

Geotube Sediment Sampling Plan 2006

The following sampling plan is based on dewatered sediment testing requirements for the landfill as specified by the September 29, 2005 “Conditional Plan of Operation Approval Modification – Special Waste Acceptance Plan for Dredged Material Disposal,” (Permit).

Attached is a proposed pad layout for 2006 that has been prepared by J.F. Brennan. The pad layout is labeled to show the location of the geotubes on the dewatering pad.

Proposed 2006 Sampling Plan

Percent Solids/Moisture Content, Vane Shear/Undrained Shear Strength

GW Partners will perform one sample for approximately every 3,000 cubic yards (as allowed by Section 11. of the Permit). Samples will be collected from each of the exposed geotubes, which are identified in red on the attached pad layout diagram. Each geotube will have 3 individual sample locations, which will be evenly distributed along the length of the geotube. A core sample will be removed from the full depth of the geotube at each of the individual core locations and will be composited. From this single composite sample, percent solids/moisture content test, and an unconfined compressive or undrained shear strength test will be performed. A vane shear test will be performed onsite directly next to each of the 3 sample locations along the geotube.

By sampling each of the 39 exposed geotubes located within the stacked set of geotubes, a total of approximately 37,284 cubic yards of sediment will be tested out of estimated 103,593 cubic yards on the fully loaded dewatering pad. This is equivalent to approximately one sample for every 2,700 cy of dewatered sediment and 36% of the total material on the dewatering pad. Sediment from each of the 2006 sub-areas would be included.

On the east side of the dewatering pad 22 geotubes out of 70 or 20,348 cy out of 70,657 cy (29%) would be sampled. On the northwest side of the dewatering pad 10 geotubes out of 22 or 9,788 cy out of 22,489 cy (44%) would be sampled and on the southwest side 7 geotubes out of 10 or 7,148 cy out of 10,447 cy (68%) would be sampled.

In addition, once the material is loaded out and replaced by new geotubes on the east side, the new geotubes would also be sampled at the same frequency. Based on the dredge amounts for 2006, 47 geotubes are estimated to be used on the east side the second time through. In this situation, a total of 15 geotubes out of 47 or 14,188 cy out of 47,865 cy (30%) would be sampled.

In summary, the proposed sampling plan for percent solids/moisture content, vane shear/undrained shear strength results in a sampling frequency of approximately one sample per 2,700 cy, which approximates the one sample per 3,000 cy requirements in the Permit.

Grain Size Distribution, Triaxial Shear, Consolidation, Hydraulic Conductivity, Atterberg Limits

GW Partners will perform one sample for approximately every 30,000 cy (as allowed by Section 11. of the Permit). Again, samples would be collected from the exposed geotubes. Samples will be collected to represent each of the sub-areas dredged in 2006. Based on current dredge estimates for 2006, 1 sample will need to be collected for CD2S, 3 samples for POG2 and E1S, 2 samples for POG3 and 1 sample for POG4.

Sample material for geotechnical analysis will be collected along with the material for the percent solids/moisture content and vane shear/undrained shear strength testing. A composite sample will be gathered from the 3 individual core locations in each geotube.

Paint Filter Testing

Paint filter tests will be performed to the extent necessary to confirm that sediments sent to the landfill meets the requirements of the paint filter test. A filter reviewing the results from 2005 paint filter tests, it was noted that every failed paint filter test was from an area of the geotube that was not stacked upon. Therefore, sampling exposed areas of the geotubes should be a conservative measure for free liquids.

Each stacked geotube has approximately 7.5 feet of area on each end that is not covered by the geotube above it. This area is accessible for sampling. One core sample will be collected from each end of the geotubes that have been stacked upon and individual paint filter tests will be performed on these samples. In addition, each exposed geotube will have individual paint filter test for each of the three sample locations and will be collected along with the percent solid/moisture and vane shear/undrained shear strength samples.

If any sample fails the paint filter test, material from the failed location will be mixed by the backhoe with sediment that has passed the test. This material will be re-tested prior to load out. The sediment will not be loaded unless it passes the paint filter test (required by Onyx Hickory Meadows).

PCB Testing

In 2006 individual geotubes will not be sampled and analyzed for PCB's. Instead, in-situ PCB results will be used for documentation of the PCB concentration levels of the dewatered sediment. Sediments that are characterized as TSCA material in-situ will be segregated and transported to the Wayne Disposal Landfill in Belleville, Michigan. Sediments that are characterized as non-TSCA materials in-situ will be transported to the Onyx Hickory Meadows Landfill in Chilton, Wisconsin. As approved by The WDNR and US EPA, the in-situ TSCA determination will be based on the average sediment PCB concentrations over an interval from 12 inches above to 12 inches below the sample interval(s) containing 50 ppm or greater, then only the interval(s) with sediment present will be considered in the determination. Only sediment determined to be non-TSCA using the approved method will be sent to the Onyx Hickory Meadows Landfill.

TSCA Materials Testing

Additional testing will need to be performed on TSCA materials in accordance with Wayne Disposal's permit. A composite sample from the 3 individual's locations will also need to be collected and sampled for TCLP, semi volatiles, volatiles and sulfides. This composite will be collected at the time the percent solids/moisture content and vane shear/undrained shear strength samples are collected.