HC-1 and HAP-1 Bioprocesses

Bioremediation of Non-volatile Hydrocarbon (C-12 to C-55) Contaminated Soil

Problem description

Approximately 5000 m^3 of soil at a former automobile factory were contaminated with various refractory, non-volatile aliphatic and polycyclic aromatic hydrocarbons including lubricating oils, paraffin and asphalts.

MADEP solution

By the enrichment culture technique, MADEP s.a. has isolated micro-organisms that degrade aliphatic and aromatic hydrocarbons at high rates and with specificity.

The contaminated soil was placed in piles and aerated. Hydrocarbon degrading strains of bacteria isolated by MADEP s.a. were cultivated on-site and used to inoculate the piles of contaminated soil.

Biodegradation was further stimulated by addition of inorganic nutrients.

Results of the full-scale treatment

Treatment Duration	Total Hydrocarbon Concentration (ppm)
Start	5000 - 10,000
after 2 months	1000 - 2000
after 3 months	500 - 1000
after 4 months	150 - 450
after 5 months	50 - 150

Greater than 97 % hydrocarbon removal