Minnesota Department of Natural Resources

Division of Ecological and Water Resources
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May 18, 2012 Transmitted via E-mail

Ann Hurlburt, Administrator
City of Scandia
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Re: Zavoral Mine and Reclamation Project Draft Environmental Impact Statement (EIS)

Ms. Hurlburt:

The Minnesota Department of Natural Resources (DNR) Central Region has reviewed the Draft EIS for the Zavoral Mine and Reclamation Project (the Project) located in Scandia, Washington County. The following comments are for your consideration.

It is noted that the Environmental Assessment Worksheet (EAW) and the Scoping Decision Document (SDD) identified the proposed mining area to consist of 56 acres previously mined and 8 acres undisturbed by previous mining activities. The Draft EIS describes the proposed mining area as 54 acres previously mined and 9 acres of undisturbed. Please clarify the changes in acreage noted in these records.

The EAW and SDD detailed mining activities as being an "additional" 15 feet in depth. The Project Advisory Committee (PAC) meeting documents described proposed mining activities as an "average" of 15 feet. The PAC reviewed preliminary Draft EIS stated "maximum" depth of 15 feet and the Draft EIS details mining activities as "average" depth of 15 feet (ranging from approximately 10 to 70 feet deep). Please note and clarify the discrepancies in these descriptions.

When discussing the impacts of mining activities to wildlife, the Draft EIS document reads that "approximately 86% (55 acres) of the impact would occur in previously mined areas that remain unreclaimed…". Eighty-six percent would be accurate if the Project consisted only of the 64 acres that is proposed to be mined. However, the Project area is described throughout the document to consist of 114 acres with a proposed 64 acres of that to be mined. Performing the percentage calculation using the Project's entire acreage would actually result in 48% of the Project area as being previously mined.

Several butternut trees, state-listed as special concern, have been documented within the proposed mining boundary. This status of this species is proposed to change to endangered within the next year. It tree clearing occurs after this reclassification takes place, a takings

permit will be needed. The potential need for a takings permit should be acknowledged in Section 2.0 Permits and Approvals, Table 4. Anticipated Required Permits and Approvals. This should also be acknowledged in other applicable sections of the document.

Section 3.1.1.5 Reclamation Plan Summary and Review. The Draft EIS includes a discussion on two possible reclamation approaches for the site. On February 15, 2011 the DNR participated in a meeting with the City, project proposers and their consultants to discuss reclamation activities proposed. The DNR expressed support for Tiller's original reclamation plan referred to as the Prairie Reclamation Approach 1 in the Draft EIS. This plan entails revegetating the Site using the sandy subsoil available at the site with added organic soil amendments. The DNR also encourages incorporating managed burns for the site at a 5 to 10 year interval once the site is established.

Section 3.3 Alternatives. The DNR considers the proposed mining of the 9-acre white pine-hardwood forest a loss of biodiversity value. Although this area is described in the Draft EIS as being of "moderate quality", this diverse native plant community is rare along the St. Croix River. The creation of a planted prairie following reclamation activities, although positive, should not be perceived the same as a naturally occurring native dry prairie in terms of its biodiversity value. Further consideration of this modified scale alternative should be considered by the City.

Section 4.5 Fish, Wildlife, and Ecologically Sensitive Resources and Threatened and Endangered Species, page 4-23, Section 4.5.1.1. On February 9, 2012 a Natural Heritage email was sent to AECOM. The email included an updated Natural Heritage database report (no new records) and stated that the EIS should include a discussion on the issues raised in the July 21, 2008 Natural Heritage letter and a discussion regarding the butternuts. No further Natural Heritage response is pending.

Section 4.5.1.3 Impact Analysis. The statement "No threatened or endangered species were found during surveys conducted on the Zavoral Site or are known to exist on the Site. Therefore no impacts to threatened or endangered species would occur as a result of Alternatives…". NHIS records indicated that there were a potential for listed species to occur on the site. Although no species were found during surveys that should not be inferred as "no impacts…would occur". Survey results should be interpreted more accurately as the project is not likely to affect threatened or endangered species. Please refer to the previous comment on butternut. The Impact Analysis should take the proposed status change of this species into consideration.

Although no occurrences of Blanding's turtles were detected during the survey, Blanding's turtles are known to occur in the vicinity and may occur on site. The Draft EIS included the DNR provided Blanding's turtle flyer and fact sheet as Appendix C in the Draft EIS. The DNR through early correspondence requested that the proposer identify specific mitigation measures from the flyer and factsheet that will be adopted and applied through the life of the project and reclamation activities. This is not addressed in the Draft EIS. In addition, Section 4.5.2 Potential Mitigation Measures did not include a discussion on Blanding's turtles.

Mitigation measures should include that trees be inspected for raptor nests prior to any tree clearing.

Section 4.6 Physical Impacts on Water Resources. The DNR completed a site survey of Zavoral Creek in September 2010. The creek had been identified as being a potential trout stream but had not been sampled previously by the DNR as the stream is located entirely within private land. The DNR was granted access by project proposers through discussions regarding the Project. The draft summary and findings of the assessment were provided to the City during the preparation of the Draft EIS. The DNR confirmed that the stream supported a healthy population of brook trout and is interested in pursuing a trout stream designation for Zavoral Creek. The presence of this trout stream should have been identified more clearly in the Draft EIS under Section 4.1 Land Use and in other applicable sections.

The DNR is aware that there is a concern raised regarding the effect the Project would have on the trout stream. Data provided in the Draft EIS and through site observations indicate that Zavoral Creek is fed by seeps. Infiltration of surface water that feeds seeps has the potential to alter the current environment of the stream. The concern is for the potential of a thermal plume reaching the trout stream resulting from the reduction of overburden atop the groundwater in the area proposed to be mined. The concern is valid as trout are sensitive to temperature variations.

The DNR has reviewed the information prepared by Dr. Scott C. Alexander regarding the springs (PowerPoint presentation posted for April 3, 2012 and "Preliminary Results of Spring Survey and Monitoring below Zavoral Property, Scandia, Minnesota" [no date]). DNR comments are based on the limited information provided. The minimum depth to groundwater during mining is proposed to be 30 feet for this project, and the final reclamation plan leaves a minimum of 50 feet above groundwater. Warming of groundwater at these depths should be less than 0.3 degrees Celsius, based on research conducted by the St. Anthony Falls Laboratory at the University of Minnesota (Taylor and Steffan 2008). The warming at the spring outlet will likely be less, because not all groundwater will travel beneath the mining area in the case of Zavoral Creek. The potential for increased infiltration in the project area due to almost all post-mining drainage being contained on site may actually cool the trout stream, as more flow in the stream will be from groundwater than surface water. It is probable that thermal impacts to the trout stream will be minimal. Monitoring of stream flow and temperature could be requirements for the project to ensure that the mining operations are not affecting the stream.

Section 4.7 Water Use. The Draft EIS correctly identifies that the Site's multi-aquifer well is an open hole in two systems, one of which is the Mt. Simon-Hinckley aquifer. The document also correctly identifies that the commissioner (DNR) may not issue new water use permits that will appropriate water from the Mt. Simon-Hinckley aquifer unless the appropriation is for potable water use and there are no feasible or practical alternatives to this source (*Minnesota Statutes* 103G.271, subpart 4a.). The proposer has stated the intent to use the onsite well for dust suppression purposes and that this proposed use will be below the appropriation triggered threshold of 10,000 gallons per day and 1 million gallons per year. Even though this use of the well as proposed would not trigger the water appropriation statute, the DNR strongly encourages that use below this threshold be limited and when used that it be limited to potable water use. The DNR recommends that the well not be used for the purposes of the project and be properly sealed in accordance with Minnesota Department of Health guidelines.

If the proposers proceed with the use of the well as described in the Draft EIS, the DNR recommends that mining activities occur outside of summer months when water use is at its peak. This timing recommendation may conflict with Sub alternative 3A which is proposed to occur from approximately the second week of March through the second week in October. The City should require Tiller to keep records of when the Zavoral Site Well is pumped and that these records are provided to the City to monitor groundwater activities. The DNR requests copies of these records.

Although the City is responsible for determining appropriate mitigation measures as conditions of the Conditional Use Permit, the Draft EIS should identify and inform reviewers of not only potential impacts from the proposed project, but also proposed mitigation to minimize those impacts that will be carried out by the proposers. Numerous sections within the Draft EIS including subsections of Section 5.0 Summary of Potential Mitigation Measures use of the term "potential" for mitigation discussions. Mitigation should have some level of commitment when discussed in an EIS document as it provides reviewers with what the proposer would be required to employ to mitigate identified or potential effects as a result of project activities. Section 5.0 Summary of Potential Mitigation Measures and appropriate Sections throughout the document need to address this more clearly.

Appendix A7 Tiller Dust Control Plan. Calcium chloride is proposed to be used as a dust suppressant and would be applied to internal haul roads throughout all phases of the Project. There is no information provided in this plan that indicated how often applications would occur and at what levels. Calcium chloride can be detrimental to vegetation and can leach into the nearby streams. More information should be provided to better assess potential impacts to nearby resources.

The DNR appreciates the opportunity to review the Draft EIS and to have been invited to participate in early coordination and PAC meetings. For any questions on the comments discussed in this letter, please contact Melissa Doperalski, Central Region Regional Environmental Assessment Ecologist, at 651.259.5738 or at melissa.doperalski@state.mn.us.

Sincerely,

Keith Parker
Regional Director

CC: Steve Colvin, Bernice Cramblit, Melissa Doperalski, Liz Harper, Molly Shodeen, Scot Johnson, Erica Hoaglund, Hannah Texler, Brian Nerbonne, Joel Stiras, Art Widerstrom, Rich Baker, Lisa Joyal, Bryan Lueth, Gerald Johnson, REAT (DNR)

Bob Patton (EQB)

Reference Cited:

Taylor, C. and H. Steffan. 2008. Shallow groundwater temperature response to urbanization and climate change in the Twin Cities Metropolitan Area: Analysis of vertical heat convection effects from the ground surface. Project Report 504, St. Antony Falls Laboratory, Minneapolis, MN.

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