



Weanack Land Reclamation Project

Charles City County, Virginia

FACT SHEET

Introduction

The Maryland Port Administration (MPA) has signed a Right of Entry agreement with Weanack Land, LLLP (Weanack) and Severson Environmental Services, Inc. (SES) to allow removal of dredged material from the MPA Cox Creek Dredged Material Containment Facility (DMCF) for use in conducting a pilot-scale demonstration as part of the Weanack Land Reclamation Project in Charles City County, Virginia. Weanack and SES are pursuing this demonstration project at no cost to MPA and separate from MPA Solicitation J03S0232091 for the demonstration of Innovative Reuse of Dredged Material. If this project is successful, they may submit a proposal to conduct additional demonstrations under this MPA solicitation in the future.

Background

Since 2001, Weanack has placed over 350,000 cubic meters of fresh water dredged material from the Woodrow Wilson Bridge Project and 250,000 cubic meters of saline dredged material from the Earle Naval Weapons Station in New Jersey into monitored upland placement cells and documented their conversion to agricultural uses. Weanack is currently conducting a small pilot study on Appomattox River sediments to evaluate the potential for biodegradation of polycyclic aromatic hydrocarbons (PAHs) and beneficial use for upland placement and agricultural use. Weanack is interested in evaluating the Cox Creek DMCF dredged material due to its saline nature and content of acid-producing compounds. Weanack and SES have teamed with the Virginia Tech Department of Crop and Soil Environmental Sciences and the Old Dominion University Department of Ocean, Earth, and Atmospheric Sciences to provide technical and monitoring support during the demonstration project.

Project Summary

The overall objective of the pilot-scale demonstration project is to evaluate several placement and treatment alternatives for the Cox Creek DMCF dredged material to render the material suitable for larger scale upland placement and agricultural use. Specific objectives include:

1. Determining changes in the soil chemical properties over time following placement of the Cox Creek DMCF dredged material into an upland oxidizing environment.
2. Measuring the effects of two alternate liming procedures (blending versus layering) on acid production and associated soil and water quality parameters.
3. Documenting the effects of oxidation and lime application on water quality immediately below the emplaced dredged material.

Weanack has received approval to conduct the project from the Virginia Department of Environmental Quality (VDEQ) under their existing Virginia Pollution Abatement Permit. The project was initiated in December 2009 with the excavation of approximately 200 cubic yards of dredged material stockpiled at the Cox Creek DMCF. The dredged material was transported by truck to the Weanack Land Reclamation Project site in Charles City County, Virginia. Representative samples of the dredged material were collected and analyzed for acid-base parameters, contaminants, and nutrients. In early 2010, the dredged material will be placed in three experimental cells excavated into the fine-grained native subsoil and surrounded by berms. Two primary treatment cells will each be constructed at a size of 20 by 30 feet, with dredged material placed in each cell to a depth of 48 inches. A third cell, approximately half the size of the treatment cells, will be constructed and filled with untreated dredged material for use as a control cell. The floor of each cell will be compacted to obtain a low permeability and will be sloped to a gravel drain for removal of accumulated leachate. Each cell will also be equipped with lysimeters for collection of leachate samples.

During placement of the dredged material into the primary treatment cells, the dredged material in the first cell will be thoroughly mixed with lime; alternating layers of dredged material and lime will be placed in the second cell. Following placement and settling of the dredged material and lime in the two treatment cells, appropriate fertilizer will be applied to the surface, the material tilled, and the surface seeded with acid tolerant grass species.

Monitoring will be conducted over a two-year period and will include vegetation surveys, soil sampling and analysis, and leachate collection and analysis. At the conclusion of the two-year period, the project will be evaluated and a project report prepared. A determination of the fate of the dredged material in the cells will be made in concert with the VDEQ, based on the results of the study. The material may be left in place, removed and applied on other land areas at the site, or removed and placed into a landfill.

**Project
Coordination**

The pilot-scale demonstration project is being closely coordinated with MPA, Weanack, SES, Virginia Tech, and the VDEQ. All activities associated with the Weanack Land Reclamation Project are conducted in accordance with their Virginia Pollution Abatement Permit. All data collected during the project will be furnished to MPA and the VDEQ.

For more information, contact Bill Lear of the MPA at (410) 385-4462.