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ExxonMobil

October 21, 2008

Keith McConnell, Deputy Director
Decommissioning and Uranium Recovery Licensing Directorate
Division of Waste Management and Environmental Protection
Office of Federal and State Materials and Environmental Management Program
US Nuclear Regulatory Commission
Washington, D.C. 20555-0001

RE: Highland Reclamation Project, Docket No 40-102; License No. SUA-1139

Dear Mr. McConnell:

This letter is in response to your August 2008 letter regarding the request to provide a characterization plan to better understand groundwater conditions east and southeast of the site. Specifically, you requested that the characterization plan be developed to further determine 1) conditions in the alluvium in the tributary to the North Fork of Box Creek which is exists to the southwest of the reclaimed tailings impoundment, 2) groundwater conditions in the area north of the above mentioned tributary and 3) water quality in the surface water in the North Fork of Box Creek. The proposed plan to address each of these issues is discussed below.

Existing wells MFG 1-3 and BBL 1-4 (Figure 1) provide data for constituents in the groundwater in the area to the southeast of the reclaimed tailings embankment. Additional data is needed to the south-east of BBL-4 to better determine the extent and concentration of contaminants in this area. Three additional wells are proposed at locations shown on Figure 1. These wells would be completed in the alluvial material and would be approximately 40 feet deep.

Additional wells would also be installed in the area to the north of the above described tributary. These wells would be used to determine the extent and concentration of contaminants, if they exist, to the east of the reclaimed tailings area. The existing well 125, which is completed in the tailings dam sandstone unit, shows some elevated levels of sulfate and uranium that are likely site derived constituents. The new wells would be completed across the tailings dam sandstone and the overlying alluvial materials that are anticipated to exist in these areas. A total of three wells are proposed at locations shown on Figure 1.

Surface water sampling at six locations along the North Fork of Box Creek occurred on August 19, 2008. The locations of these sample sites were determined in consultation with the adjacent land owners (Jeff and Rob Boner) who were present during the sampling. These sample locations are shown on Figure 2. The results of the sampling are shown on Table 1. There is considerable variability in the results, but there is no indication of the stream being impacted by site derived constituents. All the surface water sample results meet the State of Wyoming's stock water criteria. Because the surface water sample locations were in discontinuous pools of water along the creek, the variability in the water quality parameters is likely due to different levels of evapo-concentration of naturally occurring constituents in the surface water. We propose to add regular

surface water sampling to the monitoring program twice a year; once in the spring, and again in the fall.

We anticipate that the wells will be installed November, 2008, weather permitting, or in the 2nd Quarter 2009, if field conditions are unsuitable in November. Once the new wells have been drilled and sampled, the geologic information and the water quality data will be used to update and revise the groundwater protection program.

Please feel free to contact me if you have any additional questions or concerns.

Sincerely,

Mahesh Vidyasagar
Project Manager

Attachments

Cc: Anna Krzyszowska-Waitkus, WDEQ
Bruce Wielinga, Ph.D. - AMEC
Rebecca Bilodeau, CEA – Tetra Tech

Table 1. Results for Box Creek Samples Taken Aug 19, 2008

	Ca	Mg	K	Na	Se	Alkalinity to pH 8.3	Alkalinity to pH 4.5	TDS	Cl	SO4	Bicarbonate Alkalinity	Carbonate Alkalinity	U	Gross Alpha	Ra 226	Ra 228	Th 230
Units	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l as CaCO3	mg/l as CaCO3	mg/l	mg/l	mg/l	mg/l as CaCO3	mg/l as CaCO3	mg/l	pCi/l	pCi/l	pCi/l	pCi/l
WDEQ Lvstk. Std.					*0.05*			*5000.0*	*2000.0*	*3000.0*				*15*	*5**	*5**	
BoxCreek1	43.5	37.0	11.2	199	<0.00030	25.7	62.7	976	8.1	681	11.4	51.4	0.0097	0.8	<0.44	<1.3	<0.2
BoxCreek2	39.9	31.0	16.7	179	0.00052	<0.46	468	772	23.1	141	468	<0.46	0.0324	1.1	0.5	<1.3	<0.2
BoxCreek3	29.7	40.3	13.4	420	0.00032	31.1	452	1,470	37.1	678	390	62.1	0.0500	1.8	<0.23	<1.3	<0.2
BoxCreek4	157	101	9.68	367	<0.00030	<0.46	176	2,170	98.8	1,380	176	<0.46	0.0040	1.2	<0.20	<1.3	<0.2
BoxCreek5	31.3	19.2	6.67	146	<0.00030	<0.46	260	604	8.0	263	260	<0.46	0.0044	1	<0.22	<1.3	<0.2
BoxCreek6	51.8	30.0	8.74	163	<0.00030	3.2	249	792	31.6	376	242	6.4	0.0053	1.4	<0.21	<1.3	<0.2

*Radium 226 and Radium 228 *combined* standard is 5 pCi/L

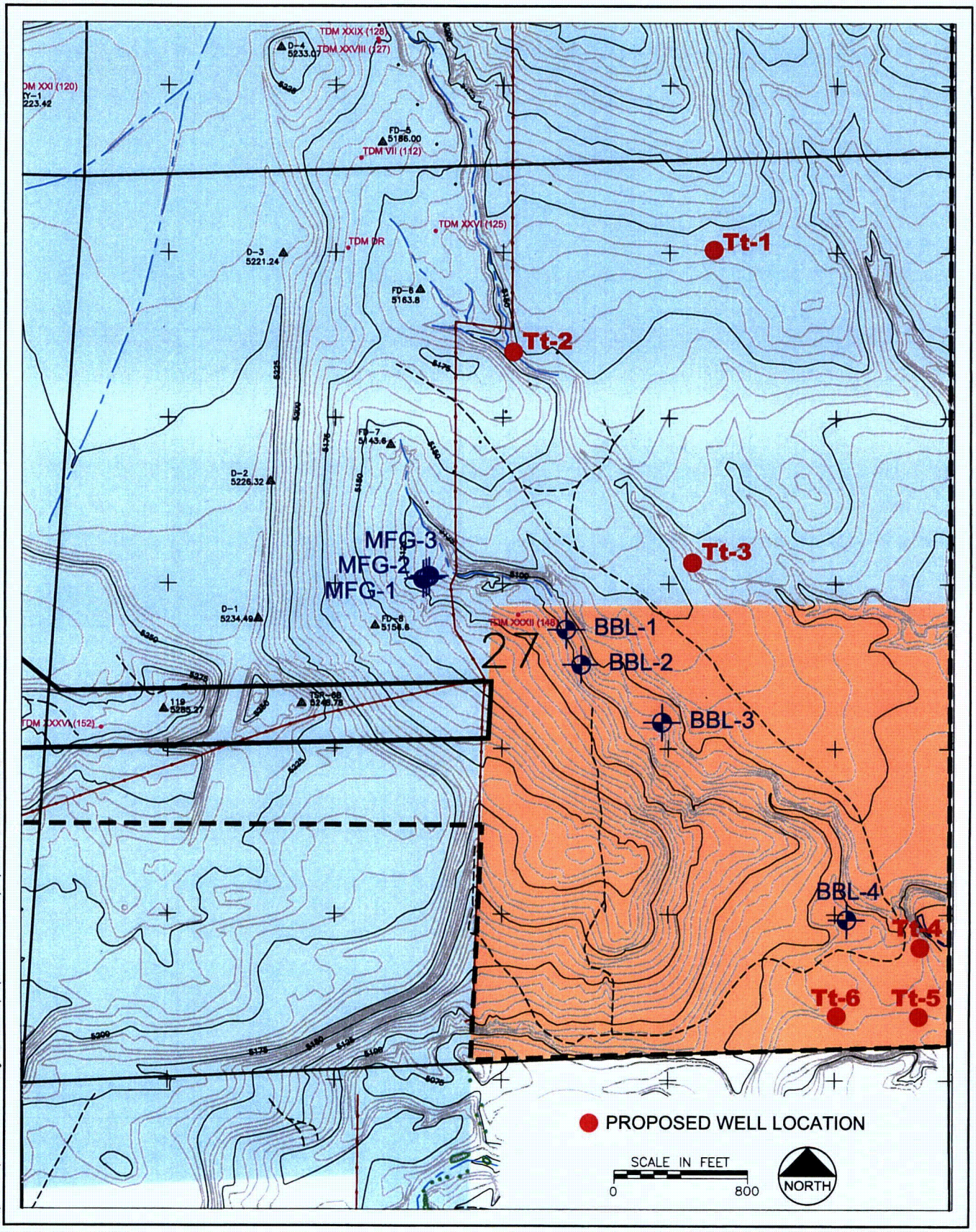

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Figure 1
Proposed Well Locations

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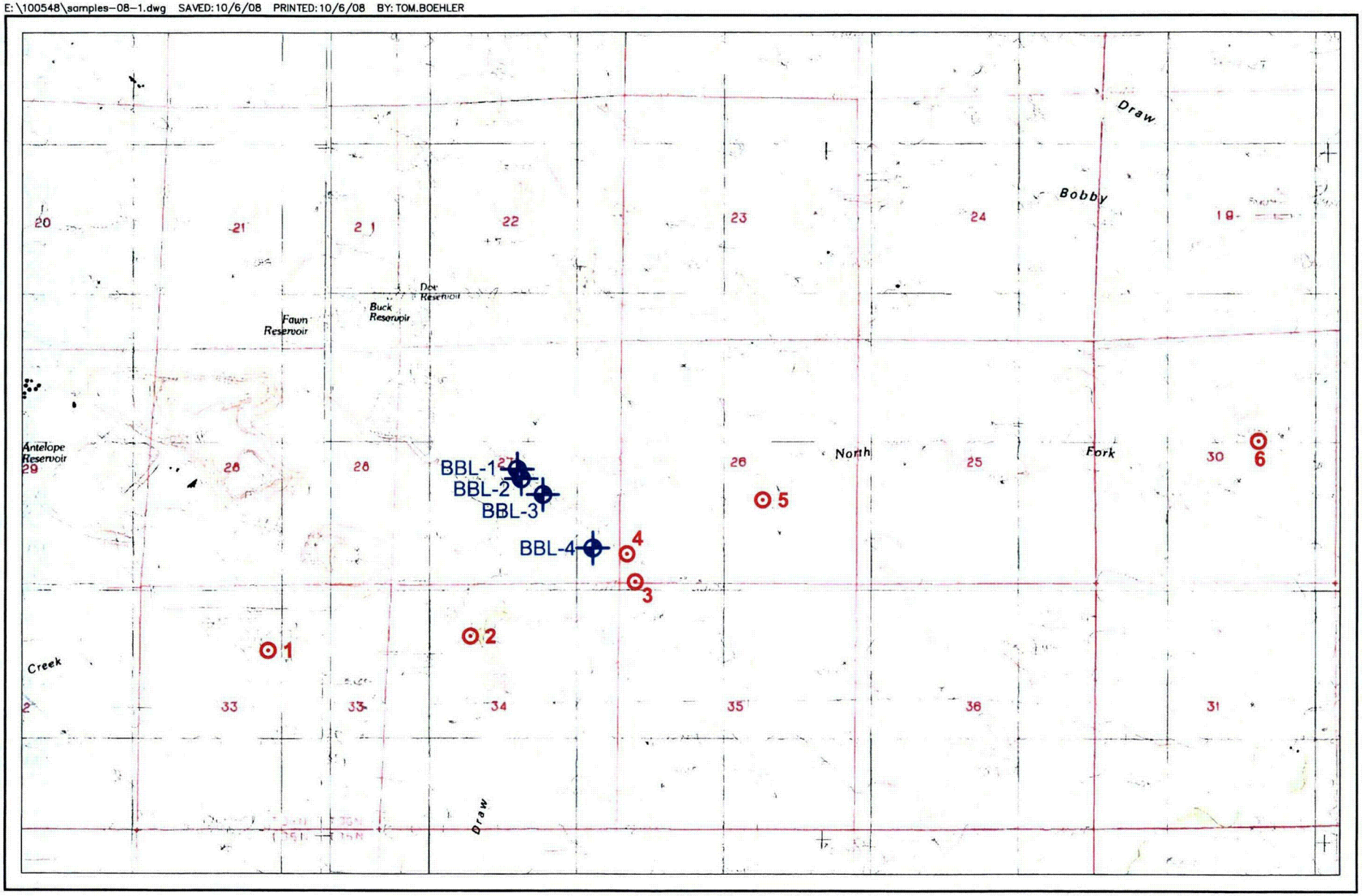

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SCALE IN FEET
0 3000

NORTH

Figure 2
2008 Sample Locations