

January 4, 2010

This report, data table and accompanying draft map were created by Carrie E. Jennings, Minnesota Geological Survey, to fulfill an agreement between the Science Museum of Minnesota and the University of Minnesota dated the 2 January, 2007. It was designed pursuant to a subset of objectives outlined in the Museum's larger project entitled "**River Sediment Source Apportionment to the Lake Pepin TMDL--Source Characterization**," sponsored by Minnesota Pollution Control Agency, CFMS Contract No. A94798. The contractor was to:

1. use air photos and topographic maps to interpret surficial geology in reference lake watersheds;
2. sample major glacial landform assemblages for grain size analysis;
3. assist in relating this map information to reference lake signature.

The contract was amended to include an additional 300 samples in order to better model the sediment yield from the Minnesota River watershed. The additional sampling was designed to help to recognize the differences in particle size distributions among the different glacial landform assemblages. A mapping approach (rather than a grid spacing of samples) designed to collect samples from representative units in a landform assemblage allowed for characterization of the dominant texture of the land surface using fewer samples.

#### DELIVERABLE PRODUCTS CONTAINED ON THIS CD INCLUDE:

1. Report entitled [\*Sediment Source Apportionment to the Lake Pepin TMDL--Source Characterization\*](#)
2. Appendix A: [Grain size analysis tables](#) for samples linked to sampling location on map
3. [Appendix B](#): A paper supporting the assignment of textures to till sheets by B.A. Lusardi, C.E. Jennings and K. L. Harris, in prep., Lithologic and Textural Classification of tills of the Des Moines lobe—a work in progress.
4. A draft surficial map of glacial landforms and surface sediment with emphasis on texture of major units in watershed created in ArcMap 9.2 ([layout view](#)) is accompanied by a [legend](#).

To open the map in a GIS, use [MnPepin\\_layout.mxd](#), switch to "data view" and turn on other layers of interest, for example, the 2008 field points gathered for this project. The textural data for these points are linked to an external Excel spreadsheet, [LakePepinTextures.final.xls](#). These data are accessed through the map by clicking on a data point with the *i* tool. The data can also be viewed as an external table in Microsoft

Excel. If you do not have ArcInfo or ArcMap you can download a free “Explorer” application: <http://www.esri.com/software/arcexplorer/explorer.html>. Other data points from ongoing MGS mapping projects are shown as points on the map but their data tables are not yet available.

If you have questions about the geologic information provided in this map and report, please contact the author, Carrie E. Jennings [carrie@umn.edu](mailto:carrie@umn.edu).