

BACKGROUND

Barenco was retained by a chemical manufacturer client to design and conduct a remediation plan for this 5 acre former chemical products packaging facility located in northeast Toronto. Environmental investigations indicated the presence of total petroleum hydrocarbons, chlorinated solvents and freon 11 and 12 impacts. The objective was to reduce the concentrations of chlorinated solvents to meet criteria derived by Barenco using *Site Specific Risk Assessment* (SSRA).



Remediation strategy was twofold. First, about 18,000 tonnes of petroleum hydrocarbon impacted soil would be excavated and *bioremediated* to meet the appropriate industrial/commercial generic criteria, thereby allowing reuse of the soil on site as backfill. Second, an air-sparging and vapour collection system designed to remove chlorinated solvents and their degradation products from ground water would be installed.

The SSRA process involved extensive Ministry of Environment involvement, review and approval. Approximately 18,000 tonnes of soil were successfully bioremediated to meet the appropriate criteria. Barenco established MOE-approved site specific criteria for six chemical parameters: PCE, TCE, 1,1,1 TCA, 1,1 DCE and cis 1,1 DCE. Comparison to these criteria, rather than to the generic criteria, indicated that only PCE and TCE required remediation in two areas of the property.

THE RESULT

PCE and TCE were successfully treated through removal of impacted soil and DNAPL where present, and the use of an air sparging/soil vapour extraction system. Finally, all surface buildings were removed, excavations filled and compacted and the site returned to original grade.