



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
LANSING



STEVEN E. CHESTER
DIRECTOR

September 14, 2005

Mr. Jon Cherry
Kennecott Minerals Company
1004 Harbor Hill Drive
Suite 103
Marquette, Michigan 49855

Dear Mr. Cherry:

We are responding to your requests made at our August 31, 2005, meeting regarding your proposed activities on the Eagle mineral deposit. In this meeting, you requested that we determine if Rule 323.1098 would apply to the mercury situation and, if so, how Subsection (4)(b) of the Rule would be applied.

At the meeting, the situation you described was for a groundwater discharge of 430,000 gallons per day to rapid infiltration beds. This discharge would be treated with hydroxide precipitation, ion resin (for boron), neutralization, and reverse osmosis prior to discharge. The primary source of wastewater was from the mine dewatering, with a limited amount coming from onsite runoff. Any process piles onsite would be covered to prevent contact with storm water. The estimated mercury discharge concentration from this treatment system was at or less than 1 ng/l.

The groundwater situation described was that the mine dewatering water originates from an aquifer that is deeper than, and isolated from, the shallow aquifer receiving the discharge. The shallow aquifer moves in a northeast direction and will vent to an eastern tributary of the Salmon Trout River about 5000 feet from the discharge area. The average groundwater flow rate in the shallow aquifer is presently estimated at about 100 to 200 feet per year, with travel times to the eastern tributary of the Salmon Trout River estimated to be 10 to 30 years. The mercury concentration in the surface aquifer is about 0.5 ng/l and the mercury concentrations found in the Salmon Trout River vary between 1 and 4 ng/l, with the higher concentrations found generally in the spring time. We have determined that the Salmon Trout River has a low flow of about 1.2 cubic feet per second (cfs) and a harmonic mean flow of 2.1 cfs near the crossing point with the Triple A Road.

Based on this information, we have the following preliminary determinations:

1. This is an activity pursuant to Part 31 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, that is anticipated to result in a new loading of pollutants, specifically mercury, to the surface waters of the state. This activity also requires compliance with Water Quality Standards. Therefore, based on the information presented to date, we believe that Rule 323.1098 applies to this activity.
2. Regarding the application of Rule 323.1098(4) (b), this subrule will apply for the mercury anticipated in the discharge. Specifically, (b) (i) and (b) (iii) of the subrule will be the applicable portions of this subrule. Kennecott must evaluate both of these portions and propose to the Department of Environmental Quality (DEQ) how these requirements will be fulfilled. For (b) (i), the demonstration needs to address how Kennecott will minimize the new loading of mercury by implementation of cost-effective pollution prevention

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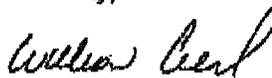
techniques. For (b) (iii), Kennecott must provide an evaluation of the most advanced treatment techniques which have been adequately demonstrated and are reasonably available. Kennecott may also propose innovative or experimental technology for consideration.

3. Please note that the Antidegradation Demonstration must address all nine of the Lake Superior basin-bioaccumulative substances of immediate concern (LSB-BSIC), as listed in Rule 323.1043(pp).
4. It also appears that a mercury limit of 1.3 ng/l will be applied to this discharge. Using the assumption that the treated discharge will be at or less than 1 ng/l before the Rapid Infiltration Beds, this discharge will meet the water quality requirements.

We also understand that Kennecott is planning on collecting additional data pertaining to the shallow aquifer, including a shallow aquifer test. Please note that we need a final determination on the hydrogeological studies to be submitted as part of the groundwater discharge permit application.

These preliminary determinations are based on the information we received at the meeting, and are subject to change as more information becomes available. If you have any questions, please contact Eric Chatterson, at 517-241-1358, or you may contact me.

Sincerely,



William Creal, Chief
Permits Section
Water Bureau
517-355-4114

wc/sea

cc: Eric Chatterson
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