

PROBLEM

Jagger Hims Limited was retained to conduct an assessment of soil and groundwater contamination at a waste transfer station in Etobicoke, Ontario. The assessment was undertaken to confirm the presence and the extent of organic contamination previously identified by others and to evaluate the potential for off-site contaminant migration. The findings from the assessment were subsequently utilized to design and implement a remedial action plan.

APPROACH

The investigations for this study generally involved the advancement of boreholes, soil sampling, monitoring well installation, well development and sampling, water level monitoring and data compilation and reporting. The results confirmed the presence of halogenated and aromatic hydrocarbons in the soil and groundwater at excessive levels, including non-aqueous phase liquids (NAPL). A short list of remedial alternatives considered appropriate for the site was developed in association with the client. These alternatives are as follows.



- ▶ Site wide institutional control actions including property access restrictions and ongoing monitoring of groundwater, storm water and air.
- ▶ Contaminant source and plume control actions including construction of a grout cutoff wall along the downgradient property line, installation of horizontal drains and sumps to collect aqueous and non-aqueous phase liquids and installation of soil vapour extraction systems.
- ▶ Contaminant reduction remedial response action including a treatment process train consisting of liquid and vapour granular activated carbon (GAC), catalytic oxidation, chemical oxidation and catalytic metal reduction, and in situ treatment of contaminants.

SOLUTION

The preferred approach was to contain the contaminants on-site and to a lesser extent, to reduce the overall contaminant source mass. A pump-and-treat system was installed in August 1993. The remedial system is comprised of five large diameter recovery wells equipped with controllerless pneumatic pumps. Contaminated groundwater is pumped to an initial storage tank for solids settling before flow through a GAC treatment system. The treated effluent is released into a sanitary sewer. Monitoring of the system is undertaken on a routine basis to ensure that the remedial system is containing the contaminant plume and that the treated effluent is in compliance with the City of Etobicoke's Sewer Use By-Law. To date, the system has achieved it's design objectives.