

ATTACHMENT 2

Wetland Delineation Report

November 14, 2003

Mr. Mike Caron  
Tiller Corporation  
7200 Hemlock Lane, Suite 200  
Maple Grove, MN 55311-6480

Subject: Tiller Corporation Wetland Investigation – New Scandia Site

Dear Mr. Caron:

On November 11, 2003 two wetland specialists conducted a wetland investigation to determine if jurisdictional wetlands are present at the New Scandia site. The investigation was performed as part of the data collection process that was undertaken in order to prepare an Environmental Assessment Worksheet. The New Scandia site is located in Washington County, T32N, R19W, SW ¼ of Section,18, and the N ½ of the NW ¼ of Section 19. The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map shows a PUBGx (palustrine/unconsolidated bottom/intermittently exposed/excavated) wetland in the southern portion of the site (Figure 1). The site has been disturbed by past sand and gravel mining operations. The area that was assessed for possible wetlands is shown on Figure 1.

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#### BACKGROUND DATA COLLECTION AND REVIEW

The following materials were collected and reviewed to preliminarily identify potential wetland areas and gain a better understanding of the Site's geomorphic setting:

- U.S. Geological Survey (USGS) New Scandia 7.5-minute topographic quadrangle map.
- U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) Map.
- Minnesota Department of Natural Resources (MnDNR) Protected Waters and Wetlands map - Washington County (1988).



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- U.S. Department of Agriculture- Natural Resource Conservation Service (USDA-NRCS) Soil Survey and Comprehensive Hydric Soils List for Washington County, Minnesota (1995).
- Digital orthophoto data (for Washington County, 1994) from USGS.

## METHODS

Two wetland specialists walked the New Scandia site on November 11, 2003. Vegetation, soils, and hydrology were assessed using the Routine On-Site Wetland Delineation Method according to the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) to identify and verify potential jurisdictional wetlands.

The project area was investigated for areas where the vegetation, soils, and/or hydrology showed wetland characteristics. The methods used to evaluate wetland hydrology, soils, and vegetation is described below.

Site photographs are attached in Appendix A.

## WETLAND HYDROLOGY

Direct observation of inundation, soil saturation, or other field indicators were used to identify wetland hydrology. Weather was also taken into consideration since recent precipitation events, or lack thereof, can significantly affect observed hydrology. The reliability of field indicators was tested by comparing their presence/absence along a wetland-upland gradient and by their correlation with wetland vegetation and hydric soil indicators.

## HYDRIC SOILS

If it was determined that hydrology and hydrophytic vegetation was present the soils were assessed by boring a soil sample, generally greater than 12 inches deep, with an open faced auger. Soil characteristics were described using the USDA soil classification for soil texture and a *Munsell Soil Color Chart*.

According to the Soil Survey for Washington County, MN, the site area consists of silt loams, loamy sands, gravelly loamy coarse sand, a rock outcrop complex, and areas of past and active gravel pits. The gravel pit areas comprise the most predominant soil classification and cover about 42.8% of the site. The Emmert gravelly loamy coarse sand



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and the Emmert loamy coarse sand covers 23.9% and 2.2%, respectively, of the site. Other soil types found on the site are the Gotham loamy sand (12.8%), Antigo silt loams (11.3%), Santiago silt loams (5.0%), and the Mahtomedi Variant-Rock outcrop complex (2.0%). None of these soil types are listed in the NRCS hydric soils list for Minnesota.

The Emmert soils are well drained, with very rapid permeability that formed on outwash plains in noncalcareous sand and gravelly sand outwash. The Gotham soil is a well-drained, rapidly permeable soil that formed on outwash plains in loamy sand or sand of 4' or greater thickness. The Antigo soils are well drained with moderate permeability in the upper silty mantle and very rapid permeability in the underlying material. The Antigo soils formed in a moderately deep silty mantle over sandy outwash. Santiago soils are well-drained, moderately slowly permeable soils on loess-mantled glacial uplands. These soils formed in 15-30 inches of loess and the underlying loamy glacial till. The Mahtomedi Variant is comprised of excessively drained, rapidly permeable soils on bedrock-controlled uplands that formed in a dominantly sandy mantle of erosional sediments and residuum weathered from sandstone bedrock.

#### HYDROPHYTIC VEGETATION

The hydrophytic vegetation criterion is met when more than 50 percent of the dominant species in a plant community have a wetland indicator status of facultative (FAC) or wetter. Dominant species are defined as species that cover at least 20 percent of the sample area. The *National List of Plant Species that Occur in Wetlands - Minnesota* (Reed 1988) was used to identify the wetland indicator status of plants at the Site.

#### RESULTS

Two wetland specialists walked the New Scandia site and no visible wetland indicators were present. No areas on the site were determined to meet any of the criteria of a wetland. Only upland vegetation and hydrology were noted. No soil samples were taken. There are no indications that the NWI mapped wetland shown on Figure 1 is present at the site.

Please feel free to contact us at (763) 551-2416 if you have any questions regarding the wetland investigation. We appreciate the opportunity to work on this project, and we hope to work with you again in the near future.

Very truly yours,

Earth Tech, Inc.



Mark Rothfork  
Ecologist

cc: Kirsten Pauly, Sunde Engineering, Inc.



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View South From North End of Site



View East From North End of Site

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View North From North End of Site



View West From North End of Site

E A R T H  T E C H

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