



Carnelian-Marine-St. Croix Watershed District

Scandia Plaza II + 21150 Ozark Avenue + P.O. Box 188 + Scandia, MN 55073 + Tel 651.433.2150

May 17, 2012

Scandia City Council
14727 209th St. N
Scandia, MN 55073

Re: CMSCWD Comment No. C12-007, Zavoral Mining EIS

Dear Council Members:

Carnelian-Marine-St. Croix Watershed District(District) thanks you for the opportunity to comment on the above report. The District's consultants in surface water and ground water have reviewed the draft EIS and have raised several questions and concerns regarding some conclusions in the report but overall, both state that these concerns should not be material to the performance of the project. We included these comments in a previous review(attached) and they are to be considered to be part of the District's comments as well as the accompanying cover letter dated November 30, 2011. The following comments clarify or are in addition to the comments contained in those memos.

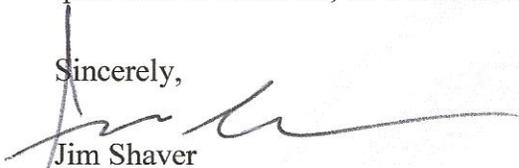
The mission of the District is "Protect and improve water resources within the jurisdiction of the Carnelian-Marine-St. Croix Watershed District through coordination with local units of government, citizens, and other government agencies." This project abuts a natural area with water resources that are dependent on both surface and ground water patterns. Although disturbed by previous mining operations, these patterns are now established and several unique biological communities rely on current flow rates, volumes, and temperatures. Disruption of the current site which is upstream in both surface and ground water flows has the potential to alter these communities.

The District will be reviewing the contractor's plans for the project and will be permitting storm water management, erosion control, and any floodplain and drainage alterations per the Rules of the District. Due to the sensitivity of the downstream resources mentioned above and the interaction between these resources and groundwater, the District suggests that the City of Scandia address the following as conditions if this project is approved:

1. The District agrees with the conclusions of the EIS that surface water flows will be significantly reduced during construction and after reclamation. The report states that there will be short windows during operations when there will be increased chance of surface water runoff. The EIS cites a draft SWPPP(which has not been included in the appendices for review) and undefined BMPs mitigating this risk. In addition, the report states that a berm will be used at the south side of the project. We recommend that the construction and material used for this berm, and any others on site, be engineered and monitored to insure structural integrity.
2. The District agrees that infiltration amounts will increase as a result of the project. However, this could have negative impacts as material is removed from the site. The report states that mining will occur to within 25-30 feet of the water table and no closer than 3 feet above the water table. Depths to within 25-30 feet should have no material impact on the downstream resources that are reliant on ground water. However, if more material is removed and depth to ground water is less than stated, both flow rates and temperatures to the springs will increase and thereby disturb the biology of both the springs, seeps, and streams to the east of the site. Monitoring and mitigation plans should be prepared to prevent this from occurring.
3. AECOM has prepared reports to address the District's concerns about the impact of dust on the water resources to the east of the site. It seems that their data was developed using the surface area of the streams and wetlands with no consideration of the loading from the particulate matter deposited in the overall watersheds of these creeks and wetlands. Rain events will wash much more sediment into these water bodies than calculated in their report and could have an impact on the biologic communities of the resources. The District recommends that monitoring and mitigation plans be prepared to minimize this possibility.

Thank you again for the opportunity to comment on this project and if you have any questions or concerns, do not hesitate to contact the District.

Sincerely,



Jim Shaver

Administrator, Carnelian-Marine-St. Croix Watershed District

enc.

cc; Board of Managers
Carl Almer
Stu Grubb
file

CMSCWD
Emmons & Olivier Resources
Grubb Environmental Services



Carnelian-Marine-St. Croix Watershed District

Scandia Plaza II + 21150 Ozark Avenue + P.O. Box 188 + Scandia, MN 55073 + Tel 651.433.2150

November 30, 2011

Scandia City Council
14727 209th Street N
Scandia, MN 55073

Re: Zavoral Mining Draft EIS Comments

Dear Council Members:

Carnelian-Marine-St. Croix Watershed District is happy to provide the following comments on the Zavoral Mining Draft EIS. We have asked two consultants, Emmons and Olivier Resources, and Grubb Environmental Services to review surface water and ground water issues respectively. I have summarized their comments below and have enclosed copies of these memos as well.

The District's comments on the Draft EIS surface water impacts and mitigation standards are as follows. Changes from consultants' memos are in **bold**:

1. **Most** responses to our February 5, 2009, comments on the previous EAW for this project have been included in this EIS.
2. The EIS mentions a need for a District Stormwater Management Permit. The District's Erosion and Sediment Control Rule, Floodplain & Drainage Alterations Rule will also apply. The District's Wetland Management Rule may also be triggered for this project.
3. The description of the stormwater runoff analysis compares the existing land use to proposed restored land use. Analysis indicates a significant reduction in stormwater discharge rates and volumes primarily due to reestablishment of native vegetation and additional runoff ponding and infiltration. For the purposes of the District permit requirements the pre-development land use assumed runoff CN's are set in the Stormwater Rule and are similar to presettlement runoff CN's. We expect that the applicant will still not have any problem meeting District rate and volume restrictions.
4. The stormwater runoff analysis uses the 24-hr stormwater event to determine runoff rates. The District rule calls for the critical storm event, which is typically the 24-hr storm event. The 100-yr flood elevations (used to establish low floor elevations) for the proposed landlocked basins will need to use the 100-yr 10-day snowmelt **if long term plans for the site are to include built improvements**. Again we do not anticipate this

will be an issue for the proposed project.

5. We understand that District comments on groundwater issues are being provided by Stu Grubb, P.G. and we have therefore not reviewed those issues. However, we did note that the groundwater monitoring plan did not include monitoring for pesticides and fertilizers **as well as petro-chemicals** and we recommend that the District propose this requirement to the City, if there are agricultural fields that will drain to the mining operation and be infiltrated. This is important since the sand and gravel found at this site are very porous providing a direct conduit to the shallow groundwater aquifer.

6. Based on our initial review the Draft EIS appears to provide sufficient detail to adequately inform the District's permitting process for the proposed project.

7. The District has requested further information regarding potential impacts of dust on the small streams and wetlands adjacent to the subject property. Additionally, a request was made to calculate the gross impact of dust in tons per year upon the St. Croix River to evaluate if the current dust control methods proposed will be sufficient to protect the water resources of the District. These should be included in the final draft of the EIS. A monitoring regime should be included in the mitigation to monitor dust impacts on the adjacent streams and wetlands

The District's comments regarding ground water impacts and mitigation standards are as follows with changes from our consultant's comments in **bold**:

The DEIS did not include data from the pump test that was completed at the site. The following concerns were raised about the information that was provided:

1) The St. Lawrence Sandstone formation was identified as an aquitard or confining layer below the site. The St. Lawrence is an effective confining layer in other parts of the Twin Cities. Studies done in Brown's Creek Watershed District suggest that the St. Lawrence may be substantially different in the St. Croix valley where it is closer to the surface. The St. Lawrence may not be a confining layer below the site.

2) The pump test was run for about four hours at a very high pumping rate. Pumping during gravel pit operations will likely be at a lower flow rate for longer periods of time. Data from the pump test could be used to analyze potential impacts from the proposed pumping schedule, but that analysis was not included as part of the DEIS. **This analysis should be provided as part of a technical report summarizing the well test.**

3) The DEIS cites observations at nearby wells during the pump test as evidence that pumping the onsite well will not have impacts on residential wells. These observations are not conclusive evidence, and should be reconsidered in light of the short duration of the pump test.

4) The moderate cliff ecological communities are a rare, groundwater-dependant natural resource along the bluffs east of the site. The total flow of groundwater probably will not change as a result of mining. However, the frequency, duration,

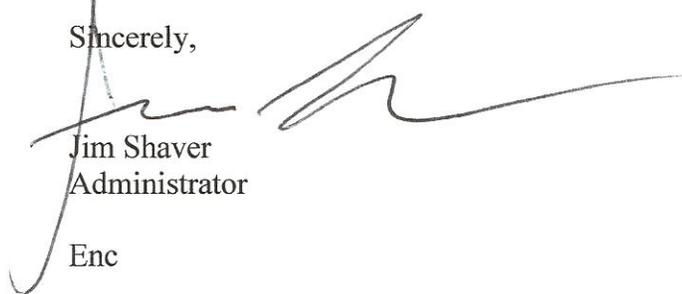
and location of groundwater discharges along the bluffs likely will be affected. No modeling of these changes has been completed.

5) Surface water monitoring will be conducted by Tiller and the Washington Conservation District at the monitoring station downstream from the site. Additional monitoring should include:

- Regular observations for changes to plants along the moderate cliffs east of the site. The moderate cliff ecological communities are a rare, groundwaterdependent natural resource.
- One or more groundwater monitoring wells installed along the east boundary of the site. The wells should be monitored for:
 - o Water levels
 - o The same water chemistry as the surface water monitoring, and
 - o Any chemicals used at the site, such as calcium chloride

Thank you for your concern for the water resources of the watershed district and for the opportunity to provide comments on this draft Environmental Impact Statement. If you have any questions, do not hesitate to call.

Sincerely,



Jim Shaver
Administrator

Enc

Cc; Stu Grubb
Dan Fabian
Board of Managers
file

Grubb Environmental Services
Emmons and Olivier Resources
CMSCWD

TECHNICAL MEMORANDUM

From: Stuart Grubb, PG

To: Jim Shaver
Board of Managers
Carnelian Marine St. Croix Watershed District

Date: November 23, 2011

**Subject: Review of Draft EIS
Zavoral Mine Pit**

Draft Environmental Impact Statement (DEIS) documents for the proposed Zavoral Mine Pit project were recently released for public review. Stuart Grubb reviewed the DEIS documents primarily for issues related to groundwater.

None of the groundwater issues identified in the DEIS should cause the CMSCWD to oppose the project. However, not all of the final EIS documents have been released, so further review of the project is recommended.

The most significant recent change to the project has been the elimination of gravel washing at the Zavoral site. This means that the onsite well will only be used to supply water for dust control. Water use for dust control will be about the same as water use for a single family residence. No water appropriations permit will be required.

The DEIS did not include data from the pump test that was completed at the site. The following concerns were raised about the information that was provided:

- The St. Lawrence Sandstone formation was identified as an aquitard or confining layer below the site. The St. Lawrence is an effective confining layer in other parts of the Twin Cities. Studies done in Brown's Creek Watershed District suggest that the St. Lawrence may be substantially different in the St. Croix valley where it is closer to the surface. The St. Lawrence may not be a confining layer below the site.
- The pump test was run for about four hours at a very high pumping rate. Pumping during gravel pit operations will likely be at a lower flow rate for longer periods of time. Data from the pump test could be used to analyze potential impacts from the proposed pumping schedule, but that analysis was not included as part of the DEIS.
- The DEIS cites observations at nearby wells during the pump test as evidence that pumping the onsite well will not have impacts on residential wells. These observations are not conclusive evidence, and should be reconsidered in light of the short duration of the pump test.
- The moderate cliff ecological communities are a rare, groundwater-dependant natural resource along the bluffs east of the site. The total flow of groundwater

probably will not change as a result of mining. However, the frequency, duration, and location of groundwater discharges along the bluffs likely will be affected. No modeling of these changes has been completed.

Surface water monitoring will be conducted by Tiller and the Washington Conservation District at the monitoring station downstream from the site. Additional monitoring should include:

- Regular observations for changes to plants along the moderate cliffs east of the site. The moderate cliff ecological communities are a rare, groundwater-dependant natural resource.
- One or more groundwater monitoring wells installed along the east boundary of the site. The wells should be monitored for:
 - Water levels
 - The same water chemistry as the surface water monitoring, and
 - Any chemicals used at the site, such as calcium chloride

Stuart Grubb and Jim Shaver attended the Public Advisory Committee meeting held November 16, 2011 at the Scandia City Hall. They both presented their questions and concerns regarding water resources to the PAC and the project proposers.

Date | November 16, 2011
To | Jim Shaver, Administrator CMSCWD
cc |
From | Dan Fabian, P.E. CMSCWD Engineer
Regarding | CMSCWD Comments on Draft Zavoral Mining Project EIS
Project is Located in Zavoral's Creek Subwatershed Management Area
CMSCWD Comment No. 09-001

Background:

Project is being proposed by the Tiller Corporation and is identified as the Zavoral Site in Scandia Minnesota. The Tiller Corporation currently operates one other Mining Operation in the Carnelian Marine St. Croix Watershed District (District) which is also located in Scandia. Proposed project involves re-opening a currently dormant mining operation on the Zavoral property, mining the property and restoring the property, including currently un-restored portions of the site that had previously been mined by others. Proposed project will increase the mining area by an additional 8-acres and to an additional depth of about 15-ft.

Portions of the project site are located within the St. Croix River District and scenic easement area. No new mining is proposed within that area but approximately 4-acres of previously disturbed area will eventually be restored when mining is completed.

The project site is located in the subwatershed of Zavoral's Creek which is tributary to the St. Croix River. This area of the Carnelian-Marine-St. Croix Watershed District (District) contains significant, unique high value resources both within and adjacent to the parcel boundaries as well as nearby. These resources have been documented as part of the EIS process. The District is very concerned about the protection of these resources.

Comments:

The following comments are based on our initial review of the Draft Environmental Impact Statement (EIS) which has been prepared for the proposed project.

1. Responses to our February 5, 2009, comments on the previous EAW for this project have been included in this EIS.
2. The EIS mentions a need for a District Stormwater Management Permit. The District's Erosion and Sediment Control Rule, Floodplain & Drainage Alterations Rule will also apply. The District's Wetland Management Rule may also be triggered for this project. The District's wetland inventory identified a wetland in the Northwest corner of the site which does not appear to be identified in the

EIS, (the drainage area of this wetland is potentially impacted by grading activities). We need to further review the inventory prepared for the EIS to verify that this area of the site was checked.

3. The description of the stormwater runoff analysis compares the existing land use to proposed restored land use. Analysis indicates a significant reduction in stormwater discharge rates and volumes primarily due to reestablishment of native vegetation and additional runoff ponding and infiltration. For the purposes of the District permit requirements the pre-development land use assumed runoff CN's are set in the Stormwater Rule and are similar to presettlement runoff CN's. We expect that the applicant will still not have any problem meeting District rate and volume restrictions.
4. The stormwater runoff analysis used the 24-hr stormwater event to determine runoff rates. the District rule calls for the critical storm event, which is typically the 24-hr storm event. The 100-yr flood elevations (used to establish low floor elevations) for the proposed landlocked basins will need to use the 100-yr 10-day snowmelt. Again we do not anticipate this will be an issues for the proposed project.
5. We understand that District comments on groundwater issues are being provided by Stu Grubb, P.G. and we have therefore not reviewed those issues. However, we did note that the groundwater monitoring plan did not include monitoring for pesticides and fertilizers and we recommend that the District propose this requirement to the City, if there are agricultural fields that will drain to the mining operation and be infiltrated. This is important since the sand and gravel found at this site are very porous providing a direct conduit to the shallow groundwater aquifer.
6. Based on our initial review the Draft EIS appears to provide sufficient detail to adequately inform the District's permitting process for the proposed project.