

**March 24, 2014  
806 W. Kaye  
Marquette, MI 49855**

**COMMENTS REGARDING GROUNDWATER DISCHARGE  
PERMIT  
Eagle Mine, GW 1819162**

**The proposed Eagle Mine is located on the Yellow Dog Plains in northwest Marquette County. The Plains are a 20 x10 mile elevated, water-rich, landform about 800 feet above Lake Superior and 10 miles from the Lake. It contains the headwaters of at least five rivers and streams and numerous springs and seeps. The mine site is directly underneath the Salmon Trout River.**

**The permit allows discharge of up to 504,000 gallons per day of treated mine contact water through a Treated Water Infiltration System (TWIS). The TWIS was originally designed to be a Treated Water Injection System requiring deep well injection of the effluent, and regulated by the USEPA rather than the MDEQ. After negotiations with the USEPA, the mining company was allowed to design a groundwater infiltration system consisting of a shallow array of rapid infiltration beds covered with styrofoam to avoid freezing in the winter.**

**The permit says under General Conditions (p. 9), that "The discharge shall not be likely to be become,**

**injurious to the protected uses of the waters of the state". Waters of the state include groundwater, lakes, including Lake Superior, rivers and streams.**

**The permit allows displacement and relocation of 504,000 gallons per day of underground water, most of which has never been above ground, to the shallow infiltration system. If the area could absorb that much extra water, it wouldn't be covered by wetlands, rivers and seeps. At least a portion of this water will become surface water, not groundwater. There is no adequate hydrogeological data to assess this groundwater- to - surface water excursion. Regulatory treatment of it as groundwater is not appropriate without a thorough hydrogeological study. In 2004, a petition was circulated to local governmental officials and citizens asking for a US Geological Survey assessment of the mine site. Over 1000 signatures were gathered, but because no funds were made available, no such survey was done.**

**The mining company conducted at least four hydrogeological studies. Some of the studies directly contradicted one another as to the direction of flow of groundwater. These studies must be reviewed and rationalized as to the "true" underground water flow. The scenario where the groundwater flows to the seeps with a residence time of one-and-a-half years is particularly suspect. An early model by the mining company predicted a 15 ft. mound of water emanating from the TWIS. This volume of water may well change**

**the course of water flow, with unknown impact on the hydrology of the Yellow Dog Plains.**

**The permit also says under General Conditions, that "The discharge shall not cause runoff to, ponding on, or flooding of adjacent property, shall not cause erosion, and shall not cause nuisance conditions".**

**The proposed daily discharge of effluent is equivalent to 2000 tons of water. To truck it away would require 40 fifty-ton trucks. Even if this discharge was pure, distilled water, it represents a large, unknown, impact to the Yellow Dog Plains water system. If a significant portion of the water were to enter the river watersheds, erosion and water quality degradation would result. Ponding and flooding are likely.**

**Given the present questions about the hydrogeology of the Yellow Dog Plains, the mine should not be permitted to proceed to ore extraction until further studies are performed.**

**Thank you for the opportunity to present these comments.**

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