30500 ° -104.630639 °

Project No. CO24-016	API #	Facility # 309888
Date 4/17/25	Remediation #	Filename 24016T





LEGEND

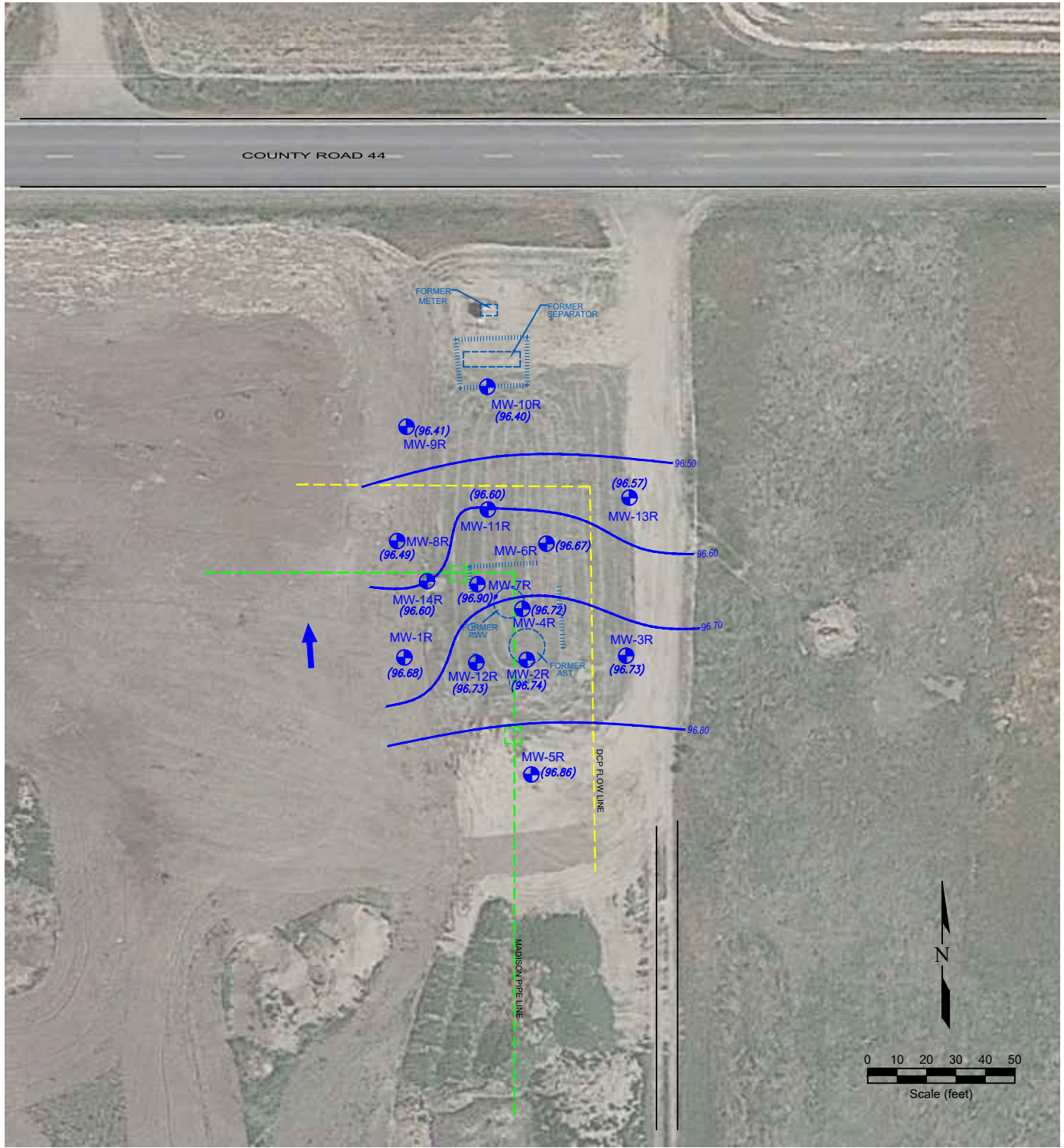
- + MONITORING WELL
- AST ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- DCP FLOW LINE
- MADISON PIPE LINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL

Figure 2
SITE MAP

Noble Energy, Inc. ~ HSR Fischer 6-23
 NWNE, Sec 23, T4N, R65W, 6th P.M.
 Weld County, Colorado
 40.30500 ° -104.630639 °

Project No. CO24-016	API #	Facility # 309888
Date 4/17/25	Remediation # 34710	Filename 24016Q





LEGEND

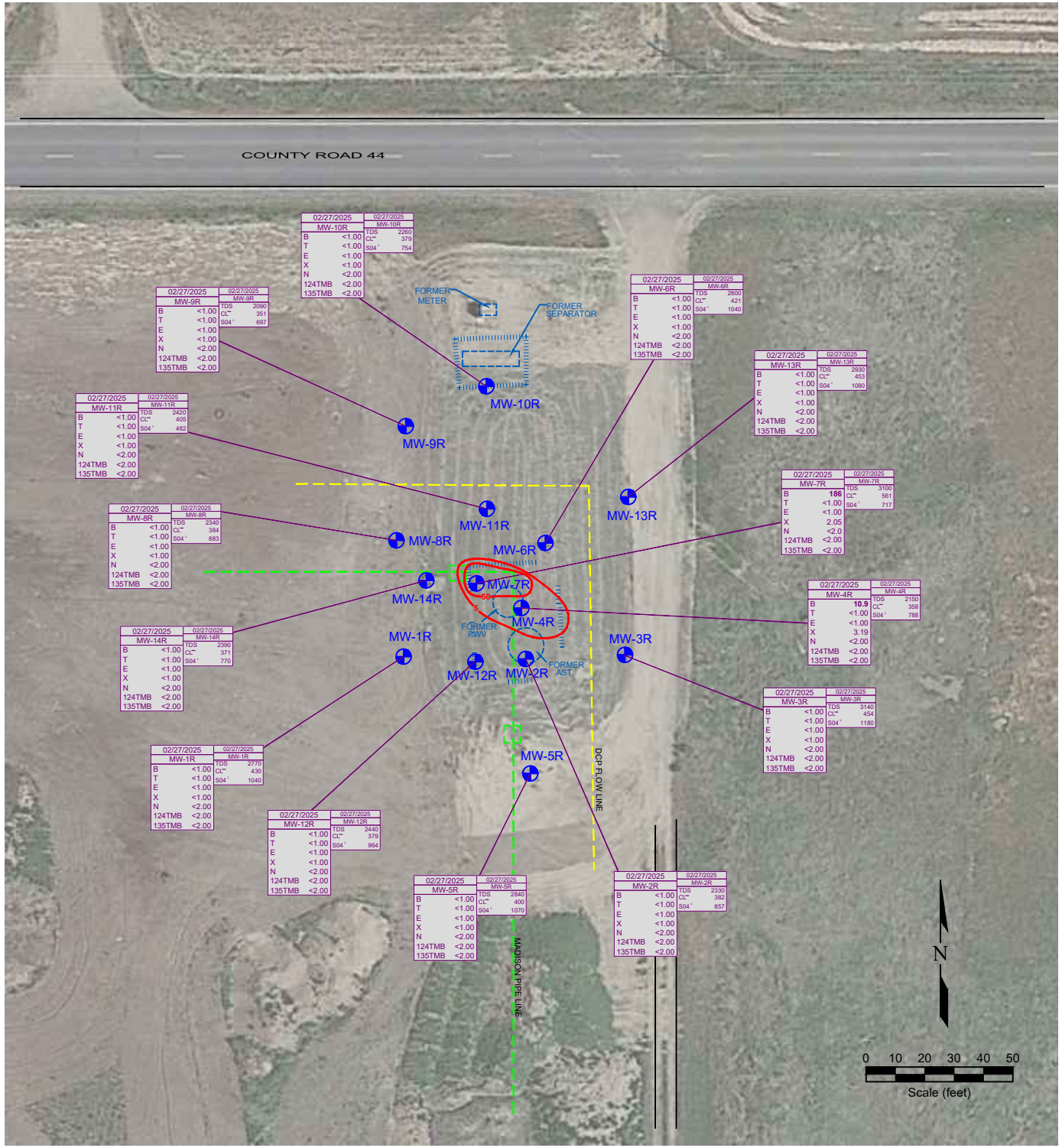
- MONITORING WELL
- AST ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- DCP FLOW LINE
- MADISON PIPE LINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- (97.74) GROUND WATER ELEVATION (ft above arbitrary datum)
- NW NOT MEASURED
- WATER TABLE CONTOUR
- GROUND WATER FLOW DIRECTION

Figure 3
INFERRED GROUNDWATER CONTOUR MAP
February 27, 2025

Noble Energy, Inc. ~ HSR Fischer 6-23
 NWNE, Sec 23, T4N, R65W, 6th P.M.
 Weld County, Colorado
 40.30500 ° -104.630639 °

Project No. CO24-016	API #	Facility # 309888
Date 4/17/25	Remediation # 34710	Filename 24016Q





LEGEND

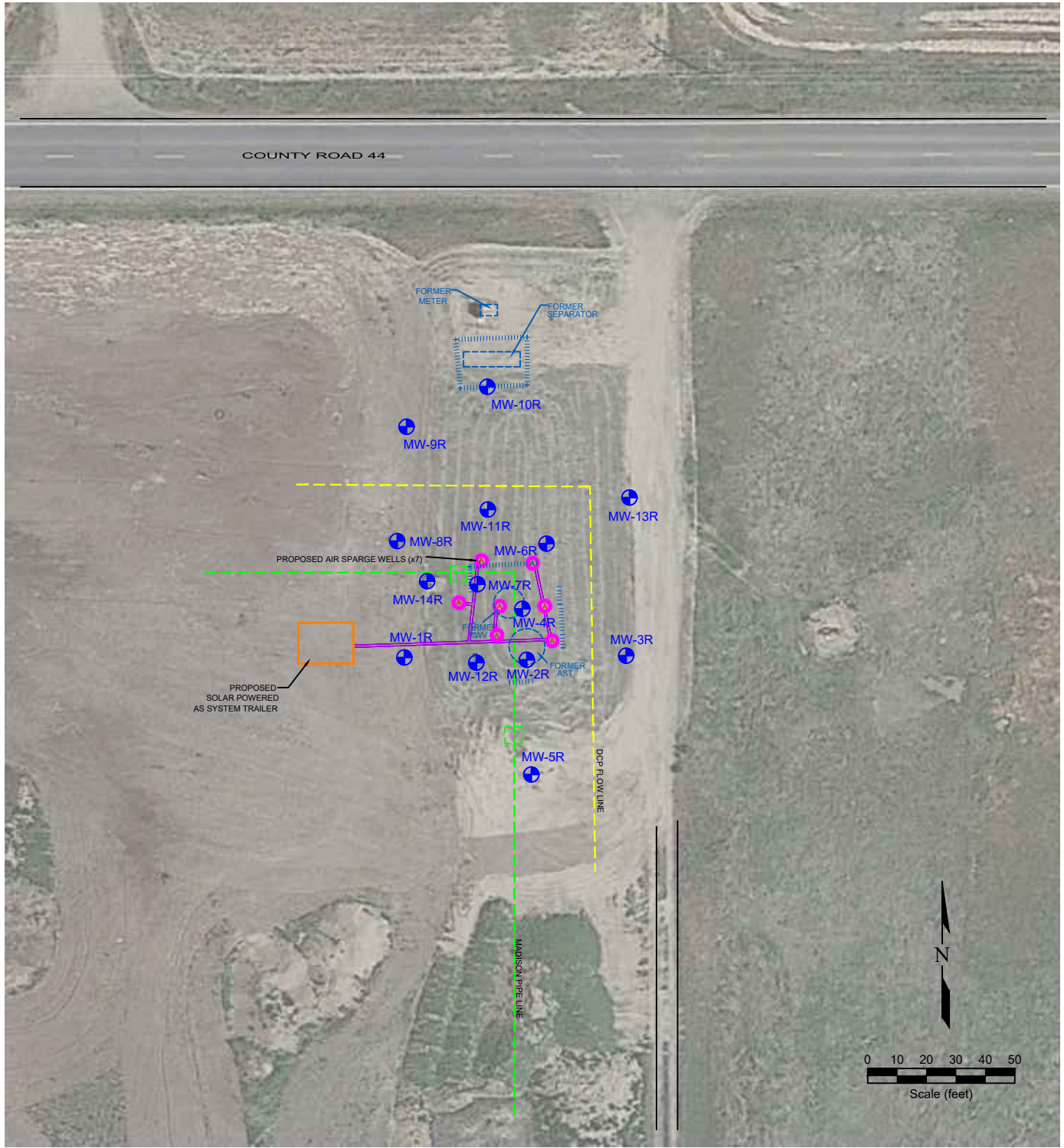
- MONITORING WELL
- AST ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- DCP FLOW LINE
- MADISON PIPE LINE
- FENCE LINE
- CONTAINMENT BERM
- CONTAINMENT WALL
- 5 BENZENE ISOCONCENTRATION (ug/L)

02/27/2025	DATE SAMPLED	02/27/2025	DATE SAMPLED
MW-1	SAMPLE ID	MW-1	SAMPLE ID
B	<1.00	TDS	2610
T	<1.00	CL ⁻	469
E	<1.00	SO4 ⁻	1100
X	<1.00		
N	<2.00		
124TMB	<1.00		
135TMB	<1.00		

02/27/2025	DATE SAMPLED	02/27/2025	DATE SAMPLED
MW-1	SAMPLE ID	MW-1	SAMPLE ID
TDS	2610	TOTAL DISSOLVED SOLIDS (mg/L)	
CL ⁻	469	CHLORIDE ION (mg/L)	
SO4 ⁻	1100	SULFATE ION (mg/L)	

Figure 4
GROUNDWATER CHEMISTRY WITH
BENZENE ISO-CONCENTRATION MAP
Noble Energy, Inc. ~ HSR Fischer 6-23
NWNE, Sec 23, T4N, R65W, 6th P.M.
Weld County, Colorado
40.30500 ° -104.630639 °

Project No. CO24-016	API #	Facility # 309888
Date 4/17/25	Remediation # 34710	Filename 24016Q



LEGEND

- MONITORING WELL
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- DCP FLOW LINE
- MADISON PIPE LINE
- PROPOSED AIR SPARGE WELL
- SOLAR POWERED AS SYSTEM TRAILER
- FENCE LINE
- ||||| CONTAINMENT BERM
- CONTAINMENT WALL
- PROPOSED SYSTEM TRENCH

**Figure 5
PROPOSED AS SYSTEM LAYOUT MAP**

Noble Energy, Inc. ~ HSR Fischer 6-23
 NWNE, Sec 23, T4N, R65W, 6th P.M.
 Weld County, Colorado
 40.30500 ° -104.630639 °

Project No. CO24-016	API #	Facility # 309888
Date 4/17/25	Remediation # 34710	Filename 24016Q



GRAPHS

Graph 1:
Benzene Concentrations in
HSR Fischer 6-23 Groundwater Monitoring Wells Over Time

