



Terramend® Reduces Contaminant Below Remedial Goals in Only 10 Months

Ex Situ Treatment of Soil Containing Hydraulic Oil and Diesel Fuel
at a Former Manufacturing Facility

Site Overview

Site: Georgetown, Ontario, Canada

Purpose: A former manufacturing facility in Georgia, Ontario required *ex situ* treatment of approximately 4,000 tons of soil containing hydraulic oil and diesel fuel. PeroxyChem's Terramend® Reagent was applied and effectively reduced contaminant concentrations to below the remedial goals in approximately 10 months of treatment.



Solution

The goal was to achieve the remedial standard of 1,000 mg/kg of heavy oils and 100 mg/kg for gas/diesel in all sampling zones. At this site the client was particularly sensitive to treatment costs, and a very low-cost approach was required. Due to the constraint, treatment proceeded more slowly than otherwise possible, resulting in lower remedial costs.

Prior to the application of Terramend® Reagent, the soil was excavated and placed in a lined remediation cell to a thickness of approximately 2 feet, and was then tilled to ensure homogenization. Following cell preparation, Terramend® Reagent was applied using a site-specific aerobic protocol. The technology involved the addition of nutrients and proprietary organic amendments to optimize the rate of microbial activity in the soil. The process also required the maintenance of soil moisture content at approximately 50% of the soil water holding capacity. Maintenance of the soil moisture content was accomplished through irrigation and tillage. Tilling was performed using a specialized deep rotary tiller with the ability to till to a depth of 2 feet.

Results

Active treatment of the soil occurred within the treatment cell for a period of approximately 12 months, from August 2000 to September 2001, with a 5-month inactive period from December 2000 to April 2001 (see chart below.) During this period, soil hydrocarbon concentrations were reduced by approximately 99%.

All hydrocarbon concentrations were reduced to less than the established remedial standard of 1000 mg/kg for heavy oils, and 100 mg/kg for gas/diesel in all sampling zones. Following treatment, the mean concentration of the gas/diesel range hydrocarbons was 3 mg/kg while the mean concentration of heavy oil hydrocarbons was 67 mg/kg.



Reduction of total petroleum hydrocarbon (TPH) concentrations using Terramend® Reagent

	April 23, 1998 (Initial Soil Characterization)	Sept 11, 2000 (1 st Progress Sampling)	Aug 13, 2001 (1 st Progress Sampling)	Dec 5, 2001 (Final Progress Sampling)
Gas/Diesel Range	- *	-	27	3
Heavy Oil Range	-	-	608	67
TPH	7,820	678	625	70
RDE**(%)	N/A	91	92	99

* Not Determined

** Removal and destruction efficacy for TPH

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