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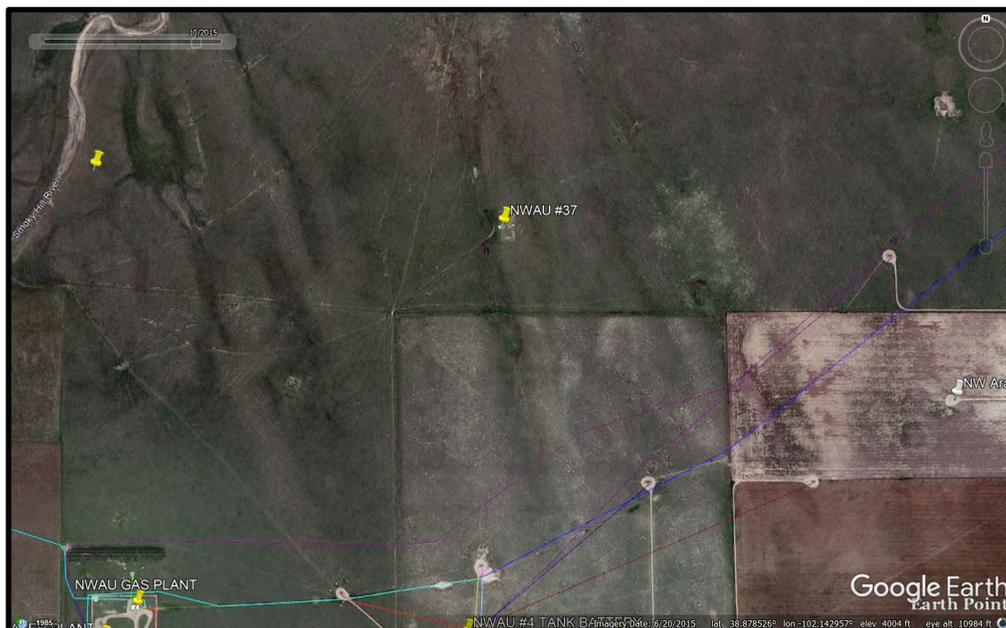
June 19, 2023

Mr. Jason Kosola, P.G.
Southeast Environmental Protection Specialist
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**RE: Northwest Arapahoe Unit #37
COGCC Remediation# 27401
Location Abandonment and Soils Investigation
Form 27 and Form 44 Submittal**

Mr. Kosola:

Mull Drilling Co., Inc (Mull) is providing this report to the Colorado Oil and Gas Commission (COGCC) for environmental services that occurred at Northwest Arapahoe Unit #37. The location in question is the site of an older Gas well that was drilled in 1990. Mull mobilized to the site to finalize the well abandonment process by cutting and capping the original casing at an appropriate depth below grade.



Site Location

In following proper abandonment procedures Mull has performed an investigation of the flowlines in the area. It was determined that the process line that was attached to the Northwest Arapahoe #37 well heads south to the NWAU #4 tank battery. Mull is attaching an abandon in place request by the landowner to this submittal. We have also attached the most recent flowline integrity test as well. When decommissioning of the entire facility – NWAU Plant – Mull will readdress whether the flow line needs to be removed.

On April 13, 2023 a soils investigation occurred in order to verify the presence of any soil impacts. A licensed geologist mobilized to the location to confirm the presence of any soil impacts by taking samples with a photo ionization detector for headspace analysis and by taking soil samples in areas indicative of petroleum impacted locations. All samples conformed to Table 915-1 analysis: 8 samples were taken including a background sample. One of the samples was taken at 4 ft depth for ESA purposes. All collected soil samples were submitted to Pace Laboratories of Kansas for analysis following approved chain of custody protocols.

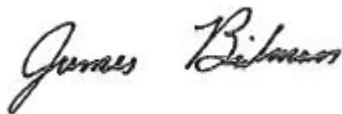
Please see **Figure I** for the sampling locations. For tabulated results see the attached **Table 915-1 – NWAU 37**.

Results of the investigation indicated that there were only marginal hydrocarbon impacts remaining. Mull will be disregarding Arsenic as a cleanup element: this is due to all samples being indicative of elevated values. In addition, one sample exceeded the pH range for soils. However, all samples showed elevated pH levels. During the reclamation process Mull will be applying a soil conditioner that will lower the pH in the area.

A lease road to the location exists concurrently with a road for the landowner's cattle operation. It appears to allow access to facilities deeper into the tenant's land. Attached is a request by the landowner to retain the lease road for his activities. Further communications between Mull and the division shall occur relating to the state of the road upon final decommissioning of the entire facility.

This is Mull's formal request for final remedial closure at this site. Reclamation activities shall occur at the site in the coming months.

Should there be any questions or concerns feel free to contact us,



James Beilman, PG, CPG
Director – Safety & Environmental
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Attachments:

Figure 1 – Sampling Points

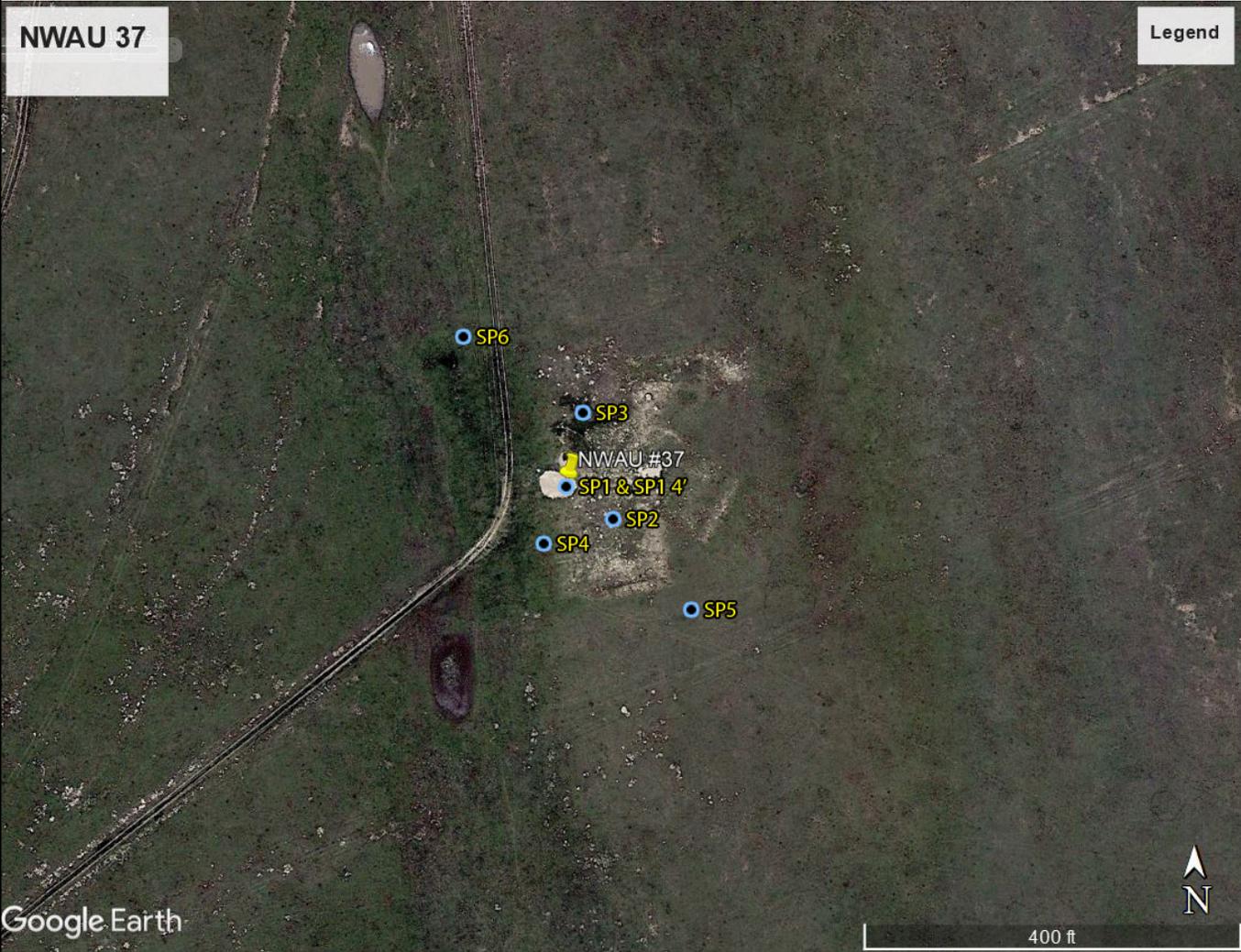
Table 915-1 – NWAU 37

Abandon in Place Request – Process Line

Landowners Lease Road Retention Request

Figure 1: Sampling Points

NWAU #37



Legend

Highlighted Points
are sampling
locations

Regulatory Limits as COGCC
promulgated table 915-1

Location:	Latitude: 38.880577	Longitude: -102.143284	COGCC Project #	27401
State:	Colorado			
County:	Cheyenne			



NWAU 37 Table 915-1		4/13/2023							
CLEANUP CONCENTRATIONS		DG1	DG1 4'	DG2	DG3	DG4	DG5	DG6	DUPLICATE A
Contaminant of Concern	Concentrations	38.880577, 102.143284	38.880577, -102.143284	38.880475, 102.143108	38.880794, -102.143211	38.880406, -102.143348	38.880194, -102.142844	38.881013, -102.143673	38.880794, -102.143211
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500mg/kg	29.3J	6.9 J	16J	109.1	44.7	35J	42.6	49.1
Soils and Groundwater - liquid hydrocarbons including condensate and oil	below visual detection limits	ND	ND	ND	ND	ND	ND	ND	ND
Soil Suitability for Reclamation									
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	319	1700	162	275	223	138	268	221
Sodium adsorption ratio (SAR) (by saturated paste method)	<6	0.104	0.366	1.25	0.096	0.0553	0.0706	0.0553	0.0926
pH (by saturated paste method)	6-8.3	8.1	7.88	8.22	8.07	8.08	8.33	8.08	8.03
boron (hot water soluble soil extract)	2mg/l	0.289	0.36	0.301	0.244	0.233	0.180J	0.233	0.297
Organic Compounds in Groundwater									
benzene	5µg/l	NA	NA	NA	NA	NA	NA	NA	NA
toluene	560 to 1,000µg/l	NA	NA	NA	NA	NA	NA	NA	NA
ethylbenzene	700µg/l	NA	NA	NA	NA	NA	NA	NA	NA
xylenes (sum of o-, m- and p- isomers = total xylenes)	1,400 to 10,000µg/l	NA	NA	NA	NA	NA	NA	NA	NA
naphthalene	140µg/l	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	67µg/l	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	67µg/l	NA	NA	NA	NA	NA	NA	NA	NA
Groundwater Inorganic Parameters									
total dissolved solids (TDS)	<1.25 X local background	NA	NA	NA	NA	NA	NA	NA	NA
chloride ion	250mg/l or <1.25 X local background	NA	NA	NA	NA	NA	NA	NA	NA
sulfate ion	250mg/l or <1.25 X local background	NA	NA	NA	NA	NA	NA	NA	NA

Soils	Residential Soil Screening Level Concentrations (mg/kg)	Protection of Groundwater Soil Screening Level Concentrations (mg/kg)								
Organic Compounds in Soils										
benzene	1.2	0.0026 (M)	ND	ND	ND	0.00071J	ND	ND	ND	ND
toluene	490	0.69 (M)	ND	ND	ND	ND	ND	ND	ND	ND
ethylbenzene	5.8	0.78 (M)	ND	ND	ND	ND	ND	ND	ND	ND
xylenes (sum of o-, m- and p- isomers = total xylenes)	58	9.9 (M)	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	0.0013J	0.00080J	ND	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	0.00052J	ND	ND	ND	ND	ND	0.0014J	ND
acenaphthene	360	0.55 (R)	ND	ND	ND	ND	ND	ND	ND	ND
anthracene	1800	5.8 (R)	ND	ND	ND	ND	ND	ND	ND	ND
benz(a)anthracene	1.1	0.011 (R)	ND	ND	ND	ND	ND	ND	ND	ND
benzo(b)fluoranthene	1.1	0.3 (R)	ND	ND	ND	ND	ND	ND	ND	ND
benzo(k)fluoranthene	11	2.9 (R)	ND	ND	ND	ND	ND	ND	ND	ND
benzo(a)pyrene	0.11	0.24 (M)	ND	ND	ND	ND	ND	ND	ND	ND
chrysene	110	9 (R)	ND	ND	ND	ND	ND	ND	ND	ND
dibenzo(a,h)anthracene	0.11	0.096 (R)	ND	ND	ND	ND	ND	ND	ND	ND
fluoranthene	240	8.9 (R)	ND	ND	ND	ND	ND	ND	ND	ND
fluorene	240	0.54 (R)	ND	ND	ND	ND	ND	ND	ND	ND
indeno(1,2,3-cd)pyrene	1.1	0.98 (R)	ND	ND	ND	ND	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	ND	ND	ND	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	ND	ND	ND	ND	ND	ND	ND	ND
naphthalene	2	0.0038 (R)	ND	ND	ND	ND	ND	ND	ND	ND
pyrene	180	1.3 (R)	ND	ND	ND	ND	ND	ND	ND	ND
Metals in Soils										
arsenic	0.68	0.29 (M)	4.5	4.9	6	4.5	4.7	4.5	4.1	4.3
barium	15000	82 (M)	155	574	158	151	147	156	128	143
cadmium	71	0.38 (M)	0.6	0.57	0.64	0.51	0.54	0.51	0.51	0.49
chromium (VI)	0.3	0.00067 (R)	ND	ND	ND	ND	ND	ND	ND	ND
copper	3100	46 (M)	9.4	9.4	11.2	9.3	9.1	8.6	8	9.1
lead	400	14 (M)	15.1	8.2	9.4	10.9	8.6	7.6	8.1	14.6
nickel	1500	26 (R)	8.9	9.9	12.5	9.4	9.1	8.9	8.3	8.7
selenium	390	0.26 (M)	ND	ND	ND	ND	ND	ND	ND	ND
silver	390	0.8 (R)	ND	ND	ND	ND	ND	ND	ND	ND
zinc	23000	370 (R)	40.3	33.5	39.9	39	35.8	28.7	32.9	42.8

The letter "(R)" following a protection of Groundwater soil screening level indicates the concentration is derived from a risk-based approach. The letter "(M)" following a protection of Groundwater soil screening level indicates the concentration is derived from the drinking water MCL.

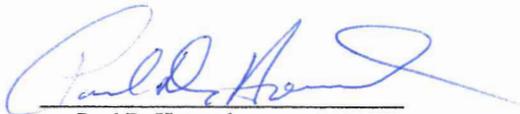
**AGREEMENT FOR IN PLACE ABANDONMENT OF FLOWLINE
AND RETAINMENT OF LEASE ROAD**

WHEREAS, Mull Drilling Company, Inc. installed a flowline connecting the Northwest Arapahoe Unit #37, located in the SW/4NW/4 Section 32, Township 13 South, Range 42 West, Cheyenne County, Colorado, to the NWAU #4 Tank Battery located in the SW/4SW/4 Section 32, Township 13 South, Range 42 West, Cheyenne County, Colorado. Said flowline is approximately 3200 feet long.

Paul D. Howard is the surface owner of the W/2 Section 32, Township 13 South, Range 42 West, Cheyenne County, Colorado and hereby grants Mull Drilling Company, Inc. permission to abandon said flowline in place, in an attempt to minimize impact to public health, safety, welfare, the environment and wildlife resources. Said abandonment shall conform to all appropriate procedures for in-place abandonment, as dictated by the Colorado Oil and Gas Commission (Series 1100 Rules).

Additionally, Mull Drilling Company, Inc. has abandoned the lease roads located in the NW/4 Section 32, Township 13 South, Range 42 West, Cheyenne County, Colorado. Paul D. Howard requests that said roads be left in place and hereby assumes all present and future rights and responsibilities associated therewith.

EXECUTED the 26 day of October, 2022.



Paul D. Howard

ACKNOWLEDGMENT

STATE OF Colorado)

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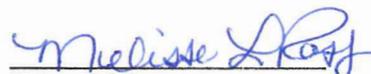
COUNTY OF Cheyenne

The foregoing instrument was subscribed and sworn before me this 26 day of

October, 2022, by Paul D. Howard.

Witness by hand and official seal:

10-19-2025
My Commission Expires:



Notary Public

