

South River Science Team Remedial Options Program Status

September 26, 2017
NR Grosso, DuPont

Mark your Calendars

ROPs Web Meeting
November 8, 2017
1 PM

SRST 2017 ROPs Activities

- Characterization of Biochars for use in the South River
 - Carol Ptacek and Students, Waterloo
- XRF Field Validation for Mercury concentrations in soil
 - Robert Brent and Students, JMU
- Pore Water Monitoring at the Base of BMA banks
 - Danny Reible and Students, TTU
- Stable Mercury Isotopes and Source ID Analysis
 - Joel Blum and Spencer Washburn, U Michigan)
- Verification of Aquanty HydroGeoSphere Model
 - Steve Berg, Aquanty and Matthias Ohr, AECOM
- Dynamic Mercury Cycling Model
 - Reed Harris
- Floodplain Soil Amendment Pilot
 - Bill Reese, AECOM

Biochar Characterization (Waterloo)

- Objective: Evaluate alternate biochars for application to the South River to ensure supply for Bank Stabilization IRMs.
 - Specifically, characterize new Biochar Now following same protocols used in previous cowboy biochar studies (e.g. leaching) and Alt Eng Biochars. Evaluate long-term potential for production of MeHg.
- Possible 2018 Pilot: Biochar “socks” suspended in water column – Evaluate effectiveness of scrubbing Hg from flowing or protected water areas in the river

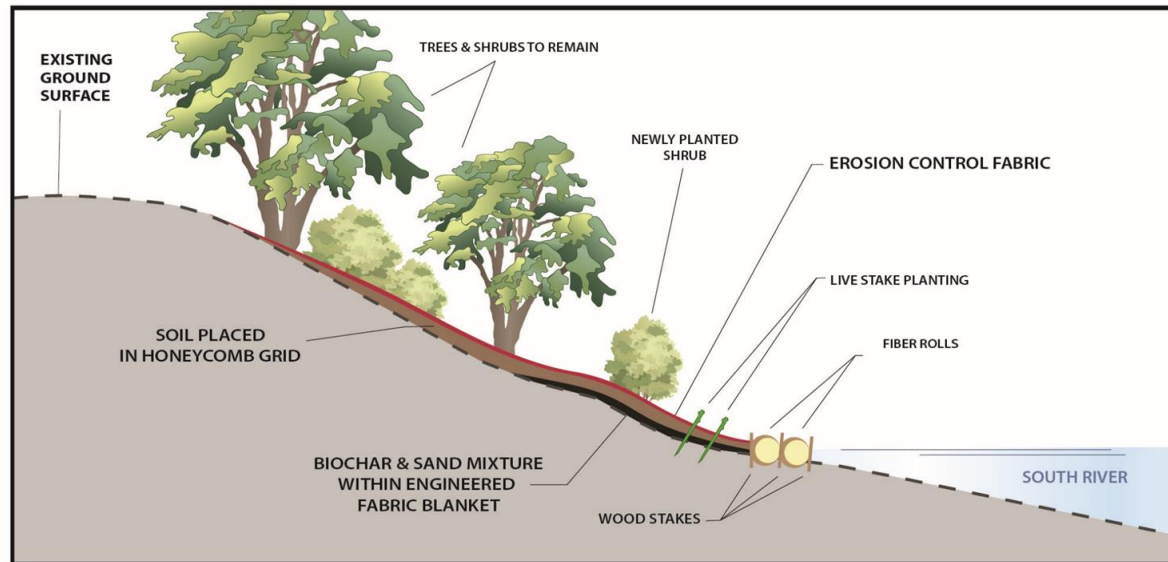
XRF Field Validation Study (JMU)

- Objectives: Expand South River field validation conducted in 2016 to ORNL

Pore Water Monitoring (TTU)

- Objective: Assess the changes in near bank / base of bank Hg pore water concentrations before and after remediation

Contaminated Soil Capping Approach

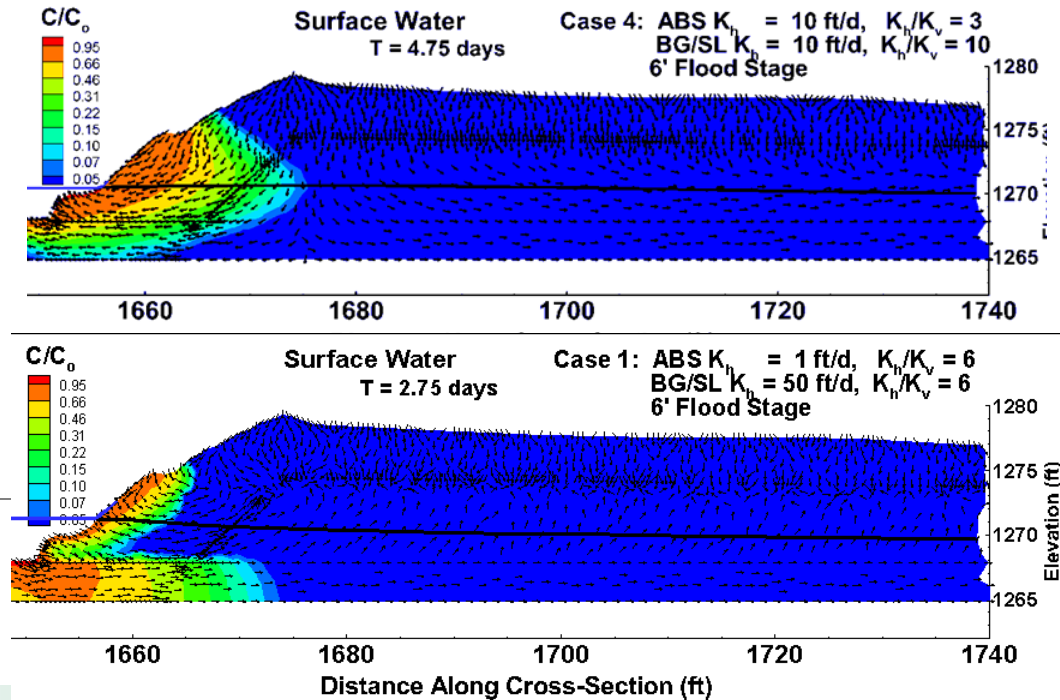


Stable Mercury Isotope Characterization (U Mich)

- Objective: Test the hypothesis that mercury cycling can be further understood / refined through the characterization of stable Hg isotopes in different environmental compartments

Hydrogeosphere Model Verification (Aquanty/AECOM)

- Objective: Validate previous modeling through a field demonstration. Understand hydraulics of river flood stages and implications for Hg transport

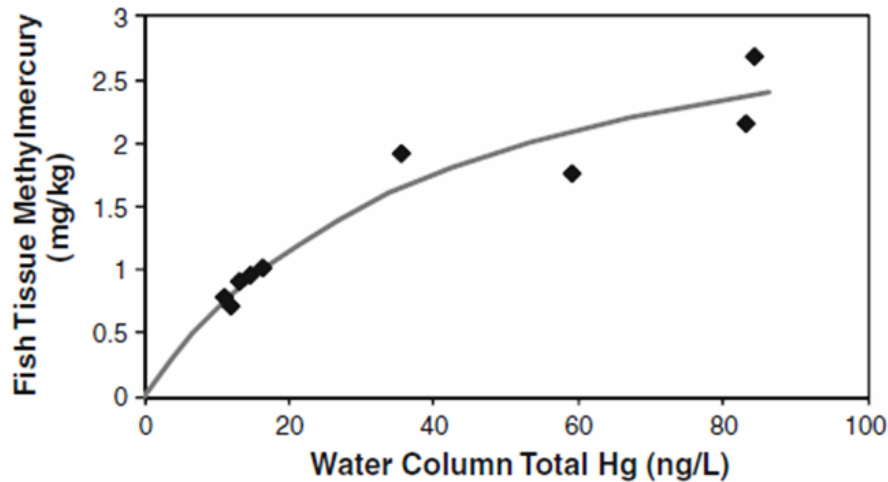


Floodplain Amendment Pilot Update (AECOM)

- Objective: Validate the effectiveness of *in situ* biochar amendments to soil in reducing the bioavailability of Hg to terrestrial invertebrates

Dynamic Mercury Cycling Model Update (Harris)

- Objectives: Develop a mechanistic model that can aid in predicting river recovery in response to remedial actions, and possibly timing



Brent and Kain, 2011

South River Mercury Loading Analysis based on Studies 2004-2015

South River: CONCEPTUAL SITE MODEL SCHEMATIC

