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March 20, 2023

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

RE: Pattie 2-2
API # 05-061-06780
Results of Investigation and Landowner Communications
COGCC Remediation Project# 22774

Mr. Kosola:

Mull Drilling Co., Inc (Mull) is providing this update to the Colorado Oil and Gas Commission (COGCC) for results of a preliminary Soils Investigation at the Pattie 2-2 Location. It is also being submitted to provide a testimony of landowner concerns and interests, that are currently prohibiting remedial action.

The location in question was brought to Mull's attention through submission of a Form 4 sundry filed in 2021, requesting Final Reclamation Inspection. The Pattie 2-2 was abandoned in 11/26/2007. During an Aerial Drone inspection of the area on 11/1/21, Ryan Costa, a COGCC Reclamation Official, observed that there was a portion of the location – approximately 100' x 100' – that did not display the appropriate 80% vegetative regrowth. It was noted that there may be soil issues in the area that are impacting any potential regrowth.



Site Location

Investigation

After Mull received permission from the COGCC and the landowner an Environmental Professional Charles Kellenhoffer of APTIM Environmental mobilized to the location on April 19th, 2022 to verify the presence of any soil impacts. The location was sampled with a Photo Ionization Detector (PID) for hydrocarbons under approved soil sampling techniques and then secondary sampling occurred for Table 915-1 analysis: a total of 7 locations were sampled during the investigation. All samples were taken within the first foot of the surface with a steel auger. During the investigation, it did not appear that there was any impact below 1 ft in depth. To see a visual representation of the sampling location please look to ***Figure 1***. There were no positive results for PID readings above background.

During this investigation, APTIM took 4 background samples around the perimeter of the area to measure the background. This allowed Mull to determine the native background analytical for purposes of later reclamation. All samples were submitted to Pace Laboratories of Kansas for analysis following approved chain of custody protocols. Please see the attached Lab Report: ***Pace Project # 60398351*** for the analytical. Or for tabulated results, please look to ***Table 915-1*** in the attached files.

Results

The results at the location exhibited signs of legacy hydrocarbon exploration with the core locations displaying elevated SAR ratios that in one case were above cleanup concentrations. Please look to ***Figure 2*** for the highlighted approximate area of excavation and individual SAR results. The potential excavation area appears to be the area of highest impact. Accordingly, with land-owner permission Mull planned to mobilize to the area and excavate the area in question down to an appropriate level – between 6” – 12” – and then back fill with clean soils. These soils would then be mixed with the surrounding area to mitigate relatively high levels of SAR and Conductivity. Approximately 70 cubic yards were to be excavated and replaced during the operation.

It was noted that all the sample locations exhibited elevated arsenic levels, including those in the background. As a result, arsenic was being disregarded as a cleanup parameter for Mull’s remedial action objectives. However, during this operation Mull would take approximately 2 samples at the base of the excavation to determine the level of cleanup that had occurred. These samples would conform to Table 915-1 as appropriate for the state of Colorado.

Soils at this location were to be disposed to Phantom Landfill of Penrose Colorado, EPA #COR000208454 or a similar permitted Colorado or Kansas Facility under an approved waste profile. Clean soils would then be transported and placed in the excavated area as required to re-contour the area. The area was then to be tilled, replanted with an approved NRCS seed mix and slated for reclamation responsibilities.

Landowner Communications

Unfortunately, during the third - fourth quarter of 2022 the landowner directly communicated to Mull that he would not grant us rights to perform any of the remedial activities required for COGCC compliance. The express opinion of the MDC Foremen was that any employees of Mull or outside contractors would be exposed to possible bodily harm were we to attempt those actions. Upon this change of circumstances, Mull consulted with COGCC Reclamation Supervisor Denice Arthur to determine what process was required for forward progress. At the time, it was determined that MDC was to acquire a Land Use Agreement in order to perform the required activities.

Accordingly, Mull's Land Manager, Mike Massaglia made a trip to the Landowners residence. During the attempt to acquire permission via the land use agreement, Monte C. Richardson, the landowner indicated he was not going to allow Mull onto his property for any reason, particularly related to remedial/reclamation processes. He expressed that he wants no outside parties on his land and that he does not want nor require MDC to take any further action to reclaim or restore his land as he is comfortable with the status quo. In response, Mull asked him to sign documentation stating this opinion. Mull is attaching said document for your reference.

As it stands Mull's hands are tied relative to this site location. Mull is more than willing to perform any required remedial/reclamation activities that are required or expected of us by the COGCC or other state or federal agencies. That said, we are not able to begin any work given that the landowner has not released permission to perform said actions on his property and again, has indicated possible physical harm should someone come onto his property without permission. As such, Mull would ask the COGCC to give us guidance on this conundrum as we have exhausted all viable options currently at our disposal.



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Attachments:

Surface Owner Remediation Agreement

Figure 1 – Sampling Locations

Figure 2 – Pending Excavation Area

Table 915 -1 Sampling Results

Lab Report: 60398351

SURFACE OWNER REMEDIATION AGREEMENT

STATE OF COLORADO)
) ss:
COUNTY OF KIOWA)

WHEREAS, Mull Drilling Company, Inc. (Mull) was the operator of the Pattie #2-2 (API # 05-061-06780), located in the SW/4SE/4 Section 2, Township 17 South, Range 48 West, Kiowa County, Colorado and constructed a tank battery in the SE/4SE/4 Section 2, Township 17 South, Range 48 West, Kiowa County, Colorado to temporarily store fluids produced from the Pattie #2-2. Said well was plugged and abandoned in November of 2007 and all equipment and tanks were removed.

WHEREAS, through a Form 4 Sundry filed in 2021, Mull was made aware of an approximately 100' x 100' area in which the appropriate 80% vegetative regrowth had not occurred. Mull received verbal permission from Monte C. Richardson and Lori L. Richardson of 22340 US Highway 287, Eads, CO 81036, current surface owner of the SE/4 Section 2, Township 17 South, Range 48 West, Kiowa County, Colorado, to entry the land and verify the presence of any soil impacts. On April 19, 2022 Environmental Professional Charles Kellenhoffer of APTIM Environmental entered the land and took soil samples in 7 locations. After conferring with the COGCC (COGCC Remediation Project #22774) it was determined that Mull is required, based on Colorado Oil and Gas Commission Rules, to excavate the approximately 100' x 100' area down to between 6" to 12" and backfill with clean soils. Contaminated soils are to be hauled off to an EPA approved landfill facility. This procedure is to be at Mull's sole expense.

NOW, THEREFORE, the undersigned does hereby grant Mull permission to enter the SE/4 Section 2, Township 17 South, Range 48 West, Kiowa County, Colorado to perform the procedures laid out in COGCC Remediation Project #22774. Said permission is granted for the term of one (1) year from the date of execution below.

Executed this _____ day of December, 2022.

Monte C. Richardson

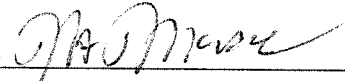
Witness _____

Printed Name

I, Monte C. Richardson, hereby explicitly deny Mull Drilling Company, Inc. permission to enter the SE/4 Section 2, Township 17 South, Range 48 West to perform the procedures laid out above and in COGCC Remediation Project #22774. Executed his 7th day of December, 2022.

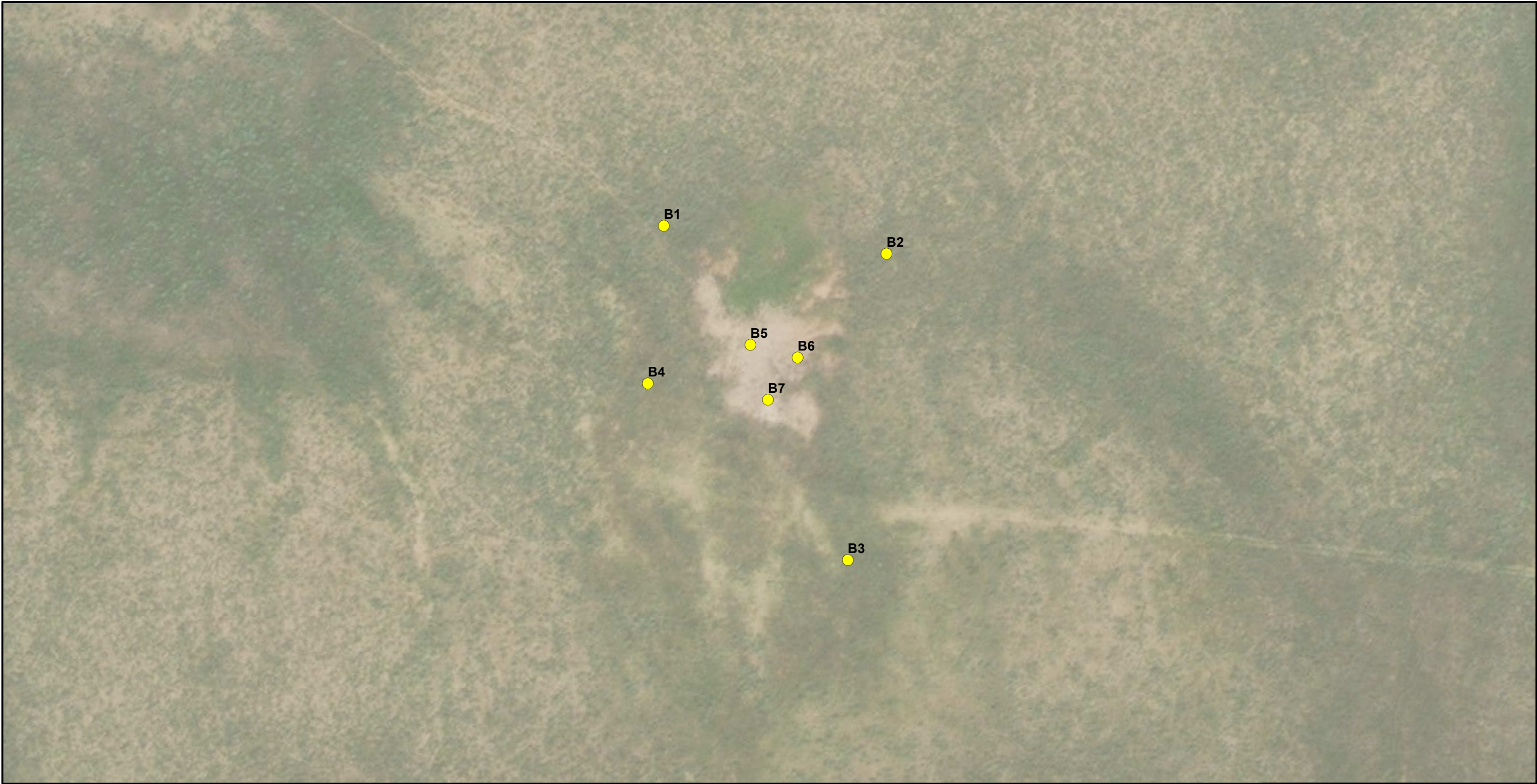


Monte C. Richardson

Witness  _____

Mike Massaglia
Printed Name

F:\Projects\Williams\Pattie\GIS_Documents\Project_Maps\Pattie Sampling Locations.mxd; Analyst: Heather Volmer; Date: 5/19/2022 1:32:21 PM

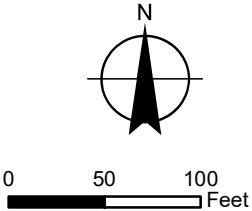



Legend:

● Sample Location

Notes:

1. Background imagery is from ESRI World Imagery basemap, from Maxar, dated August 6, 2021.



Williams (Bargath, LLC)	
Kiowa County, Colorado	
FIGURE NUMBER 1	Pattie 2-2 Kiowa County, Colorado
<div> 6380 S. Fiddlers Green Circle Suite 310 Greenwood Village, CO 80111 www.APTIM.com</div>	

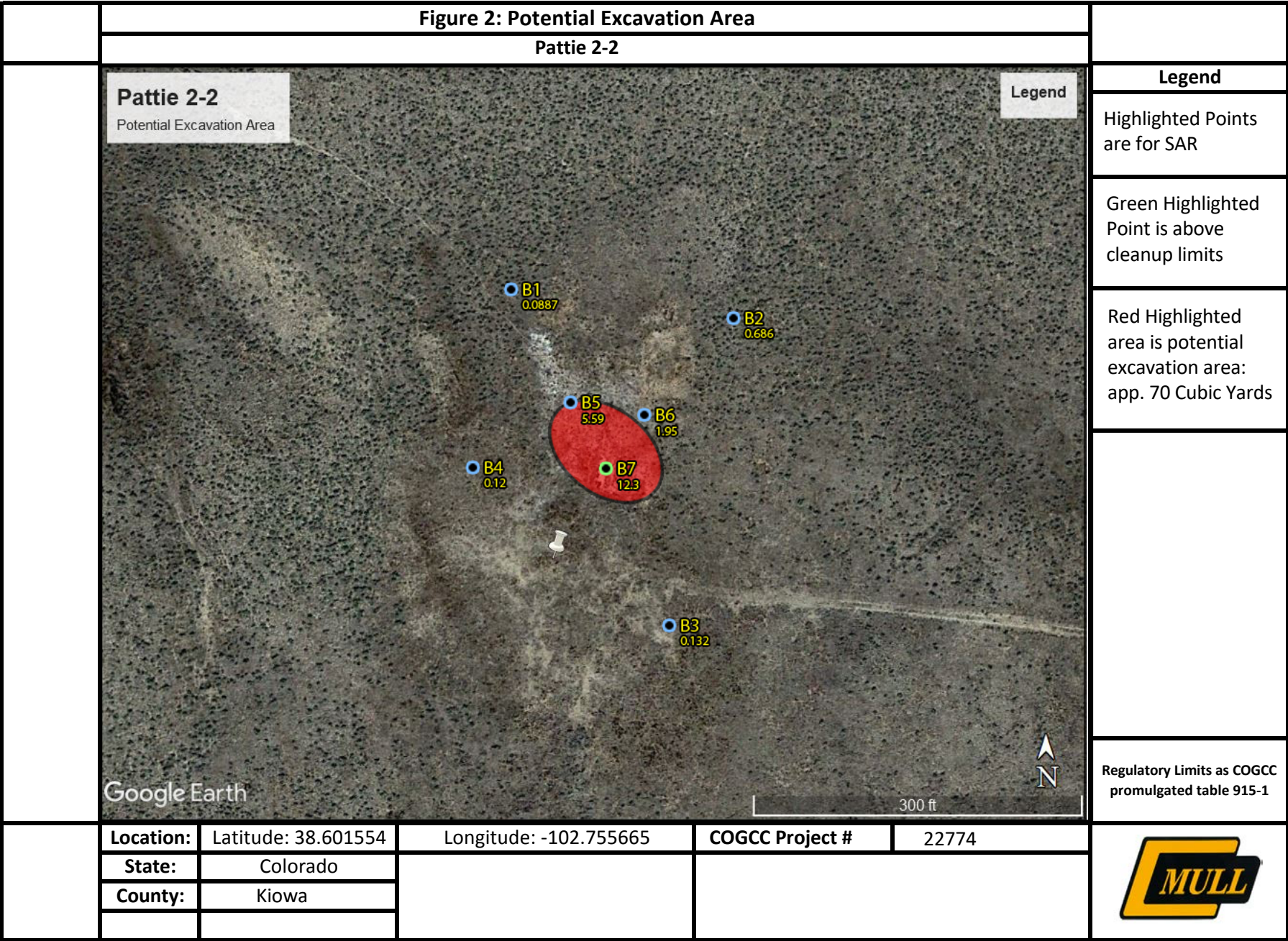


Table 915-1 : Pattie 2-2 Location			4/19/2022						
CLEANUP CONCENTRATIONS			B1 (Background)	B2 (Background)	B3 (Background)	B4 (Background)	B5	B6	B7
Contaminant of Concern	Concentrations		38.602101 -102.756032	38.601962 -102.755157	38.601071 -102.755316	38.601580 -102.756077	38.601760 -102.755729	38.601676 -102.755511	38.601578 -102.755667
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500mg/kg		7.2 J	2.4 J	2.4 J	37.6 J	37.6 J	25.6	39
Soils and Groundwater - liquid hydrocarbons including condensate and oil	below visual detection limits		None	None	None	None	None	None	None
Soil Suitability for Reclamation									
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm		0.0386	0.0121	0.0124	0.0127	3.18	1.01	2.06
Sodium adsorption ratio (SAR) (by saturated paste method)	<6		0.0887	0.686	0.132	0.12	5.59	1.95	12.3
pH (by saturated paste method)	6–8.3		6.99	8.1	7.92	7.85	8.01	7.85	7.98
boron (hot water soluble soil extract)	2mg/l		0.0524 J	0.00528	0.0101 J	0.0118 J	0.984	0.166	1.75
Organic Compounds in Groundwater									
benzene	5µg/l		NA	NA	NA	NA	NA	NA	NA
toluene	560 to 1,000µg/l		NA	NA	NA	NA	NA	NA	NA
ethylbenzene	700µg/l		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
naphthalene	140µg/l		NA	NA	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	67µg/l		NA	NA	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	67µg/l		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
chloride ion	250mg/l or <1.25 X local background		NA	NA	NA	NA	NA	NA	NA
sulfate ion	250mg/l or <1.25 X local background		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)	0.0077	0.006	0.0094	0.0073	0.011	0.01	0.0065
toluene	490	0.69 (M)	0.011 J	0.0093 J	0.014 J	0.011 J	0.017 J	0.016 J	0.011 J
ethylbenzene	5.8	0.78 (M)	0.0026 J	0.0019 J	0.0030 J	0.0026 J	0.0038 J	0.0038 J	0.0026 J
xylenes (sum of o-, m- and p- isomers = total xylenes)	58	9.9 (M)	0.010 J	0.0083 J	0.014 J	0.011 J	0.018	0.0017	0.012 J
1,2,4-trimethylbenzene	30	0.0081 (R)	0.00088 J	0.0010 J	0.0015 J	0.0013 J	0.0021 J	0.0017 J	0.0013 J
1,3,5-trimethylbenzene	27	0.0087 (R)	ND	ND	ND	ND	ND	ND	ND
acenaphthene	360	0.55 (R)	ND	ND	ND	ND	ND	ND	ND
anthracene	1800	5.8 (R)	ND	ND	ND	ND	ND	ND	ND
benz(a)anthracene	1.1	0.011 (R)	ND	ND	ND	ND	ND	ND	ND
benzo(b)fluoranthene	1.1	0.3 (R)	ND	0.0018 J	ND	ND	ND	ND	ND
benzo(k)fluoranthene	11	2.9 (R)	ND	ND	ND	ND	ND	ND	ND
benzo(a)pyrene	0.11	0.24 (M)	ND	ND	ND	ND	ND	ND	ND
chrysene	110	9 (R)	ND	ND	ND	ND	0.0028 J	ND	ND
dibenzo(a,h)anthracene	0.11	0.096 (R)	ND	ND	ND	ND	ND	ND	ND
fluoranthene	240	8.9 (R)	ND	0.0042	ND	ND	ND	ND	ND
fluorene	240	0.54 (R)	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
1-methylnaphthalene	18	0.006 (R)	ND	ND	ND	ND	0.0046	ND	0.0022 J
2-methylnaphthalene	24	0.019 (R)	ND	ND	ND	ND	0.0054	ND	0.0019 J
naphthalene	2	0.0038 (R)	ND	ND	ND	ND	0.0025 J	ND	ND
pyrene	180	1.3 (R)	ND	0.0032 J	ND	ND	0.0023 J	ND	0.0035
Metals in Soils									
arsenic	0.68	0.29 (M)	2.1	1.8	2	2.2	3.8	2.3	2.7
barium	15000	82 (M)	28.3	24.7	27.3	24.3	168	41.3	96.4
cadmium	71	0.38 (M)	0.085 J	0.098 J	0.080 J	0.074 J	0.25 J	0.14 J	0.29 J
chromium (VI)	0.3	0.00067 (R)	ND	ND	ND	ND	ND	ND	ND
copper	3100	46 (M)	2.3	2.2	2.5	2.6	10.3	3.5	5.5
lead	400	14 (M)	3.7	4	3.4	3.5	8.4	5	5.8
nickel	1500	26 (R)	2.6	2.3	2.8	2.7	9.1	3.7	6.3
selenium	390	0.26 (M)	ND	ND	ND	ND	0.65 J	ND	ND
silver	390	0.8 (R)	ND	ND	ND	ND	ND	ND	ND
zinc	23000	370 (R)	12.2	13.2	12.2	11.2	25.6	16.8	23.1

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.