Phyto-Engineering to Remediate PAH and PCB Contaminated Dredged Material. (A02-price102445-Oral)

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Abstract:

Treatment of dredged material to reduce contaminants such as PAH and PCB to acceptable levels is a prerequisite to the beneficial use of dredged material. Phyto-engineering is a low-cost treatment option being investigated for effectiveness in dredged material remediation. The ERDC, Waterways Experiment Station (WES) conducted greenhouse studies that indicated corn was effective in reducing both PAH and PCB concentrations after 45 days of growth. The US EPA, Army Corps of Engineers and WES initiated a joint pilot study at the Jones Island confined disposal facility (CDF) in Milwaukee, WI. Dredged material containing PCB compounds ranging from <0.33 to 1.6 mg kg-1 and PAH compounds from 0.33 to 13.3 mg kg-1 was excavated from within the CDF, blended and placed in treatment cells measuring 3.7 x 6 m to a depth of 0.3 m. Four treatments included willow plantings, volunteer vegetation, corn with tillage and fertilizer and no plants with tillage and fertilizer. Pre-treatment samples were collected and analyzed for PAH, PCB and other parameters. Post-treatment sampling and analyses will determine effectiveness of each treatment alternative. Preliminary results will be presented.

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