



# Minnesota Pollution Control Agency

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January 11, 2008

Mr. William Cole Storm  
Minnesota Department of Commerce  
Energy Facility Permitting  
85 7<sup>th</sup> Place East – Suite 500  
St. Paul, MN 55155-2198

RE: Minnesota Pollution Control Agency Comments on the Draft Environmental Impact Statement for the Mesaba Energy Project (MN PUC Docket #E6472/GS-06-668; DOE/EIS-0382D)

Dear Mr. Storm:

Thank you for the opportunity to review the Draft Environmental Impact Statement (DEIS) for the proposed Mesaba Energy Project. The Minnesota Pollution Control Agency (MPCA) has the following comments and concerns:

## I. AIR

### **Industrial Air Quality Permitting**

Please contact Marshall Cole (507-280-2992) if you have questions regarding our comments under this section.

Although the DEIS states (on page 5.3-16) that Selexol could be considered as an enhancement to mitigate unwanted environmental consequences due to sulfur dioxide emissions, the MPCA understands that the combustion turbine sulfur dioxide emissions are based on the use of methyl diethanolamine (MDEA) for removal of syngas sulfur compounds (primarily hydrogen sulfide) to a level of 50 ppmv. The Final EIS should reflect the use of Selexol because the use of Selexol is a cost-effective technology for syngas sulfur removal to a level of 20 ppmv or less, resulting in lower sulfur dioxide emissions and meets the required application of Best Available Control Technology (BACT) as required by the Clean Air Act. This approach will also address impacts Class 1 areas and regional haze issues.

The DEIS also states (on page 5.3-17) that selective catalytic reduction (SCR) could be considered as an enhancement to mitigate unwanted environmental consequences due to nitrogen oxides emissions. However, the MPCA understands that combustion turbine nitrogen oxide emissions are based only on the use of nitrogen injection into the syngas before combustion in the combustion turbines to reduce nitrogen oxides formation to a level of 15 ppmv. The Final EIS should reflect the reduction in nitrogen oxide emissions achieved through the application of SCR because the application of SCR is technically feasible to further reduce nitrogen oxides emissions to a level of 3 ppmv. This may be required to fulfill BACT requirements based on the required cost analysis and is a critical step in addressing regional haze concerns (see discussion below).

The DEIS reports that as many as four non-road diesel engines will be used at the facility. These engines will be a 2,000-kW emergency generator, a 350-kW emergency generator, and one or two 300-horsepower fire pump engines. The Final EIS must indicate the emissions tier that each engine will belong to when installed. For Best Available Control Technology purposes, these engines must meet the highest emissions tier commercially available (Tier II or Tier III, depending on engine size).

The Material Handling Systems Section of the DEIS (on page 2-35) stated that wet spray dust suppression systems will be employed. However, in its September 4, 2007, e-mail transmittal to Marshall Cole of the MPCA, the project proposer had committed to installing a baghouse to control particulate matter (PM) emissions associated with the unloading of coal from railcars. The Final EIS should reflect this change.

Figure 2.2-1 (on page 2-15) shows fugitive emissions (FS-004) from gasification, syngas treating, and mercury removal processes. These fugitive emissions likely include hydrogen sulfide, carbon monoxide, and other gases. The Final EIS should include a discussion of leak detection and repair to reduce these emissions. Excelsior submitted a leak detection and repair plan to the MPCA in June 2007 and the Final EIS should reflect this.

### **Air Quality Dispersion Modeling**

Please contact Ruth Roberson (651-296-7349) or Christopher Nelson (651-296-7750) if you have questions regarding our comments under this section.

### **Class II: Prevention of Significant Deterioration (PSD) Increment, National Ambient Air Quality Standard, and Minnesota Ambient Air Quality Standard Modeling**

Air quality impacts on Class II areas were modeled for the proposed Mesaba Generating Station. Modeling addressed normal operating conditions as well as transient conditions. The predictive modeling approach and procedures are generally sound (i.e. the use of AERMOD [04300], and the inclusion of nearby and regional sources). Modeled concentrations from PSD increment analysis and AAQS evaluations are below applicable standards. However, MPCA staff must review and verify the emission rate calculations prior to the completion of a more detailed modeling review.

### **Modeling Considerations**

- The Final EIS must specify what meteorological data was used in the dispersion modeling. The DEIS indicated that ISC-type model meteorological data was used. However, it is expected that AERMOD-type meteorological data be used.
- For permitting purposes, it is expected that the modeling will be updated to reflect the most recent meteorological data for northern Minnesota. Please note that AERMOD (07026) is the current version of the federally promulgated air dispersion model (40 CFR 51, November 2005).
- Receptor networks should be consistent with MPCA modeling guidance for PSD analysis (MPCA Guidance for Title V and PSD Air Dispersion Modeling, October 2004). The Final EIS should include justification and/or references to support the modeled network, keeping in mind that the receptor network should focus on resolution and location in addition to following modeling guidance.
- Regarding fugitive PM<sub>10</sub> Sources in Appendix B (B.1.1.1) the Final EIS should include a more thorough discussion of PM<sub>10</sub> emissions from the proposed project roadways. The discussion should include justification and references for characterization, emission calculations, and emission factors (see AP 42 13.2, January 1995).
- In Section 4.3.2.2 (page 4.3-7), the Final EIS should include a reference for the 20 percent reduction in vehicle trips due to carpooling.

### **Class I Areas**

The MPCA typically collaborates with federal land managers (FLMs) from the National Forest Service and National Park Service on the review of Class I (far field) air dispersion modeling and analyses. The Class I areas potentially affected by the proposed Mesaba Generating Station project include the Boundary Waters Canoe Area Wilderness (BWCAW), Voyageurs National Park (VNP), and Rainbow Lakes Wilderness (RLW). Excelsior Energy analyzed Class I Increments and pollutant deposition in

BWCAW, VNP, and RLW. Preliminary result of the Class I Increments and deposition analysis are below levels of concern. However, the modeling results will change based on the controls required to fulfill BACT requirements and should be reflected in the Final EIS.

**Visibility and Regional Haze**

Please contact Catherine Neuschler (651-296-7774) if you have questions regarding our comments under this section.

The DEIS appropriately notes that “visibility issues are significant for the Boundary Waters and Voyageurs Class I areas” and that mitigation measures for the Mesaba facility may be necessary to reduce the facility’s visibility impact. As stated under Section 3.3.3.3, Minnesota must submit to the U.S. Environmental Protection Agency (EPA) a Regional Haze State Implementation Plan that demonstrates reasonable progress towards a 2018 visibility goal for each Class I area within Minnesota. The DEIS correctly notes that, “to achieve reasonable progress toward the 2018 visibility goal, Minnesota may need to implement control measures on other sources (including new sources)...and ensure they do not hinder attainment of visibility goals. Any future control strategies on newer facilities that the MPCA implements, would affect the Mesaba Generating Station” (page 3.3-7).

The MPCA is concerned that this statement does not accurately portray the long term nature of the Regional Haze program; the ultimate goal of the program is a return to natural visibility conditions by 2064, requiring ongoing improvements in visibility. Therefore, it is likely that there will be a need to actively search for emission reductions to attain visibility goals, and that the Mesaba Project would be subject to such emission reductions. The Final EIS should reflect reductions achieved under the application of BACT for SO<sub>2</sub> and NO<sub>x</sub>.

The discussion in Appendix D concerning emission reductions from three Minnesota Power facilities, and the statement that Mesaba’s contributions to visibility impacts “are small relative to existing regional source contributions” (page 4.3-20), also raise concerns that the DEIS does not accurately characterize the long-term need for emission reductions in order to meet visibility goals. The fact that the visibility improvement from Minnesota Power’s emission reductions will generally exceed the visibility impact of the Mesaba Project would be sufficient if the goal was to avoid additional visibility impairment, but does not adequately address the fact that visibility improvement from current conditions is needed. Also, the addition of even a relatively small level of emissions is a concern when overall reductions are needed. The Final EIS needs to reflect this fact.

The MPCA is also concerned with the reliance on the purchase of allowances to mitigate visibility impacts. As noted (page 5.3-17) the facility will be required to purchase Clean Air Interstate Rule (CAIR) allowances equivalent to 100 percent of its sulfur dioxide emissions, and these allowances could “be purchased selectively from sources having modeled visibility impacts on Class I areas, so as to represent an effective means of reducing such impacts from Project operations.” Any use of allowances for mitigation will have to be carefully considered for regional impacts, and this should be noted and explained in the Final EIS. Clearly, should Mesaba purchase its CAIR allowances from out of state, this would add to the sulfur dioxide emissions in the region and further contribute to the visibility impact. The Final EIS needs to reflect that the requirement to purchase allowances equivalent to 100 percent of its sulfur dioxide emissions will not result in reduced visibility impacts. Only the purchase and retirement of additional allowances, over and above those needed for facility operation under Title IV or CAIR, from within the region would appear to ensure mitigation of visibility impacts.

### **Air Quality Risk Assessment**

Please contact Kristie Ellickson (651-296-7338) or Mary Dymond (651-296-7992) if you have questions regarding our comments under this section.

### **Air Emissions Risk Assessment including RASS, ERER, IRAP, and the MPCA Mercury Fish Intake Model**

The methodology used by the facility for the various exposure scenarios has been reviewed and approved by MPCA during the scoping process. The MPCA has also provided comments and information on previous submittals. Although the results presented in the DEIS are stated to be below risk goals used by MPCA to evaluate projects, the emission and chemical data have not been verified by the MPCA.

The MPCA has authority to craft permit conditions to prevent pollution and to protect human health and the environment. We have found that we garner the necessary information to make these decisions from an Air Emission Risk Analysis (AERA) performed according to our AERA guidance document (<http://www.pca.state.mn.us/publications/aq9-18.pdf>) or from a more refined risk assessment, when necessary. The following questions and comments are intended to clarify portions of the submitted draft risk assessment materials that may be missing steps or that deviate from our AERA guidance or from agreed-upon refined risk assessment methodology. In some cases, simple clarification is requested.

### **General Comments on the AERA**

In the Final EIS, clarify the location of each receptor/sensitive receptor relative to the facility. In the DEIS, some descriptions treat receptors in terms of the distances from the “facility,” while others treat receptors in terms of the distances from the proposed facility stacks.

In the Final EIS, clarify the values used for the emission factors and emission rates. Are they: a statistical descriptor of central tendency; maximum values; or highest potential values? This information is necessary in order to understand how conservative the assumptions and calculations were as far as potential for adverse human health effects.

The Final EIS needs to address PM emissions in the AERA. This particularly pertains to PM<sub>2.5</sub>. The Criteria Pollutant Screen on the MPCA RASS may be used for this assessment. When incorporating PM<sub>2.5</sub> into the risk assessment please clearly state the assumptions that were made as to assessing the PM speciation. This evaluation process is described on page 40 of the updated AERA guidance.

Identify “Insignificant Activities” in the Final EIS and document how these activities met the conditions for exclusion as described on page 40 of the updated AERA guidance.

In the Final EIS explain how the Chemicals of Potential Concern (COPC) list was compiled. Include a description or a flow chart/diagram of how compounds were chosen to be COPCs and then eliminated or kept for the “Chemicals for Evaluation” list.

In the Final EIS, list risk and hazard values at the property boundary and at the fence line.

Generally in the AERA process, risk is calculated for both a resident and a farmer at the location of maximum air concentration on potentially farmable land. In the Final EIS, evaluate farmer risks at the location of maximum concentration at potentially farmable land. Also, have the location of the farmer and resident clearly identified in the text and figures along with the respective risk value.

The DEIS does not list the sensitizers and developmental toxicants described in Appendix C (sections 5.4 and 5.5). These should be included in the Final EIS. Health based risk quotients are not completely protective for people who are sensitized to certain chemicals. Also, acute health risk values should never be exceeded by developmental toxicant hourly concentrations.

**Appendix C AERA [ERER (Q/CHI)], Section 4.5**

In the Final EIS, the AERA spreadsheets (ERER and RASS) should include fugitive emissions, with the exception of road dust.

**Appendix C AERA (IRAP), Section 4.6**

In the Final EIS, use the toxicological values submitted to you by MPCA in each risk model, including the IRAP. Some chemicals were discussed on page 13 (section 4.6.2) and 23 (section 5.8) of Appendix C as not having toxicological values for one of the risk models, and default toxicological values were used in the IRAP modeling.

**Appendix C AERA (Mercury Uptake Model), Section 4.7**

Please use the most current Mercury Model for the Fish Ingestion Pathway for this analysis (<http://www.pca.state.mn.us/air/aera-mercury.html>).

In the Final EIS, the MPCA fish consumption pathway model should be applied to the fishable water body that is most impacted by the facility. The evaluation of Lake Diamond was supported by the amount of available fish data and the location of the majority of residences. Is Diamond Lake the “most impacted fishable water body?” If Lake Diamond is not the most impacted water body, and the most impacted water body does not have adequate fish data, the fish data from Lake Diamond may be used as a surrogate.

In the DEIS, the average and the 90<sup>th</sup> percentile fish tissue data were evaluated. In the Final EIS, use the 95<sup>th</sup> percent upper confidence limit of the mean for the fish tissue data.

In the Final EIS, sum the ingestion risks from mercury found using the MPCA fish pathway model and the ingestion risks from mercury found using IRAP.

The DEIS also assumed all mercury emissions to be elemental. In the Final EIS, document the basis for this assumption, use a more conservative approach or identify the mercury speciation inputs.

In the Final EIS, use the Minnesota recommended fish intake value (0.142 mg/day) for the subsistence scenario, and not the IRAP suggested value (0.082 mg/day). The Minnesota recommended value was described in the DEIS, but the input in the fish uptake spreadsheet was the IRAP value.

**Specific Chemicals**

In the Final EIS, include dioxins and furans in the risk analysis. Although dioxin levels may be very low, their toxicity is exceedingly high. The MPCA recommends the use of dioxin emission data from the Wabash site. If no data are available, you may need to obtain surrogate data to complete the risk assessment.

**Potential Cumulative Impacts, Section 5.2-9**

The submitted DEIS includes a cumulative effects analysis for the AERA. Only one facility, Minnesota Steel, was included in the cumulative effects analysis. The Final EIS should include all listed nearby facilities that could contribute to increased air concentrations in the 10km zone surrounding the proposed

facility in the cumulative effects analysis or provide clear justification for not incorporating the listed facilities in this assessment. Also ambient air monitoring data should be included in the cumulative effects analyses. Finally, as stated earlier, the cumulative effects analysis investigated the inhalation route of exposure. The cumulative effects analysis should also address ingestion pathways.

### **Air Policy and Mercury**

Please contact Anne Jackson (651-296-7949) if you have questions regarding our comments under this section.

The MPCA is concerned that the DEIS does not acknowledge the need for depositional reductions from all sources in Minnesota of mercury emissions. Minnesota's Total Maximum Daily Load Reduction for Mercury establishes a statewide annual air emissions goal of 789 pounds per year. The TMDL goal of 789 pounds is a challenging 78 percent reduction from an estimated 3,638 pounds emitted in 2000. The addition of new sources like this project further increases the magnitude of the task of implementing the TMDL goal. As a result of three initiatives in Minnesota's existing electric utility sector, significant reductions of mercury will occur in the foreseeable future, however, the reductions still fall far short of achieving the goal of 789 pounds. As of December 2007, a TMDL stakeholder workgroup is meeting on a regular basis with the aim of recommending a plan by March 2008. The plan will likely address how new sources, such as this project, are to be permitted to operate while reducing the overall total mercury emissions in the state. The Final EIS needs to reflect these requirements.

The MPCA, therefore, does not agree with the DEIS' description of additional air quality impacts (Section 4.3.5.7 and 4.8.5.8). First, given the total goal of 789 pounds from all sources in Minnesota, without an offset from other sources of mercury emissions, Mesaba Energy's 52 pounds of mercury represents 6.5 percent of the statewide mercury emissions goal. The Final EIS needs to address how the proposed facility will mitigate mercury emissions to aid in achieving the TMDL goal.

Second, the DEIS assumes the existence of "stringent MACT standards." While EPA has promulgated a new source performance standard for mercury from an IGCC unit, the value essentially reflects no control of mercury, and could hardly be called "stringent." The Clean Air Mercury Rule (CAMR) does not restrict the amount of mercury released by a facility, only that the facility purchase allowances in sufficient quantity to equal the facility's emissions. In order to describe the effectiveness of the NSPS and CAMR, the Final EIS should describe the results of EPA's assessment of the impacts of CAMR on deposition in Northern Minnesota.

### **Climate Change**

Please contact Peter Ciborowski (651-297-5822) if you have questions regarding our comments under this section.

### **Carbon Footprint**

The DEIS estimates that, when completed in its entirety, the Mesaba Project will emit 9.4 to 10.6 million tons of carbon dioxide (CO<sub>2</sub>) annually to the atmosphere. This is in absence of carbon capture and sequestration (CCS). These estimates appear to correspond to annual emissions with subbituminous coal and bituminous coal as fuel sources. Annual emissions are calculated using a 92 percent capacity factor.

The calculation of annual emissions is sensitive to the choice of capacity factor. The recent experience at the Tampa Electric Co. Polk IGCC unit suggests that 92 percent may overestimate plant availability. Based on DOE Energy Information Agency Form 906 data<sup>1</sup>, in years 2004-6, plant capacity factors at the Polk IGCC were: 57 percent, 76 percent, and 56 percent, respectively.

In addition, the DEIS cited three possible fuel sources: subbituminous coal, bituminous coal and a 50:50 mixture of subbituminous coal and petroleum coke. Annual CO<sub>2</sub> emissions are estimated for only two of these possible fuels sources, omitting analysis of the mixture of subbituminous coal and petroleum coke. The Final EIS needs to provide the annual CO<sub>2</sub> emissions analysis for all three possible fuel sources. The Final EIS also needs to include an estimate for non-CO<sub>2</sub> greenhouse gases (GHGs) emitted during the operation of the Mesaba plant.

Below, we estimate annual CO<sub>2</sub> emissions using information taken from the Excelsior-Mesaba air permit application to the MPCA, with three fuel type and three different possible capacity factors (including the FEIS-proposed 92 percent). Estimated annual CO<sub>2</sub> emissions range from 6.02 to 9.86 million tons per year, assuming no carbon capture and storage. Assuming that CCS is implemented after 2014, the earliest year that is identified for commercial availability of CCS, CO<sub>2</sub> emissions would be lower by 30 percent.

<b>Fuel type</b>	<b>MW(e)</b>	<b>cap. factor</b>	<b>MWH</b>	<b>heat rate (btu/kwh)</b>	<b>MMBtu</b>	<b>btu/lb coal</b>	<b>lb CO2/ MMBtu</b>	<b>tons CO2</b>
Subbituminous	1196	0.75	7,857,720	9397	73,838,995	8900	213	7,863,853
Bituminous	1196	0.75	7,857,720	9397	73,838,995	10982	204	7,531,577
50/50 Subbituminous/ petroleum coke	1196	0.75	7,857,720	9397	73,838,995	11450	217.8	8,041,067
Subbituminous	1196	0.60	6,286,176	9397	59,071,196	8900	213	6,291,082
Bituminous	1196	0.60	6,286,176	9397	59,071,196	10982	204	6,025,262
50/50 Subbituminous/ petroleum coke	1196	0.60	6,286,176	9397	59,071,196	11450	217.8	6,432,853
Subbituminous	1196	0.92	9,638,803	9397	90,575,834	8900	213	9,646,326
Bituminous	1196	0.92	9,638,803	9397	90,575,834	10982	204	9,238,735
50/50 Subbituminous/ petroleum coke	1196	0.92	9,638,803	9397	90,575,834	11450	217.8	9,863,708

<sup>1</sup> [http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html)

Non-CO<sub>2</sub> GHGs typically comprise about 1 percent of all GHG emissions from current electric generating plants and associated electricity transmission. If we expand GHG accounting framework to the complete fuel cycle, total non-CO<sub>2</sub> emissions would be larger. Ruether, et al. (2004) estimate that about 3.5 percent of all GHG emissions associated with the operation of an IGCC are associated with coal mining and transportation.<sup>2</sup> A more complete description of the carbon footprint of the Mesaba project would address these up-stream non-CO<sub>2</sub> GHG emissions, as well as non-CO<sub>2</sub> GHG emissions that are produced during combustion or are emitted to the atmosphere as a result of the electricity transmission. We recommend that the Final EIS explicitly address these issues.

### Regulatory Status

Greenhouse gases are not currently regulated under Federal or State law. However, recent Supreme and Federal district court rulings have thrown into question the regulatory status of CO<sub>2</sub> and other GHGs under the Clean Air Act. In *Massachusetts vs. US Environmental Protection Agency*, the Supreme Court ruled that, unless the USEPA can provide a compelling justification why it should not regulate GHGs under the Clean Air Act, it must regulate the emissions of these pollutants from mobile sources. The full implications of this ruling for stationary sources will likely be determined in subsequent court cases.

The Final EIS should recognize the present uncertainty of the regulatory status of CO<sub>2</sub> and other GHGs under the Federal PSD program and the possibility that the regulatory status could change quickly as a result of litigation. At this time, to not recognize the potential for regulation sends the message that these pollutants are not, and will not, be subject to regulation, despite the likelihood that GHGs will be regulated.

Other sources of regulatory uncertainty that should be noted include: pending Congressional legislation on GHGs, the Midwest Governor's regional cap-and-trade initiative on GHGs, and possible state-level action. Under virtually all of these programs the Mesaba project would be brought under some sort of state, regional or Federal regulatory program. We recommend that the Final EIS describe the range of possible future regulatory actions that might affect the operation of the Mesaba project and consider generally how the facility's owners/operators might comply.

### Cumulative Environmental Impacts

The DEIS for the Mesaba Project addresses environmental impacts only to the extent that it assesses emissions levels. The effects of those air emissions are not considered in any depth. Nor are the cumulative environmental impacts of the operation of the Mesaba project considered. The DEIS does discuss the localized effects of carbon capture, compression, transport, and geologic sequestration, but since those impacts are quite a minor part of the larger impacts picture, this is not an adequate substitute for a full and robust treatment of the Mesaba Project's environmental impacts.

Generally speaking, in the case of CO<sub>2</sub> the chain of cause and effect linking plant operations to the environment includes: emissions, atmospheric concentration change, climatic change, and impacts from changing climate. Regarding cumulative emissions and concentration change, over its lifetime the Mesaba project will emit roughly 390 million tons of CO<sub>2</sub> to the atmosphere. This assumes a 50-year plant life and a mid-case 75 percent capacity factor. If 55 percent remains airborne, this emission will add roughly 0.05 ppmv to the global atmospheric concentration of CO<sub>2</sub>. While small in relation to the expected 150 to 400 ppmv rise in atmospheric CO<sub>2</sub> levels this century, it still would be measurable.

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<sup>2</sup> J. Ruether, et al., "Greenhouse Gas Emissions from Coal Gasification Power Generation Systems," *Journal of Infrastructure Systems* 19 (2004): 111-119.

Regarding climate impacts, the type of environmental impacts that in the scientific literature are typically associated with future climatic change include:

- Agricultural losses
- Forestry losses
- Human health impacts from heat, disease and air pollution
- Impacts to water infrastructure from flooding and low flows
- Losses associated with coastal flooding
- Impacts resulting from forced migrations of human populations
- Losses from increased storm intensity
- Energy costs of increased cost of summer cooling
- Welfare losses associated with lost amenities
- Implicit costs of habitat loss and species extinction

In the Final EIS, we recommend that the cumulative impacts of the operation of the Mesaba plant be evaluated using this framework or a similar framework of impacts found in the scientific literature.<sup>3</sup> While the Mesaba plant will contribute only marginally to the aggregate global impacts of climate change over the next 50 years, it will nonetheless still contribute. Recently, in *Center for Biological Diversity v. NHTSA*, the Ninth Circuit Court of Appeals found that the assessment of cumulative effects in federal environmental impact statements is required under NEPA. Consistent with this ruling, the Final EIS for the Mesaba project should analyze the cumulative environmental effects of GHG emissions.

## II. WATER

### **Industrial Water Quality Permit**

Please contact Katrina Kessler (651-296-7376) if you have questions regarding our comments under this section.

#### **Section 4.5.2.1 – Permit Authority**

The DEIS states that “Discharge limitations for both mercury and phosphorus for the West Range Site would be determined by MNDNR during the National Pollutant Discharge Elimination System (NPDES) and State Disposal System (SDS) permit development process and may vary from the expected levels presented in this EIS.” The MPCA, not the Minnesota Department of Natural Resources (MNDNR), is the state agency responsible for implementing the NPDES/SDS Program. This reference should be corrected.

#### **Section 4.5.2.1 – Zero Liquid Discharge (ZLD) System**

The DEIS includes little or no information about the design of the ZLD for both the east and west range sites. It is important to understand the design and operation of the system for both potential locations, as it is an integral part of the proposed project. What is the design flow for the ZLD for the east and west range? What individual treatment units are included in the design? The Final EIS should include a flow and solids balance for the ZLD system for both sites, including the design for the west site discharge alternatives described in Appendix H. For the west range site, the DEIS lists a brine concentrator and a heated rotary drum dryer/crystallizer; for the east site, the DEIS mentions a clarifier, a reverse osmosis system, and a brine concentration/crystallizer. Does the design include multiple clarifiers, reverse

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<sup>3</sup> For instance, Intergovernmental Panel on Climate Change, *Fourth Assessment Report. Working Group II. Report on Impacts, Adaptation and Vulnerability*, <http://www.ipcc.ch/ipccreports/ar4-wg2.htm>

osmosis, concentrator dryer/crystallizer units such that if one goes down, the remaining units can effectively treat the maximum design flow? The Final EIS should explain the contingency plans for the proposed facility in the event that one of the units is undergoing maintenance. If one of the concentrators needs maintenance, will the entire facility shut down? If not, where will the un-concentrated brine be stored? What is the capacity of that storage unit? Where duplicate units are not provided, structures must be provided so that each unit operation of the plant can be independently removed from service. Where duplicate units are provided, a single flow splitting device must be provided before each unit operation. Duplicate units must be designed such that, with the largest unit out of service, the hydraulic capacity of the interconnecting piping will be sufficient to handle peak design flow through the remaining units. The Final EIS should also include a description of the final disposal plan for the solids generated from the ZLD system from both the west and east range.

#### **Section 4.5 – General Comments to Water Resources**

MPCA staff disagrees with the logic behind the Water Resource Management Plan and water discharge scenarios in the DEIS. The water resources section of the DEIS maintains that the proposed project will not increase the pollutant load to the Swan River watershed above the load authorized in the NPDES/SDS Permit issued to the MDNR for the Hill Annex Mine Pit (HAMP) MN0030198. It is not appropriate to compare the proposed water management plan to ongoing MDNR activities at the HAMP and discharges currently permitted in the Swan River watershed. The NPDES/SDS Permit Program does not allow Excelsior Energy to assume any of the flow or pollutant load associated with MN0030198. The proposed project represents a new discharge to the Swan River watershed. The Swan River is impaired for excess nutrients and is subject to a fish consumption advisory due to mercury. Until there is an approved waste load allocation implementation plan for the approved TMDL to address these impairments, the MPCA cannot permit any new or expanded discharges upstream of the impairment that may cause or contribute to the existing impairments. The Final EIS should include operating and discharge scenarios that recognize these permitting restrictions. All scenarios included in the Final EIS should be designed to meet water quality standards and sustain the designated use of the potential receiving waters. The primary goal of the federal and state NPDES/SDS Program is to maintain water quality consistent with beneficial uses.

Data included in the Water Resources Management Plan section of the DEIS suggest that over the long term (14 -24 years), the proposed discharge to the Canisteo Mine Pit (CMP) will result in exceedances of the hardness, total dissolved solids (TDS), and specific conductivity water quality standards and that the discharge to Holman Lake would result in exceedances of the same parameters within three years. The DEIS also suggests that the mercury and phosphorus levels in the CMP and Holman Lake will increase as a result of the proposed discharges in such a way that may not be permitted under the NPDES/SDS Program. In its current form, the Water Resource Management Plan included in the DEIS is not consistent with state and federal regulations governing water discharges.

##### **Section 4.5.2.1 –TDS and Hardness**

The proposed project includes two potential receiving waters, the CMP and Holman Lake. The CMP is considered a lake/reservoir by the MPCA, and both the CMP and Holman Lake are classified as 2B, 3B, 4A, 4B, 5, and 6 waters of the state. Section 4.5.2.1 predict that the TDS concentration in Holman Lake will reach the applicable class 4A water quality standard of 700 mg/L within the first two years of operation of the proposed facility. The DEIS states that Excelsior will request a variance from the Class 3B TDS and Class 4A hardness water quality standards. The existing Class 4A hardness water quality standard is 250 mg/L. Changes proposed to Minn. R. ch. 7050 include a reclassification of most Waters of the State from Class 3B to Class 3C, which would result in a change to a 500 mg/L hardness standard.

Even if the hardness water quality standard for the CMP and Holman Lake is changed to 500 mg/L, the DEIS indicates the proposed discharge to Holman Lake would exceed the 500 mg/L standard within two years of initiation of operation. Modeling data for the proposed discharge to the CMP included in the DEIS indicates that the discharge would result in exceedances of the TDS and hardness standard in year 26 and year 14, respectively.

The DEIS indicates that either treatment would be required for the cooling tower blowdown discharge to comply with water quality standards or Excelsior would have to apply for, and receive, a variance from water quality standards. Applying for and obtaining a variance from water quality standards is a time-consuming process. Water quality variances are rarely granted. In the exceptional cases when a variance is approved, the variance represents a temporary change in the water quality standard. 40 CFR 131.20 requires that the temporary water quality standard change must be reviewed every three years. The intent is that over time there will be a solution to the problem that created the need for the variance, and eventually the underlying water quality standard will be achieved. The DEIS does not include any discussion of methods, technologies, or treatments Excelsior Energy plans to evaluate for compliance with the TDS and hardness standard.

If Excelsior Energy plans to request a variance from water quality standards, the Final EIS should discuss the criteria Excelsior Energy plans to use to complete the variance request. Variance requests should be prepared consistent with Minn. R. 7000.7000 and Minn. R. 7050.0190. All water quality standard variance requests must be reviewed and approved by the EPA following approval by the MPCA Citizen's Board. The Final EIS should include the treatment technologies being considered to comply with water quality standards. If the proposed project includes a variance from water quality standards, the Final EIS should include a description of how the variance criteria will be satisfied.

#### **Section 4.5.3.2 – Hardness, TDS, Sulfate, Conductivity**

Section 4.5.3.2 and Table 4.5-6 of the DEIS suggest that the proposed discharge to Holman Lake will not meet the water quality standards for hardness, TDS, sulfate, and conductivity. The DEIS states that once the Holman Lake discharge mixes with the Swan River, the concentrations would be below standards. Please note that the MPCA has not approved the use of a mixing zone in Holman Lake, the CMP, or Swan River for the proposed project. On a case-by-case basis, MPCA staff may approve of mixing zones consistent with Minn. R. 7050.0210 only if the proposed discharge will not violate applicable water quality standards. As discussed above in relation to Section 4.5.2.1 of the DEIS, modeling data shows that the proposed discharge will result in a violation of TDS and hardness water quality standards. Table 4.5.-6 indicates that the proposed discharge will also result in an exceedance of the specific conductivity standard. The Final EIS should indicate how Excelsior Energy plans to meet the applicable water quality standards or include the specific criteria that will be used to apply for a variance from the water quality standards.

The sulfate standard for Class 4A, 10 mg/L, does not apply to the proposed discharge. The Class 4A standard is only applicable to discharges to areas where wild rice is growing. Comments on potential impacts from the proposed discharge related to sulfate are included below with comments to Section 4.5.3.4 on mercury discharges.

#### **Section 4.5.3.2 – Mercury and Phosphorus Loading**

This section of the DEIS states that the proposed project would not add mercury, phosphorus, or other pollutants associated with impairment concerns to the receiving waters. This is not true. The proposal calls for a withdrawal of water from the CMP for use in the plant and a discharge of concentrated

constituents to the CMP and Holman Lake. The proposed project represents a new discharge of pollutants to Holman Lake. There is currently no discharge from CMP or any of the other potential water sources to Holman Lake. Therefore, the proposed discharge of concentrated cooling tower blowdown to Holman Lake represents an addition of pollutants.

Section 4.5.3.2 states that the proposed project would not increase the mass of mercury or phosphorus discharged to the Swan River watershed above the load currently authorized by NPDES/SDS Permit MN0030198 issued to the MDNR permit for the HAMP. While it is important to limit the mass of mercury and phosphorus discharged to the Swan River, it is equally important that the discharge not contribute to a local impairment of any of the designated uses for Holman Lake or the CMP. In the absence of a completed implementation plan for the statewide mercury TMDL, the 6.9 ng/L water quality mercury limit cited in the DEIS should be viewed as an upper limit. Similarly, the 1 mg/L phosphorus limited referenced in the DEIS should be regarded as a potential limit. The 1 mg/L limit should be evaluated concurrently with the existing phosphorus data from Holman Lake and the proposed standards for lakes located in the Northern Lakes and Forest Ecoregion. Using very basic modeling, MPCA staff calculated an annual phosphorus load of 68 kg/yr to Holman Lake. Holman Lake is located in the Northern Lakes and Forest Ecoregion. The proposed phosphorus standard for lakes greater than 15 feet deep in this ecoregion is 30 ug/L. The standard for lake trout lakes in this ecoregion is 12 ug/L. The projected concentration of phosphorus in the discharge (30 ug/L – 70 ug/L) will likely increase the concentration of phosphorus in both Holman Lake and the CMP. Consequently, algal levels will increase and secchi depth (measure of transparency) will decrease. This could ultimately lead to the listing of these waters on the state's Impaired Waters List. Therefore the Final EIS needs to address the addition of mercury, phosphorus, and other pollutants to these receiving waters.

The December 7, 2006, *Response to NPDES-Related Questions*, prepared by Excelsior Energy and submitted to the MPCA, noted that to better characterize the raw water source and resulting effluent water quality, samples were collected from the CMP and the HAMP for analysis using an analytical method with a lower phosphorus detection limit. Additional samples were to be taken of other potential cooling water blowdown receiving waters. The results of all of the additional sampling work were to be submitted to the MPCA as soon as the analysis of the samples was complete. The MPCA has not received the results. Without this additional information, it is not possible to comment further on the assumptions related to the proposed discharge scenarios and potential phosphorus limits included in the DEIS. The Final EIS should include the results of these analyses and the proposed discharge scenarios should reflect the most current and relevant data.

Consistent with Federal Regulation C.F.R 122.4(i), the MPCA cannot authorize a new discharge to impaired waters before a TMDL is complete. To fulfill the Clean Water Act objective to restore and maintain, physical, and biological integrity of Waters of the U.S., federal regulations are in place to make sure that waters are not further impaired while a TMDL is developed and implemented. These regulations prohibit discharges that will cause or contribute to an existing impairment. Lake Pepin is impaired for excess nutrients, including phosphorus. New discharges to the Lake Pepin watershed, including the Mississippi River Basin above Lake Pepin, that are proposing a discharge of at least 1,800 pounds of phosphorus per year to or upstream of Lake Pepin are subject to the 40 C.F.R. 122.4(i). New discharges may choose to meet the requirements by using land treatment options, such as spray irrigation or rapid infiltration basins, enact treatment to eliminate phosphorus, discharge to a permitted wastewater treatment facility with capacity to accommodate the proposed load, or participate in pre-TMDL trading by purchasing pollutant load from another permitted facility. The MPCA developed Pre-TMDL Phosphorus

Trading (PTPT) guidance to be protective of the environment, meet regulatory requirements, and meet the needs of growing areas in Minnesota. PTPT allows new and expanding point source discharger to receive a discharge permit prior to completion of an applicable phosphorus-related TMDL.

Through PTPT, a new or expanding facility may increase its phosphorus discharge by purchasing a phosphorus reduction at another permitted facility. The MPCA documents the transfer of nutrient load, or trade, through the NPDES/SDS permitting process. More information about the PTPT is available online at <http://www.pca.state.mn.us/publications/wq-wwprm1-02.pdf>.

As the proposed facility would discharge more than 1,800 pounds per year of phosphorus (maximum discharge from Phase I & II = 17.2 MGD \* 0.05 mg/L \* 8.34 lb\*L/MG\*mg \* 365 day/year = 2618 lb/year) the discharge is subject to the requirements of 40 C.F.R. 122.4(i). The Final EIS should indicate how Excelsior Energy plans to meet or comply with the NPDES/SDS Permit restrictions related to 40 C.F.R. 122.4(i).

#### **Section 4.5.3.2, Table 4.5-6 Applicability of Water Quality Standards**

Footnote 5 of Table 4.5-6 states that TDS and sulfate standards are not applicable to the proposed project because the water in the CMP and Holman Lake are not being used for drinking water or irrigation. Under Minn. R. ch. 7050, waters of the state must meet all designated uses that they are currently serving or may serve such that at any time a resource can be used. Asserting that the CMP and Holman Lake are not being used for irrigation and drinking water at the present time does not translate to authorization to violate the water quality standards associated with those uses. Excelsior Energy may apply for a variance from a water quality standard only if it can be documented that there are no existing uses of the designated use classification. This footnote should be removed and the Final EIS should clarify how the proposed discharge will meet all water quality standards associated with Class 2B, 3B, 4A, 4B, 5, and 6 Waters of the State. If Excelsior Energy plans to apply for a variance from any of the applicable water quality standards, the Final EIS should include the specific criteria required to complete a variance application consistent with Minn. R. 7000.7000 and Minn. R. 7050.0190.

#### **Section 4.5.3.3 Domestic Wastewater Treatment**

The DEIS includes two alternatives to treat domestic wastewater at the west range site. The first alternative would result in the construction of a stabilization pond with capacity to treat 45,000 gallons per day with an ultimate discharge to either Little Diamond Lake or Holman Lake. This alternative would require Excelsior Energy to apply for and obtain a new NPDES/SDS discharge permit for the proposed wastewater pond. As stated above in comments related to Section 4.5.3.2, the MPCA cannot authorize a new discharge of nutrients to the Lake Pepin watershed (including Little Diamond Lake and Holman Lake) before a TMDL is complete. New discharges to the Lake Pepin watershed are subject to the C.F.R. 122.4(i). Additionally, a new discharge to Little Diamond Lake or Holman Lake would be subject to the 30 ug/L phosphorus standard for lakes greater than 15 feet deep in the Northern Lakes and Forest Ecoregion. If the lakes are considered trout lakes, phosphorus would be limited to 12 ug/L.

The second alternative is to dispose of the domestic wastewater generated at the facility at the Coleraine-Bovey-Taconite (CBT) wastewater treatment plant (WWTP). The facility would be connected via 10,000 feet of 12-inch gravity sewer pipeline, a pump station, and 2,400 feet of forcemain to the city of Taconite's main pump station, located in the northeast corner of the city. According to the DEIS, the existing CBT WWTP has the capacity to treat the 45,000 gallons per day expected during construction and the 7,500 gallons per day expected during ongoing operations. The DEIS acknowledges that the CBT collection system struggles with excess flow as a result of inflow and infiltration (I/I). Since 1999, the city

of Taconite's main pump station has experienced six unique flow events that resulted in bypass conditions. Bypass flows at the main Taconite pump station discharge to a settling basin, formerly used by the Cleveland-Cliffs Iron Company, and eventually to Holman Lake. Bypass events are direct violations of the CBT NPDES/SDS Permit MN0053341. While it is true that the additional 7,500 gallons per day that Excelsior Energy would add to the collection system would not result in a significant burden to the existing WWTP under normal operating conditions, it is clear that the CBT collection system (particularly the collection system upstream of the main pump station in the city of Taconite) is in need of attention. The DEIS suggests that larger pumps could be installed or the system could be rehabilitated. The Final EIS should recommend that Excelsior Energy, in conjunction with the cities of Coleraine, Bovey, and Taconite, undertake an I/I study to determine the most urgent need for upgrades to the collection system and what resources are needed to complete the identified upgrades. The Final EIS should also discuss the current capacity to treat and store domestic biosolids. The CBT WWTP has historically had to haul biosolids to the wastewater treatment plant in Grand Rapids. The additional flow and subsequent solids load at the CBT WWTP underscores the need to invest in upgrades to the existing solids treatment infrastructure.

#### **Section 4.5.3.4 Surface Water Quality Standards – Mercury**

This section, along with other sections in the DEIS, rely on the assumption that mercury in the facility effluent can be addressed by operating the facility such that the concentration of mercury in the effluent would not exceed the water quality standard of 6.9 ng/L. It is not recommended that Excelsior Energy base the water discharge strategy for the proposed facility around the assumption that the effluent limit will be 6.9 ng/L. It is possible that because the proposed project includes a discharge to a lake, that the mercury concentration would be limited to an ambient standard. Additionally, the discharge will be subject to the implementation plan currently being developed for the statewide mercury TMDL. The DEIS discussion of mercury water quality standards and potential permit standards should mention that 6.9 ng/L may not be compliant with potential NPDES/SDS Permit requirements or TMDL requirements. The Final EIS should discuss the proposed mercury fish tissue standard, the relationship between mercury and sulfate, and the bioaccumulation of methylmercury. Methylmercury builds up in the food chain so that humans and wildlife are exposed to unsafe levels of methylmercury by eating contaminated fish. The federal methylmercury fish tissue criterion is 0.3 mg/kg. The MPCA is proposing to adopt a 0.2 mg/kg methylmercury standard because of higher fish consumption rates. Sulfate-reducing bacteria play a key role in methylating mercury. The Final EIS should include a discussion of sulfate levels in the receiving waters, as well as the potential for methyl mercury formation in the lake and in the "wetland fringe" of Holman Lake described on page 4.7-15 of the DEIS. Data included in the DEIS indicates that the proposed discharge would increase the sulfate concentration in Holman Lake from approximately 10 mg/L tenfold to greater than 200 mg/L. However, the DEIS fails to discuss the current level of methylmercury in the fish in Holman Lake and how a tenfold increase in the concentration of mercury would impact mercury levels in fish tissue.

#### **Section 4.5.3.1 – Compliance with 316(b)**

Section 4.5.3.1 of the DEIS discusses cooling water intake structures. Section 316(b) of the Clean Water Act and 40 C.F.R. 122.21 regulate cooling water intake structures. New facilities that use cooling water from waters of the U.S. are required to minimize impingement and entrainment of aquatic organisms. Operation of Phase I and Phase II of the proposed project will require up to 21.9 million gallons per day. 40 C.F.R. 122.21 requires facilities that withdraw equal to or greater than 10 mgd to reduce design intake velocity commensurate with closed cycle cooling towers, design and construct each intake structure to a maximum through-screen design intake velocity of 0.5 feet per second (fps), and comply with capacity- and location-based proportional flow requirements. Excelsior Energy is also required to provide the

source water physical data, the cooling water intake structure data, the water baseline biological characterization data, and the source water flow data required by 40 CFR 122.21®(2), (3), and (4). The regulations also require submittal of a Design and Construction Technology Plan to demonstrate that the proposed facility has selected and will implement the design and construction technologies necessary to minimize impingement mortality and/or entrainment per 40 C.F.R. 125.86(4). The June 2006 NPDES/SDS Permit Application submitted to the MPCA did not include these required elements. Nor does the DEIS include this information. This information is critical to the environmental review process and should be included in the Final EIS. These data are needed to characterize the facility and evaluate the water body and species affected by the cooling water intake structure, and the biological community in the vicinity of the intake structure, as well as the operation of the cooling water intake structures.

The Water Resources Plan on page 4.5-11 of the DEIS states that each pump station will meet the 316(b) requirements for cooling water intake structures. Excelsior Energy is proposing to use a pipe with wedgewire screen to withdraw water from the desired depth at the HAMP and the Lind Mine Pit (LMP) pumping stations. The DEIS states that sufficient length of screen will be provided to ensure intake velocities are maintained below 0.5 fps and ensure thermal stratification is not negatively disturbed. It is unclear from this statement how a longer screen will ensure a lower velocity or less disturbance of the thermocline. More detail including calculations supporting a velocity of less than 0.5 fps and thermal stratification data from the HAMP and the LMP should be included in the Final EIS. This information is needed to verify protection of the aquatic ecosystem, particularly because Excelsior Energy is proposing to withdraw the entire annual appropriation worth of water from the HAMP and LMP on a seasonal basis.

#### **Appendix H Process Water Alternative 1 – Eliminate Discharge to CMP**

This alternative is problematic in that it results in an increased load of pollutants and higher flow to Holman Lake. Under this alternative all of the water quality concerns related to phosphorus, mercury, hardness, total dissolved solids, and specific conductivity discussed above would be realized in Holman Lake. Data included in Table 2 of Appendix H indicates that under this scenario the proposed project would result in an exceedance of water quality standards in Holman Lake and, therefore, would not be permitted under the NPDES/SDS Program. Of particular concern is the increase in mercury concentration in the lake from 0.9 ng/L to more than 3 ng/L. Increased mercury loading to Holman Lake increases the potential for methyl mercury formation and will likely result in an increase in the concentration methylmercury in fish tissue. As stated above in response to Section 4.5.3.4 of the DEIS, the MPCA is proposing to adopt a 0.2 mg/kg methylmercury standard because of higher fish consumption rates. The Final EIS should clarify what an increase in mercury loading to Holman Lake means in terms of mercury fish tissue concentration.

#### **Appendix H Process Water Alternative 2 – Relocated Discharge from Holman Lake to Swan River**

The DEIS states that this alternative, the elimination of the Holman Lake discharge in favor of a discharge point to the Swan River, may be adopted in combination with Alternative 1. If both alternatives were enacted, it would result in no discharge of cooling tower blowdown to the CMP or Holman Lake. Directing the discharge to the Swan River eliminates concern over the creation of local impairments to Holman Lake and/or the CMP. The MPCA actively discourages new or expanding discharges to reservoirs and lakes. The DEIS indicates that Excelsior Energy is interested in pursuing potential water quality trading opportunities to offset their cooling tower blowdown discharge. If trading were available to offset discharges of pollutants such as phosphorus to the CMP or Holman Lake, all trades would have to be developed in such a way to avoid causing or contributing to an impairment of the most immediate receiving water (the CMP or Holman Lake) in addition to downstream water bodies. It is possible that a trade to offset a discharge to the CMP or Holman Lake would require trading credits generated in the

local CMP or Holman Lake watershed. This would severely limit or eliminate potential trading partners. A discharge to the Swan River would result in more potential trading partners because the watershed spans more area.

The DEIS specifically discusses the possibility of water quality trading offsets for mercury and phosphorus. At this point, the MPCA is only prepared to authorize trading consistent with the Pre-TMDL Phosphorus Trading Guidance described above in comments to Section 5.4.3.2. According to the *U.S. Environmental Protection Agency's Water Quality Trading Toolkit for Permit Writers*, EPA does not support trading of persistent bioaccumulative toxics, including mercury. Currently the MPCA staff does not have a framework in place to consider mercury trading. The approved statewide mercury TMDL does include reserve capacity; however, until the waste location allocation implementation plan for the TMDL has been approved, it is unclear as to how the reserve capacity will be allocated.

The relocation of the discharge point to Swan River would eliminate potential impacts from heated cooling tower blowdown to the CMP and/or Holman Lake. Data included in the DEIS indicates the discharge may approach 86° Fahrenheit during peak summer periods. Minn. R. 7050.0220 limits the impact from heated discharges to 5° Fahrenheit above natural in streams, and 3° Fahrenheit above natural in reservoirs and lakes. Discharges are further limited to 86° Fahrenheit. Impacts from heated effluents to rivers and lakes are receiving heightened regulatory attention. Regardless of the discharge alternative selected, Excelsior Energy should design the system such that it complies with all applicable thermal discharge regulations. The DEIS indicates that during periods of low flow, the proposed project may require a variance from thermal effluent limits. If Excelsior Energy plans to apply for a variance, the Final EIS should clarify how the requirements of Minn. R. 7000.7000 and Minn. R. 7050.0190 will be met.

### **Wetlands**

Please contact Kevin Molloy (651-297-7572) or Tom Estabrooks (218-725-7763) if you have questions regarding our comments under this section.

**3.7.2 Affected Environment - Regulatory Framework.** The DEIS correctly identifies (on page 3.7-1) that a Clean Water Act (CWA) Section 401 Certification from the MPCA is required, due to the fact that the project requires a CWA Section 404 Permit from the U.S. Army Corps of Engineers (USACE). However, the DEIS did not sufficiently discuss that: a) under the Section 401 certification process, the MPCA is responsible for reviewing the proposal to determine if it will comply with state water quality standards, most of which are found in Minn. R. ch. 7050; and b) to receive an MPCA Section 401 Certification, the applicant must adequately demonstrate that the proposed project will be in compliance with state water quality standards. This section of the Final EIS should, therefore, be revised to incorporate these facts into the Final EIS. Further, the Final EIS should identify that any special conditions placed on a project during the MPCA Section 401 Certification process (presuming the project can, in fact, be certified by the MPCA) become enforceable requirements of the USACE Section 404 Permit that would be issued to the applicant. In addition, for this section of the final EIS to be considered accurate, it needs to be revised to identify that the project must also comply with the MPCA's requirements for wetland mitigation, which are detailed in existing Minn. R. 7050.0186 (the DEIS does not mention this).

**3.7.3 Affected Environment - Wetland Classification System.** The DEIS identifies that, at the request of the USACE, the Final EIS will characterize wetlands by community type using the Eggers and Reed classification system. The MPCA staff agrees this needs to be done, based on the inadequacy of the Circular 39 method; however, we note that the DEIS did not specify the extent to which this will be done

throughout the Final EIS and relevant appendices. Consequently, we request that all occurrences of the Circular 39 method used in the DEIS and associated appendices be converted to the Eggers and Reed Classification system. Doing so will help make the analyses of the anticipated wetland impacts and proposed mitigation throughout the final EIS more meaningful for the reader.

#### **4.7 Environmental Consequences – Wetlands**

- The MPCA staff re-emphasizes the point made above: all occurrences of the Circular 39 method in this chapter, including those within each table, need to be converted to the Eggers and Reed Classification system in the Final EIS to provide for a more meaningful analysis.
- While Tables 4.7-21 and Table 4.7-22 contain a summary of the total amount of wetland acreage this project is anticipated to impact, it does not specify the type of impacted wetlands. These summary tables should, therefore, be revised to clearly identify the total acreage of each type of wetland that is anticipated to be impacted, using the Eggers and Reed Classification System. Also, there are inconsistencies in the total acreage amounts within these tables relative to those found in Tables 6 and 14 of Appendix D-4, so the Final EIS needs to resolve this inconsistency.
- The discussion throughout the DEIS regarding the compensatory mitigation for the anticipated wetland impacts lacks substance and is considered incomplete by the MPCA staff. It contains no specific compensatory wetland mitigation plan for staff to analyze; it merely states that such a plan will be prepared to comply with the minimal requirements of the USACE and the state of Minnesota's Wetland Conservation Act. As noted above, nothing is mentioned regarding the need to comply with Minn. R. 7050.0186. Further, there is insufficient discussion regarding the possible detrimental effects to the water quality of the affected watersheds as a result of these anticipated wetland impacts, and the DEIS also fails to identify how the not-yet-developed compensatory wetland mitigation plan will genuinely mitigate those anticipated impacts. Therefore, the DEIS, to satisfy the applicable provisions of the Council of Environmental Quality Regulations for implementing the National Environmental Policy Act, needs to be revised to address this inadequacy. Specifically, the Final EIS needs to include: a) a discussion of the anticipated wetland impacts to the water quality of the watershed; and b) a specific plan proposed to be followed by the applicant to provide adequate compensatory mitigation for the permanent and temporal loss of the function and quality of the existing wetlands in the watershed. This compensatory mitigation plan needs to include the total amount of acres of anticipated wetland impacts broken down by wetland types, using the Eggers and Reed Classification System; it also needs to clearly propose an adequate amount of compensatory mitigation for the types of wetlands that the project will impact. The plan also needs to specifically identify where the proposed compensatory wetland mitigation will take place.

**Appendix D-4.** Staff noticed inconsistencies in the total amounts of wetland acreage identified within various tables used throughout this Appendix. Rather than reiterating each of these inconsistencies, MPCA staff requests that when revising all of the tables as required to convert them to the Eggers and Reed Classification System (see comment above), please proof-read the Final EIS to ensure there are no discrepancies between the tables.

### **Stormwater**

Please contact Tom Estabrooks (218-725-7763) if you have questions regarding our comments under this section.

This project will require an MPCA NPDES/SDS General Stormwater Permit for discharging stormwater during construction activity. Both the owners and operators of construction activity disturbing one acre or more of land are responsible for obtaining the NPDES/SDS General Stormwater Permit prior to commencing construction activities. Sites disturbing less than one acre within a larger common plan of development or sale that is more than one acre also need permit coverage. A detailed Stormwater Pollution Prevention Plan (SWPPP), containing both temporary and permanent sediment erosion control plans, must be prepared prior to submitting an application for the NPDES/SDS General Stormwater Permit. For more information regarding the requirements of the NPDES/SDS General Stormwater Permit and the SWPPP, please visit the following Web page: <http://www.pca.state.mn.us/publications/wq-strm2-05.pdf>.

The Final EIS must characterize the stormwater runoff and measures that will be taken to manage stormwater runoff from the project during construction and post-construction. Where ten or more acres of disturbed soil drain to a common location (five acres if discharging to a Special Water), a temporary or permanent sediment basin must be provided prior to the runoff leaving the construction site or entering surface waters. Permanent stormwater treatment is required where the project's ultimate development replaces vegetation and/or pervious surfaces with one or more acres of cumulative impervious surface.

### **III. LAND**

#### **Solid Waste and Mining**

Please contact Julie Henderson (651-296-8596) if you have questions regarding our comments under this section.

The DEIS identifies slag and elemental sulfur as potentially marketable non-hazardous wastes that will be generated. Minn. R. 7035.2860 provides a regulatory framework for beneficial use of a material classified as a solid waste. These rules provide a list of materials and uses that have standing beneficial use determinations, which means that the generator can use the material as specified without contacting the MPCA. There are standing beneficial use determinations for coal combustion slag when used as a sand blast abrasive and when used as a component in manufactured products, such as roofing shingles, ceiling tiles, or asphalt products. Any other use for coal combustion slag and any beneficial use for elemental sulfur would require a case-specific beneficial use determination unless the material is to be used by incorporating it into a manufactured product.

Section 6 of the DEIS provides a regulatory and permit requirements list. Beneficial Use Permit should be added to this list because it may be necessary for the regulated party to obtain a Beneficial Use Permit depending on how the materials generated are beneficially used. In addition, this list indicates that an MPCA Solid Waste Storage Permit would be needed for any non-hazardous solid waste generated. The description provided for this Solid Waste Storage Permit should clarify that a storage permit would be needed for any non-hazardous solid waste that would be stored in quantities larger than 10 cubic yards for more than 48 hours. Materials that are authorized for beneficial use do not need a Solid Waste Storage Permit, but do need to comply with the storage standard requirements in subparts 2, 6, and 7 of Minn. R. 7035.2855.

Section 4.16.2.2 of the DEIS provides an estimate of 8.7 million cubic yards of combined disposal capacity available at two landfills (in Virginia and Canyon, Minnesota) that could accept industrial solid waste. Based on information provided in the 2006 Solid Waste Annual Reports for each landfill, the remaining permitted capacity at the Voyageur Industrial Solid Waste Landfill in Canyon and the St. Louis County Landfill in Virginia was approximately 3.2 and 1.6 million cubic yards, respectively. Expansion at both landfills is a possibility, but any increase in disposal capacity would have to go through the state permitting process for approval. This needs to be clarified in the Final EIS.

**Storage Tanks and Hazardous Wastes**

The facility is not considered a major facility under Minn. R. ch. 7001 because the total substance design storage capacity of all tanks at the site would be less than 1,000,000 gallons. Therefore, an aboveground storage tank permit is not required for the facility. However, the facility must notify the MPCA of all tanks larger than 500 gallons, which are subject to Minn. R. chs. 7001 and 7151. Please contact Joann Henry (651-297-8664) for additional information regarding tank notification requirements.

According to the DEIS, the facility would be regulated as a large-quantity generator (LQG) of hazardous waste subject to the requirements of Mn. Rules Chapter 7045 and would require a large-quantity generator license. The facility would not be considered a Treatment, Storage, or Disposal (TSD) facility and would not require a Resource Conservation and Recovery Act permit. Please contact Kathy Gedde (651-296-7258) for additional information related to the licensing of LQGs.

Thank you again for the opportunity to provide comment on the DEIS for the Mesaba Energy Project. These comments address matters of concerns identified by the MPCA staff reviewing the DEIS, and are submitted to the responsible governmental unit for consideration. These comments do not constitute approval by the MPCA for any element of the Project for the purpose of pending or future permit action by the MPCA.

Furthermore, additional comments or requests for information may be submitted in the future to address specific issues related to the MPCA permits that are required. Ultimately, however, it is the responsibility of the project proposer to obtain the required permits and comply with permit conditions. If you have questions about these comments, please contact the program staff identified for the specific areas of concerns.

Sincerely,



Jeff Smith, Manager  
Air Quality Permitting Section  
Industrial Division

JS:mbo