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MEMORANDUM

TO: Neil Soltis, Administrator, City of Scandia

FROM: Jed Chesnut, Wetland/Natural Resource Specialist

DATE: January 7, 2016

RE: **Zavoral Mining and Reclamation Project – Annual Inspection Report**

As per the contract (15-01) between the Washington Conservation District (WCD) and the City of Scandia, WCD staff performed inspections pertaining to Technical Service 2-5 of Exhibit B. Eight inspections were performed at the Zavoral Mining project in 2015 with an additional separate wetland boundary inspection. This memorandum serves as a year-end summary of those activities.

Technical Service 2 – Wetland Boundary Monitoring

Hydrologic monitoring data were provided to the WCD by the City's consulting hydrogeologist (LGB, inc). The data in 2015 were similar to the data obtained in 2013 and 2014. Groundwater elevations were relatively constant in each well during the monitoring period. Fluctuations in groundwater elevation were within approximately one foot, which would be consistent with natural variations of wetland hydrology, assuming the elevations in the wells can be reasonably extrapolated to the seepage discharge at the wetlands.

The groundwater elevation data as presented by LGB do not appear to indicate detrimental effects to the seepage wetlands located east of the active mining area.

The on-site review of the wetland boundaries did occur in 2015. All three wetlands referenced in the project's Conditional Use Permit (CUP) were field reviewed to determine if there were any detrimental impacts from the mine to the shape and extent of the wetlands. Representative areas of the wetlands were reviewed in the field. Prior to the review, all wetlands were reflagged by the applicant's consultant.

The current wetland boundaries appeared to be consistent with the previously delineated boundaries. There was no apparent discrepancy in the wetlands' size, shape, or vegetative composition. Based on the field review, it appeared that the wetlands had sufficient hydrology and did not appear to be affected by the Zavoral Mine and Reclamation Project. The Technical Evaluation Panel noted that no additional wetland boundary monitoring is needed for this project.

Based on the field review, the groundwater data, and the recommendation from the Technical Evaluation Panel, the WCD is recommending to the City of Scandia that no further field-based wetland boundary monitoring is needed. The WCD will continue to review the groundwater monitoring data from LBG, Inc.

Technical Service 3 – Erosion and Sediment Control Inspections

Inspection #1

Active mining and hauling was not occurring during the site visit; however the site was recently active. The silt fence that had been installed in 2013 was in good shape and effective for perimeter control. There was fine silt material being blown off-site from the Phase II reclamation area. Phase II mining was well underway and the edges of the mine area were graded such that runoff for nearly the entire site drains internally.

Inspections #2 - 5

Active mining was not occurring during the site visit. Tiller had addressed the issue of fine silt material being blown offsite by mulching and seeding the area. The old access road into the mine was previously removed and the area was graded in preparation for reclamation phase II. Overall the site was in compliance with erosion and sediment control requirements.

Inspection #6

Active hauling was not occurring during the site visit; however the site was active with material and site preparation. Tiller Corporation's representative noted that a small portion of silt fence along the eastern project limits (not near mining activity at the time) had been damaged and immediately repaired.

Inspection #7

The mine was active with material and site preparation. Overall the site was in compliance with erosion and sediment control requirements. The mine drains internally.

Inspection #8

The mine was active with material and site preparation; however there was no hauling to the Scandia mine due to extremely wet conditions within the pit. Work had been completed on the screening berms (west side of mine) and erosion control measures were adequately implemented. Portions of the Phase III mining area had been excavated. All silt fences were functional. Overall the site was in compliance with erosion and sediment control requirements.

The erosion and sediment controls at the Zavoral Mining and Reclamation project area have been professionally installed, well maintained, and fortified where deemed necessary. Additionally, all minor deficiencies had been rectified immediately and effectively. Tiller created swales and drainageways to ensure that stormwater runoff drains internally to the mine pit. Tiller implemented street sweeping best management practices to ensure that debris does not accumulate on Highway 97 and in roadside ditches. Overall, Tiller has been very cooperative and has provided the WCD with detailed tours of the site, descriptive summaries of its operations, and has provided follow-up correspondence, when needed. Overall, erosion and sediment control is being implemented as per the City's requirements.

Technical Service 4 – Threatened and Endangered Species

The site inspections included ensuring compliance with the mitigation measures as listed in Appendix C of the Zavoral Mine FEIS. Tiller Corporation's Standard Operating Procedures (SOP) for operations near Blanding's Turtles was clearly posted in the work trailer. An annual inspection of the butternut tree occurred during the May site visit. The presence of the butternut tree was verified by the WCD. The mine appeared to be in compliance with the requirements of the CUP as they relate to threatened and endangered species.

Technical Service 5: Reclamation Plan Review and Inspection

Phase I of the Reclamation was initiated in 2013 and has been managed since then. Reclamation Activities in 2015 consisted primarily of vegetation management of Phase I and grading of Phase II of the Reclamation plan. Preparation of soil materials for future reclamation phases also occurred.

During the 2015 site inspections, the WCD observed the successful establishment of the prairie in Phase I. Native vegetation was dominant and diverse throughout the reclamation area. It is likely that Phase I will meet the reclamation success parameters as stated in the CUP. As per Tiller's quarterly Reclamation Reports, ongoing vegetation management had occurred to control the growth and spread of weed species.

Twenty-five white pine trees had been transplanted in 2013. During the 2015 inspections, WCD confirmed that one white pine tree was dead.

Tree transplantation did not proceed as planned in 2013. Therefore Tiller proposed an adaptive management strategy as an alternative to planting additional trees to account for the <80% survival rate. The strategy entailed restoring and actively managing a sliver of existing woodland that was initially proposed to be removed and converted to prairie. The "Transition Area Development Plan" was accepted by the Scandia City Council on August 19, 2014. Tiller began implementation of the Transition Area Development Plan in the fall of 2014 which included selective herbicide application and vegetation removal. The transition area was planted with a total of 100 trees and shrubs in May 2015. WCD checked the status of the trees and shrubs throughout 2015 and the plantings remained viable throughout the year. The transition area will be continually monitored to ensure successful implementation.

Based on the field reviews of the reclamation activities in 2015, the WCD finds that the reclamation meets the requirements as given in the CUP and the 2015 annual operating permit, taking into account the City's approval of the Transition Area Development Plan and its implementation as an alternative to planting replacement trees.

This ends the summary report of WCD's 2015 monitoring activities. Please call me with any questions at 651-330-8220 x25.