## Problem

ERDC maintains a suite of models used by ERDC and district partners to evaluate the fate of sediment and constituents during the dredging process. ERDC also maintains a suite of analysis tools for sediment properties and processes. These models include CDFATE, DCORMIX, STFATE, and MDFATE/MPFATE. These models and tools lack modern interfaces that work in Windows. Many have models still have DOS interfaces. These interfaces need to be updated to better serve district clients as well as in-house ERDC users. Tool interfaces need to be updated to increase automation and decrease cost of application to district clients.

Study Description

The need for this RT was identified through multiple RARG SONs addressing beneficial uses for dredged material, sustainable solutions for dredged material management, and improved methods to predict dredged material fate. This research addresses the lack of consistent, user-friendly interfaces for numerous dredging models used by USACE to evaluate dredged material management. This research will also address the lack of automation software for sediment process tools commonly applied to dredged material management issues.
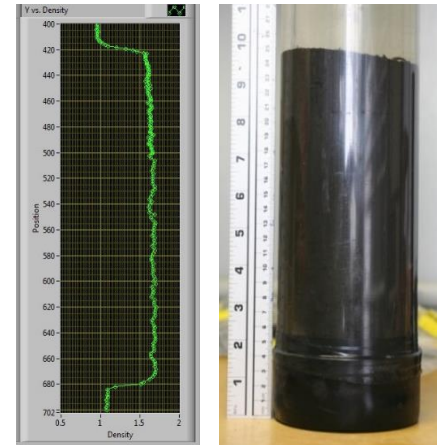
Products

- Tool interface for automated scanning of sediment cores for xradiography analysis
- Model interface for MPFATE (Multiple Placement FATE of dredged material)
- Model interface for GTRAN long-term sediment transport model

Summary

This research task will develop new model interfaces that are user-friendly and that will run on today's computers. In addition, this project seeks to define sustainable paths forward so as to keep interfaces and tools up to date. These developments will provide districts with easy-to-use interfaces for dredge models.
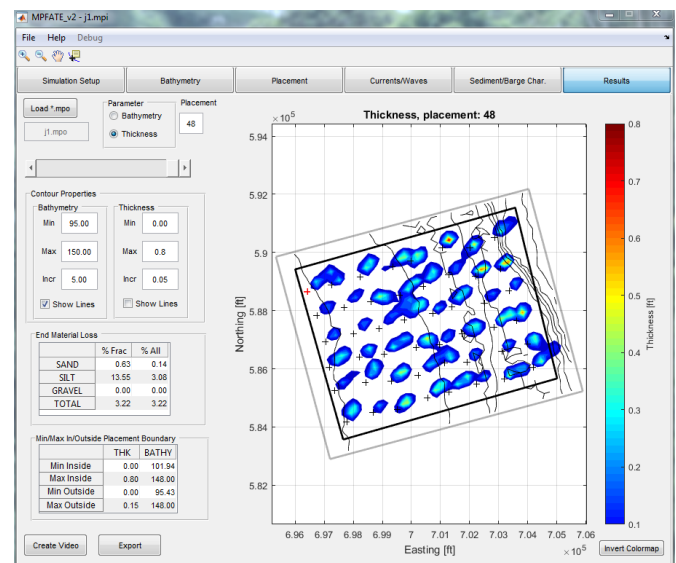
Balancing operational and environmental initiatives and meeting complex challenges of dredging and dredged material placement in support of the navigation mission.

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