# Phyto-Engineering of Lead Contaminated Soil. (A02-lee224630-Oral)

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## **Abstract:**

Phyto-Engineering was applied to soil and dredged material contaminated with lead. Soil lead was immobilized by the application of phosphate fertilizer and lime and the sites will be vegetated for phyto-stabilization. One site is a firing range that contained up to 8,000 mg/kg lead. Bench-scale tests included the application and incorporation of rock phosphate and superphosphate fertilizers into the surface soil. The site is scheduled to be covered with a layer of dredged material containing very little lead and a tidal wetland established. Bench-scale tests were conducted for 100 days under upland aerobic environmental conditions followed by 100 days of flooded wetland conditions. The other site was the reconstruction of a soccer field using dredged material contaminated with lead. Phosphate fertilizers and lime were blended into a manufactured topsoil using the dredged material, yardwaste and zoo manure. While the final blended topsoil contained 130 mg/kg total lead, bioavailable lead indicated by Physiologically Based Extraction Test (PBET) showed less than 1 per cent of the lead was bioavailable. Grass sod will be used in the reconstruction of the soccer field.

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