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GOVERNOR

STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

LANSING



REBECCA A. HUMPHRIES  
DIRECTOR

January 28, 2008

Mr. Jonathon C. Cherry, P.E.  
Kennecott Eagle Minerals Company  
1004 Harbor Hill Drive, Suite 1003  
Marquette, Michigan, 49855

Dear Mr. Cherry:

**SUBJECT: Surface Use Lease and Mining and Reclamation Plan for the Eagle Project**

Thank you for meeting with Department of Natural Resources (DNR) and Department of Environmental Quality (DEQ) staff on January 11 and January 18, 2008, to discuss Kennecott Eagle Mineral's (Kennecott) Eagle Project proposed Surface Use Lease and proposed Mining and Reclamation Plan. As a result of the meetings and additional written information you provided on January 22, 2008, the items brought up in our December 7, 2007 letter have been resolved as described more fully below:

**SURFACE USE LEASE**

Kennecott provided the Topsoil Management Plan regarding removal, storage, and monitoring of topsoil from excavated areas. The DNR staff believes it will be difficult to obtain restoration of topsoil over a large area commensurate with the pre-mining thickness.

Surface Use Lease Exhibit C has been modified to require additional topsoil of similar character to be brought in from an outside source if Kennecott is unable to restore topsoil on the Premises to a thickness present at pre-mining conditions. The DNR also modifies the Mining and Reclamation Plan to incorporate the topsoil handling practices and procedures identified in the Topsoil Management Plan.

Kennecott provided further analysis of the alternate locations (Kennecott Analysis of Surface Location A-D) it considered for the portal and surface facility. The DNR concurs that the proposed location for the portal and surface facility is a preferred location. Since approximately one-half of the ore body lies on state-owned minerals, the State of Michigan has an interest in having its minerals developed from a preferred location.

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## MINING AND RECLAMATION PLAN AMENDMENTS

Kennecott provided the enclosed Subsidence Monitoring Station Map depicting the monumented sites to be used for surface and subsurface monitoring. One surface and one subsurface monitoring site will be placed directly over the ore body. Kennecott proposed monthly monitoring which exceeds the quarterly monitoring requirement contained in the DEQ Mining Permit. The DNR was concerned that the one-half inch monthly, and two-inch cumulative standards proposed to determine that subsidence occurred might not be fully protective of the resources. The standard of deflection allowed under the DEQ Mining Permit is essentially zero movement (not counting possible movement due to gravitational effects) at a one-centimeter level of accuracy.

The DNR modifies the Mining and Reclamation Plan to reflect Kennecott's frequency of monthly monitoring, at the array of monitoring sites identified in the attached map. Any net displacement of one centimeter or more from pre-mining conditions will be considered subsidence and will cause corrective action under the DEQ Mining Permit condition E8.

Kennecott provided the TDRSA Leak Detection System and Response Action Plan. However, Kennecott indicated a leak is indicated if both the sulfate level exceeds 500 mg/L and a flow rate greater than 25 gallon acres/day (1500 gallons) is observed. DEQ Mining Permit condition F22 states that either condition indicates a leak and is cause for corrective action.

The DNR modifies the Mining and Reclamation Plan to reflect the TDRSA Leak Detection System and Response Action Plan. For clarification, DEQ Mining Permit Condition F22 shall be the basis to determine if a leak is present in the TDRSA.

The DNR was concerned that the DEQ Mining Permit did not appear to have an upper limit on the volume of water produced from the mine and asked Kennecott to provide an action plan to address high water production rates. Kennecott's response might allow high rates of water production for an extended time prior to taking corrective action. Further consultation with the DEQ and Kennecott found the parameters affecting maximum allowed water flow are interdependent on factors such as the maximum capacity of the wastewater treatment facility, discharge rate of surface contact water, and the modeled ability of the mine to produce water without affecting surface and ground water. Importantly, the DEQ Mining Permit relies on actual data from wetland and ground water monitoring to confirm there are no impacts to the surface and ground water resources.

For clarification, the monitoring requirements in Section L of the DEQ Mining Permit shall be the basis to determine maximum allowed flow rate from the mine.

Kennecott provided an Impermeable Surface Inspection and Surface Repair Plan to address the discovery and repair of cracks in the impermeable surfaces. Through

further discussion with Kennecott, they informed the DNR they will use automatic sump pumps to keep impermeable collection areas pumped down to a minimum volume.

The DNR modifies the Mining and Reclamation Plan to incorporate the Impermeable Surface Inspection and Surface Repair Plan. In addition, all collection sumps will utilize automatic sump pumps to keep collected volumes at a minimum.

Kennecott provided the Portal Abandonment Plan to prevent access to the portal plug.

The DNR modifies the Mining and Reclamation Plan to incorporate the Portal Abandonment Plan to address abandonment of the portal near the surface.

Based on the above stated clarifications and amendments to the Mining and Reclamation Plan and Surface Use Lease, staff will recommend the Director approve both the Surface Use Lease and Mining and Reclamation Plan at the February 7, 2008, Natural Resources Commission meeting.

Please contact me at the number below if you have any questions.

Sincerely,



Thomas Wellman, Manager  
Minerals and Land Management Section  
Forest, Mineral and Fire Management Division  
517-373-7666

cc: Mr. Jim Sygo, DEQ  
Mr. Harold Fitch, DEQ  
Mr. Joe Maki, DEQ  
Ms. Arminda Koch, DNR  
Ms. Lynne M. Boyd, DNR  
Ms. Debbie Begalle, DNR  
Mr. Milt Gere, DNR  
Mr. William Brondyke, DNR