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October 5, 2009

RECEIVED E-Mail
MAR 18 2010
Div. of Oil, Gas & Mining

Mr. Mark Dotson
Western Utah Copper Company
1208 South, 200 West
Milford, UT 84751

Dear Mr. Dotson:

Subject: Ground Water Discharge Permit-By-Rule for New Tailings Impoundment

The Division of Water Quality (DWQ) has completed a review of the "Mill Tailings Impound Basin Technical Report and Permit Application", dated September 2, 2009, as well as other information submitted in response to questions from DWQ. Western Utah Copper Company intends to construct a lined impoundment to contain mill tailings and allow reclamation and re-use of process water from its flotation ore mill located in SE 1/4, NW ¼, Section 7, Township 27 South, Range 11 West, SLBM, Beaver County, Utah. Currently, process water discharges from the mill building and flows downslope to an unlined pit, due to unforeseen difficulties with the mill process and equipment.

The following factors are relevant for determining the appropriate regulation of this new facility under the Utah Ground Water Quality Protection Rules (UAC R317-6):

1. The mill and proposed tailings impoundment are located on a sloping pediment surface on the south flank of the Beaver Lake Mountains. Pits within the footprint of the impoundment and nearby drill holes suggest that the site is underlain by a thin layer of alluvial sand, gravel and silt over crystalline igneous bedrock.

2. Ground water data in the area is sparse, but two monitoring wells were drilled in 1996 approximately 200 feet south of the new tailings impoundment site. One boring encountered 50 feet of alluvium over igneous bedrock and the other boring encountered bedrock at the surface. Ground water was encountered in these wells at depths of approximately 250 feet below ground surface (bgs) within the igneous bedrock. After well completion and development, the static water level in these wells then rose to 80 feet bgs. Ground water in the igneous bedrock is likely contained within fractures. Samples from these wells indicate that ground water in the area is Class II Drinking Water Quality, with total dissolved solids content ranging from 785 to 1,010 mg/l.

3. The geologic structure at the impoundment site could potentially allow ground water recharge to aquifers in the Milford Valley to the east and south of the site, but the region has a very dry climate and actual recharge from the area around the impoundment site is probably very small.

4. The mill uses a flotation process in which dilute concentrations of reagents with generally low toxicity are added to the feed stock, and most of these reagents are removed from the tailings waste stream along with the ore minerals. MSDS sheets for these reagents are contained in DWQ's administrative files for this case. An analysis of the tailings water showed a total dissolved solids content of 2,160 mg/l, and concentrations of metals below Utah ground water quality standards, though concentrations of arsenic and selenium were near the ground water quality standard of 0.05 mg/l for both of these metals.

5. Although a construction permit has not been issued yet, it is our understanding that the tailings impoundment will be lined with a single flexible membrane liner that will limit subsurface leakage to *de minimis* levels. In addition, the removal and recycling of tailings water will prevent hydraulic head to build up on the liner.

Under UAC R317-6-6.2.A.25 of the Administrative Rules for Ground Water Quality Protection, facilities may be granted permit-by-rule if the Executive Secretary determines after a review of the application that the facility will have a *de minimis* actual or potential effect on ground water quality. UAC R317-6-6.2.B stipulates that no facility permitted by rule under R317-6-6.2.A may cause ground water to exceed ground water quality standards or the applicable class TDS limits in R317-6-3.1 to R317-6-3.7. If the background concentration for affected ground water exceeds the ground water quality standard, the facility may not cause an increase over background.

Ground water discharge permit-by-rule is hereby granted under the condition that a Construction Permit is obtained from DWQ prior to any construction activities for the proposed tailings impoundment. It is our understanding that the basin will be constructed with a synthetic flexible membrane liner and operated in such a manner as to limit any leakage to the subsurface to *de minimis* levels. Western Utah Copper Company must notify DWQ if there are any changes in the milling process including flotation reagents and any other factors cited during the operational life of the tailings impoundment.

Please contact Mark Novak at (801) 538-6518 or mnovak@utah.gov if you have any questions about this letter or other ground water protection issues.

Sincerely,

RECEIVED E-Mail
MAR 18 2010
Div. of Oil, Gas & Mining

Rob Herbert, P.G., Manager
Ground Water Protection Section

RFH/MTN

cc: Southwest Utah Public Health Department
John Chartier, Southwest District Engineer

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