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MEMORANDUM

TO: Kristina Handt, Administrator, City of Scandia
FROM: Jed Chesnut, Wetland/Natural Resource Specialist
DATE: January 15, 2015
RE: **Zavoral Mining and Reclamation Project – Annual Inspection Report**

As per the contract (14-01) between the Washington Conservation District (WCD) and the City of Scandia, WCD staff performed inspections pertaining to Technical Service 2-5 of Exhibit B. Six inspections were performed at the Zavoral Mining project in 2014. This memorandum serves as a year-end summary of those activities.

Technical Service 2 – Wetland Boundary Monitoring

The on-site review of the wetland boundaries did not occur in 2014 since mining operations were not active during the growing season. As per the Conditional Use Permit condition number 30 “the review shall occur within the growing season...when active mining operations are occurring.”

Hydrologic monitoring data were provided to the WCD by the City’s consulting hydrogeologist (LGB, inc). The data in 2014 were similar to the data obtained in 2013. 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.

Technical Service 3 – Erosion and Sediment Control Inspections

Inspection #1

Active mining was not occurring during the site visit. The silt fence that had been installed in 2013 was in relatively good shape with some damage due to snow plowing. Tiller committed to repairing the fence as soon as possible. The old access road had mostly been removed and there was some exposed soils present that could erode. WCD recommended seeding the exposed areas with oats as a temporary cover crop to provide stabilization until natural vegetation could become established.

Inspection #2

Active mining was not occurring during the site visit. Tiller had repaired all damaged areas of silt fence. Additionally, a gap in perimeter control at the southern extent of the mine that was identified in 2013 had been closed with the installation of new silt fence. Tiller had completed the seeding of the exposed soils near the old entrance road with oats as a temporary cover crop

to provide stabilization. Additional layers of silt fence had been installed along the property owner's access road since some undercutting of the fence had been observed.

Inspection #3

Active mining was not occurring during the site visit. The exposed soils near the old entrance road were stabilized with vegetation. Tiller had completed major grading work along the property owner's access road in an effort to create drainage ways that direct and collect surface water runoff into the mining area. This work significantly reduced the potential for stormwater discharge off the mine site along the south and southeast edge of the mine.

Inspection #4

Active mining was not occurring during the site visit. No significant changes had occurred in the mine. Tiller had previously completed major grading work along the property owner's access road and the drainage ways were functioning well.

Inspection #5

Active mining was not occurring during the site visit. No significant changes had occurred in the mine.

Inspection #6

Active mining was occurring during the site visit. A significant amount of material had been moved around internally in preparation for the next phase in mining. Hauling was occurring and to minimize the buildup of materials on Highway 97, Tiller had implemented a dedicated street sweeper to continuously clean the highway of debris. As noted in earlier inspections, there was a small area near the location of the previous entrance road that drained away from the pit. This area had been stabilized with oats and natural vegetation throughout the year. Additional excavation in November along the northern extent of the mine removed this small area and as a result, the entire northern boundary of the mine pit drains internally.

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 October 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 consisted primarily of tree transplantation, grading, topsoil amendment, and seeding. Reclamation activities in 2014 consisted primarily of monitoring, vegetation management, and preparation of soil materials for future reclamation phases.

During the 2014 site inspections, the WCD observed the initial establishment of the prairie in Phase I. Native vegetation was observed growing throughout the year which suggests Phase I will be successful, however it is still too early in the process to assess 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 July inspection, WCD observed one white pine tree that appeared to be dying. This tree appeared dead during subsequent inspections. The tree will be checked again in 2015 to confirm its status.

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 WCD met onsite with the City, National Park Service, and Tiller in May and as a result Tiller prepared a "Transition Area Development Plan" which was accepted by the Scandia City Council on August 19th. Based on that approval, Tiller began implementation of the Transition Area Development Plan which included selective herbicide application and vegetation removal. The transition area will be monitored in the future as part of the overall reclamation monitoring activities.

Based on the field reviews of the reclamation activities in 2014, the WCD finds that the reclamation meets the requirements as given in the CUP and the 2014 annual operating permit, taking into account the City's approval of the Transition Area Development Plan as an alternative to planting replacement trees.

This ends the summary report of WCD's 2014 monitoring activities. Please call me with any questions at 651-330-8220 x25.