UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 29 2012

REPLY TO THE ATTENTION OF:

WN-16J

Mr. Jeff Stollenwerk
Industrial Water Quality Permits
Minnesota Pollution Control Agency
525 Lake Ave. South, Suite 400
Duluth, Minnesota 55802

Re: Mesabi Nugget Delaware, LLC

Dear Mr. Stollenwerk:

The U. S. Environmental Protection Agency has reviewed the draft public noticed National Pollutant Discharge Elimination System (NPDES) permit for Mesabi Nugget (MN0067687). We have the following comments. We appreciated the opportunity to discuss these comments in calls with the Minnesota Pollution Control Agency over the last several weeks.

1. ***Variance based limits (40 CFR 131.10 and 122.44(d))*** - The interim limits for total dissolved solids (TDS), bicarbonates, hardness, and specific conductivity presume that EPA will approve a variance request for those parameters. This permit cannot be issued with the interim limits included unless EPA first approves the variance. If a variance is approved any corresponding conditions must be incorporated into the permit. Additional comments regarding EPA's expectations with respect to requesting a variance are provided below.

2. ***Variance schedule (40 CFR 131.10)*** – The variance schedule in the permit includes studies and an eventual plan for a path forward due with the permit renewal application, 4.5 years into the permit term. The schedule presumes that a variance will be approved in the next permit term as well as this permit term. If a variance is approved, the schedule in the permit will need to be modified in order to comply with any conditions of the variance. EPA expects that an appropriate schedule be included in the proposed permit which identifies a date when water quality-based effluent limits will be met. Milestones included in the schedule may include studies for a short term and must include actions that the facility will undertake to work toward meeting water quality-based effluent limits.

3. ***Chronic whole effluent toxicity (WET) Limit (40 CFR 122.44(d))*** – Data available to EPA indicates that the Mesabi discharge has reasonable potential to cause or contribute to chronic toxicity in the receiving waters. Therefore, a WET limit is required under 40 CFR 122.44(d), unless the permit includes water quality-based limits for pollutants that cause WET (see 40 CFR 122.44(d)(1)(v)). A WET limit must be derived from and comply with water quality standards and should be consistent with the *Technical Support Document for Water Quality-based Toxics Control* (TSD) (EPA/505/2-90-001).

4. ***Chronic WET monitoring frequency (40 CFR 122.44(i) and 122.48(b))*** – The draft permit requires analysis of WET one time per year. Consistent with sections 5.5.3 and 5.7.5 of the TSD, samples should be collected at a frequency consistent with the frequency used for limit development, and considering the factors listed in section 5.7.5 of the TSD. Samples must be collected during discharge.

5. ***Permit as a shield (33 USC 1342(k))*** - The permit application identifies a discharge at SD004 from the Area Pit 1. EPA understands that this outfall is not active; however, its inclusion in the application coupled with issuance of the permit could be construed by the permittee to authorize the discharge at this location despite the fact that the permit does not include any effluent limitations, prohibitions, or conditions for such a discharge. Please add an explicit prohibition on a discharge from this location in the permit to eliminate any ambiguity.

6. ***Sulfate fate and transport study*** – This study should have a requirement to examine sulfate buildup in the receiving streams and sediments as well as sulfate transformation. At a minimum, EPA would like to see monitoring for levels of sulfate and hydrogen sulfide downstream in ambient water and sediment to gauge sulfate or hydrogen sulfide levels in the water and determine whether they are accumulating in the sediment in Second Creek and the Partridge River. Since Minnesota is implementing the first seasonal application of its Class 4A (wild rice) water quality standard, it would be helpful in this permit to track any changes due to the seasonal discharge, while the State completes its much more comprehensive wild rice study.

Expectations for variances from water quality standards can be found in EPA's *Water Quality Standards Handbook* available at: http://water.epa.gov/scitech/swguidance/standards/handbook/chapter05.cfm#section3. For EPA to approve a variance from water quality standards granted by a state, the state should provide documentation that addresses the considerations in the *Handbook.* Documentation submitted to date by the state of Minnesota for Mesabi Nugget is not sufficient to demonstrate that controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act would result in substantial and widespread economic and social impacts. To approve a variance from water quality standards for specific conductivity, hardness, alkalinity, and TDS, consistent with federal regulations at 40 CFR 131.10(g), the following issues must be addressed:

a. EPA is aware of other facilities with similar water quality issues as Mesabi Nugget that have achieved compliance with water quality-based effluent limits through the use of treatment technologies such as reverse osmosis and crystallization. Mesabi Nugget has not demonstrated that existing technologies are not available to meet water quality-based effluent limits for the parameters for which Mesabi Nugget is seeking a variance. Also, it is unclear from the information provided to EPA thus far what the impact is to Mesabi Nugget and the surrounding community if Mesabi Nugget were compelled to comply with limits based on Minnesota's water quality standards through application of these control technologies to their effluent. For EPA to approve a variance, the record provided to EPA must demonstrate that attaining the water quality standards would require controls more stringent than those required by sections 301(b) and 306 of the Clean Water Act, and application of those controls would result in substantial and widespread social and economic impact. To date, Mesabi Nugget has provided estimates of costs of wastewater treatment, but has not provided information that shows how being compelled to bear these costs would cause substantial and widespread social and economic impacts. We requested this information on January 11, 2012. We recommend using EPA's *Guidelines for Economic Analyses*, located at

http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html to document the economic impacts.

b. Consistent with EPA guidance, any variance submitted to EPA for approval should also include steps to be taken during the life of the variance to make reasonable progress toward attaining the water quality standards. The materials presented to EPA thus far indicate that Mesabi Nugget will be considered to be making reasonable progress if, upon completion of a scrubber optimization study required by their air permit, Mesabi Nugget completes a water balance study, a chemical balance study, and a pollutant minimization study. Numerous studies (i.e., *Dissolved Solids and Chemical Balance Study for Mesabi Nugget Phase II Project,* 520 pp., Dec 09, June 2011; *Area 1 Pit Water Treatment Evaluation in Support of the Nondegradation Analysis, Mesabi Nugget Phase II Project*, June 2011; *Toxicity Identification Evaluation 2008-2011 Study for the Mesabi Pits, Mesabi Nugget Phase I Project*, June 2011)) have been completed, and these studies include extensive discussion of the Area 1 Pit. It is not apparent to EPA why the additional water balance, chemical balance, and pollutant minimization studies need to be undertaken to identify and implement actions to improve effluent quality. An explanation must be provided for why existing data are not sufficient and why additional studies are needed to make wastewater treatment technology decisions. If additional studies are still warranted, it is incumbent upon Mesabi Nugget to do that which is possible now to reduce existing contaminants in the pit discharge, concurrent with the studies, during the life of the permit.

c. If, based on the submittal of the information in the preceding two paragraphs, it is determined that a variance is warranted, Minnesota must protect existing uses and ensure compliance with its anti-degradation policy. The interim limits presented in the draft permit for TDS are 1160 mg/L as a monthly average and 1228 mg/L as a daily maximum, and for specific conductance 1889 $\mu$S/cm as a monthly average and 1965 $\mu$S/cm as a daily maximum. MPCA has stated that these limits were derived from predictions made by Mesabi Nugget in support of their Draft Environmental Impact Statement. The reported effluent quality for TDS for the period of January to June 2010 was 843 mg/L on average and 871 mg/L as a maximum and for specific conductance 1204 $\mu$S/cm on average and 1244 $\mu$S/cm as a maximum.

The document, *Area 1 Pit Water Treatment Evaluation in Support of the Nondegradation Analysis Mesabi Nugget Phase II Project*, (June 2011) states:

> In addition to these specific chemical parameters, the water in the Area 1 Pit has shown intermittent low-level chronic toxicity to *Ceriodaphnia dubia* (*C. dubia*). Identifying the specific source of toxicity is the subject of an ongoing toxicity identification evaluation (TIE) study. As indicated in Table 2-1, the TDS water quality standard referenced is 700 mg/L. Achieving this concentration of TDS in the Area 1 Pit discharge may help to mitigate the current intermittent toxicity issues. . . For the test species *C. dubia*, the reference toxicant is sodium chloride. The reference chronic IC25 for the laboratory conducting the WET testing for Mesabi Nugget (Environmental Toxicity Control, Inc.) is approximately 800 mg/L total dissolved solids (TDS) as sodium chloride. Therefore, water with a TDS concentration less than 800 mg/L should pass the WET test because solutions that consist of just sodium and chloride are generally more toxic than solutions with similar TDS levels but with a broader array of ions. Hence, using a TDS target of 700 mg/L should be conservative for achieving a non-toxic condition. (*Area 1 Pit Water*

*Treatment Evaluation in Support of the Nondegradation Analysis Mesabi Nugget Phase II Project*, page 5, June 2011.)

Based on this information, it appears that the interim limits proposed to complement the variance would not protect existing aquatic life uses. If true, this would be inconsistent with Minnesota's water quality standards at Minn. R. 7050.0185, Subpart 1:

> Existing beneficial uses and the water quality necessary to protect the existing uses must be maintained and protected from point and nonpoint sources of pollution.

To be consistent with Minnesota's antidegradation policy, the final variance must ensure protection of existing aquatic life uses. In addition, the permit must be clear that despite the variance, Mesabi Nugget must comply with the WET limit in the permit.

MPCA should resolve the issues identified in each of the above comments.

After the close of the comment period, please submit the proposed permit and variance to EPA along with a copy of all comments received during the public comment period and MPCA's responses to the comments. Please submit documentation generated by Mesabi Nugget and/or MPCA to satisfy 40 CFR 131.10(g) together with a certification by the State Attorney General or other appropriate legal authority within Minnesota that the variance was duly adopted pursuant to Minnesota law. EPA will then review the revised proposed permit under 40 CFR 123.44 and we will review the variance consistent with section 303(c) of the Clean Water Act, 33 USC 1313(c), and 40 CFR 131.21. Please contact either of us if you have any questions.

Sincerely,

Kevin M. Pierard, Chief
NPDES Programs Branch

Linda Holst, Chief
Water Quality Branch

cc: Kate Frantz, MPCA