

# AquaBlok® Installation Profiles



**Site Location:** *US EPA Region 3*

Aberdeen Proving Grounds, Canal Creek, MD **Project Status:** Completed in Dec. 2011

**Setting / Purpose:** Freshwater River – Tidal Wetland – In-situ Treatment

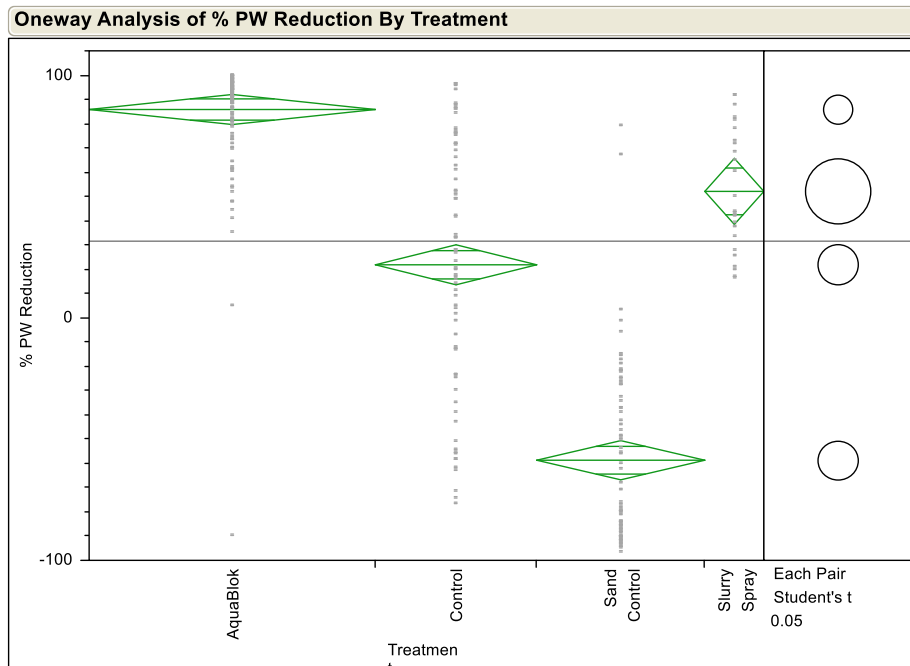


**Contaminant(s) of Concern:** Wetlands owned by the DoD often act as sinks for contaminants including persistent, bioaccumulative, and toxic (PBT) compounds. Based upon previously conducted site investigations (US Army, 2008), PCBs, DDx, mercury and other metals were identified as the primary contaminants of concern at Canal Creek APG. Historic data indicated that elevated concentrations of PCBs, and to some extent DDx, were present in surficial hydric soil samples collected in the channel and wetland areas above Hanlon Road.

**Objective / Site Area:** The objective of the project was to demonstrate that *in-situ* treatment technologies can be used to sequester contaminants with minimal impact to the ecology of sensitive systems. Specifically, activated carbon was used as a hydric soil amendment to bind PCBs and reduce PCB bioavailability and/or toxicity in sediments. Canal Creek is located on the Edgewood peninsula, which is situated between the Gunpowder River to the west and the Bush River to the east. The Canal Creek Marsh and Landfill area of the land is located within the Canal Creek Study Area (CCSA), which is a 1,600-acre study area in the northern region of the Edgewood Area.

## Results:

### ANOVA Statistical Analysis of % Reduction in PW by Treatment



## Evaluation of Activated Carbon Application in High Value Wetland:

- Multiple Approaches Evaluated for PCB Porewater *In-Situ* Treatment
- Statistically Significant PCB Porewater Reductions Achieved
- Reductions in Macro Invertebrate Uptake of PCBs Recorded
- Benthic and Ecological Community Not Significantly Impacted

## Acknowledgements:

The Department of Defense (DoD) Environmental Security Technology Certification Program (ESTCP) has funded the Naval Facilities Engineering Command Engineering Service Center (NAVFAC ESC) and its DoD partners U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), Naval Facilities Engineering Command Atlantic Division (NAVFAC LANT), Air Force Center for Environmental Excellence (AFCEE), and Engineer Research and Development Center Waterways Experiment Station (ERDC WES) as well as their contractors AECOM Environment and the University of New Hampshire (UNH), to demonstrate and validate an innovative technology for the *in situ* sequestration of contaminants present in hydric soils of palustrine wetlands (ESTCP Project ER-0825: *In Situ* Wetland Restoration Demonstration).