Daramend® Reagent for the Treatment of Herbicides and Pesticides at a Confidential Chemical Facility in Ontario, California

Summary

Daramend® reagent was the selected technology at a site for the treatment of 350 tons of soil impacted by phenoxy-acid herbicides (2,4-D, and 2,4,5-T), and other chlorinated pesticides (DDT, DDD, and DDE).

Solution

The treatment process involved the application of Daramend to a 60 cm thick layer of soil within a treatment cell. Due to the volatile and highly toxic nature of the phenoxy-acid herbicides the treatment cell was covered with a polyethylene clad greenhouse. Negative pressure was maintained within the greenhouse by continuously drawing air from the greenhouse and discharging it through a granular activated carbon filter. Soil undergoing treatment was subjected to several treatment cycles and was irrigated to 90% of the soil water holding content at the start of each treatment cycle.

Results

The application of Daramend served to reductively de-chlorinate, and subsequently mineralize the chlorinated herbicides and pesticides. The concentrations of the target contaminants, 2,4-D, 2,4,5-T, and DDT, were reduced by over 96%, 84%, and 91%, respectively (Figure 1).

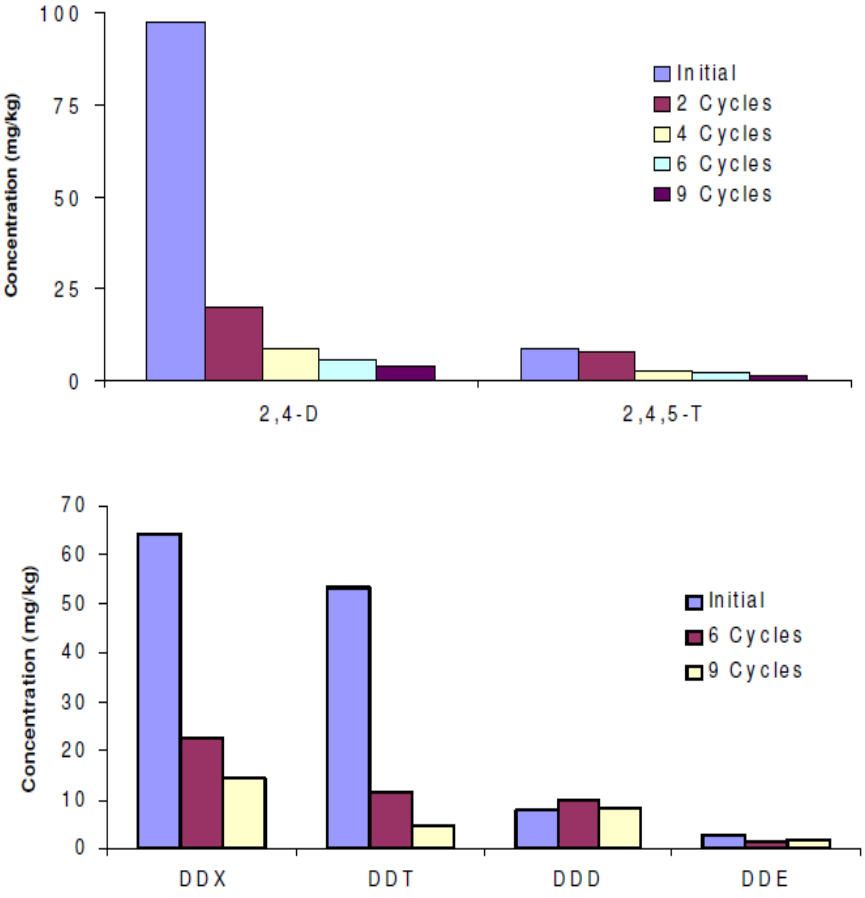

Figure 1: Effect of Daramend treatment on the concentrations of 2,4-D, 2,4,5-T, DDT, DDD, and DDE during a pilot-scale demonstration at a Chemical facility in Ontario.