Environmental Solutions

Daramend® Reagent
Case Study

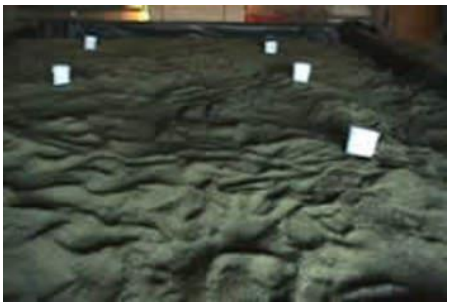
Rapid Treatment of TNT and DNT to Remedial Goals at the Former Raritan Arsenal

Summary

Daramend® reagent was applied at pilot scale to approximately 100 tons of soil from the former Raritan Arsenal in Edison, New Jersey. Area 4 at the Raritan Arsenal was formerly used as a high explosives salvage and melt-out area from World War I through the 1920s.

Solution

Homogenized soil from the site contained approximately 600 mg/kg of TNT/DNT. The solution soil excavated from Area 4 was placed in an Engineered Biotreatment Cell (EBC) constructed in a small building on the former arsenal property. The EBC was built using portable barrier walls overlain with a 40-mil HDPE liner. The liner was protected with an 8-inch layer of sand, and a 2-foot layer of soil from Area 4 was placed on the sand layer. The EBC also included an irrigation system and decontamination pad. Because the pilot was conducted in the winter months, the building was insulated and heated.



Results

The pilot was scheduled to run for about 75 days. After 28 days of treatment, however, TNT concentrations had been reduced to an average of 74 mg/kg and amino-DNT was reduced to 25.9 mg/kg. These levels met the proposed Remedial Goals for the site. After 56 days, the concentration of TNT was reduced to <5 mg/kg and amino-DNT was reduced to <3 mg/kg. Because of rapid rate of treatment, the demonstration ended after only 56 days.

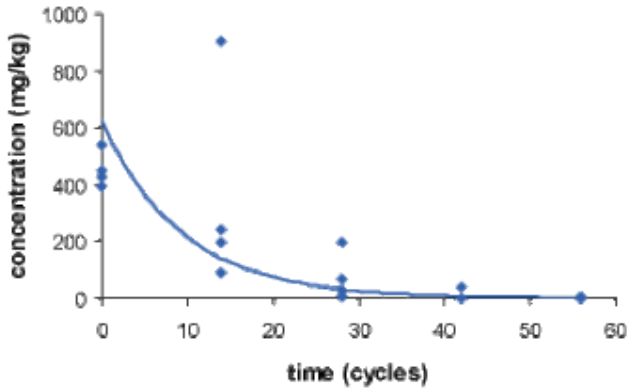


Figure 1: Influence of Daramend treatment on TNT concentrations in soil at the former Raritan Arsenal, Edison, NJ

PeroxyChem

remediation@peroxychem.com | 1.866.860.4760 | peroxychem.com/remediation