

The Challenge:

- This Brownfield property was being redeveloped as parkland in conjunction with an adjacent residential development.
- A bay is located within 30 m of the site. Under Reg. 153/04, the site was classified as being environmentally sensitive due to the bay's location.
- Previous environmental site assessments delineated soils impairment associated with VOCs, PAHs and PHCs and groundwater was impacted with PHCs.

The OxyTek Solution:

- An in-situ remediation program was implemented using OxyTek-L™. Thirty eight injection wells were installed across the zone of impairment.
- Treatment of the VOCs was completed during warm weather conditions. OxyTek-L™ successfully treated PAHs and PHCs during sub-zero temperatures.



In-situ remediation with Big O injection wells installed in preparation for OxyTek-L™ injection

Background:

The subject property was a designated Brownfield site. Previous industrial operations included a fuel terminal for furnace oil, a dry cleaning operation, a service station and most recently a garage.

The native soils consisted of sandy soil interspersed with dense silty sand lenses at depths ranging between 2.5 and 4.0 m below grade level. These lenses consisted of the impacted soils. Two additional small zones of contamination, associated with heavy metals, were present on-site which were excavated and disposed off-site to a licensed landfill facility.



Big O tile injection well

Process:

Big O tile was used to create the injection wells which were installed in a grid format. The initial OxyTek-L™ injection remediated the VOC impacted soils. Due to the high concentrations of PAH and PHC, additional injections were required.

The site remediation was completed to meet Ontario Ministry of the Environment (MOE) Regulation 153, Table 2 criteria for residential / institutional / parkland property use criteria. A Record of Site Condition was filed for this property in 2007.



**OxyTek™ Case Study 100043:
Brownfield Property, Barrie, Ontario**

Soil Concentrations Pre-Treatment and Post-Treatment using OxyTek-L™

	PARAMETERS:			
	Tetrachloroethylene	Trichloroethylene	TPH F2 (C ₁₁ – C ₁₆)	TPH F3 (C ₁₆ – C ₃₄)
Regulations* :	0.45	1.1	150	400
Highest ppm levels obtained:				
Pre-treatment	8.8	4.4	13,000	5,400
Post-treatment	<0.45	<1.1	<150	<400

All values in ug/kg – ppm – parts per million MDL – method detection limit

< – below detection limit **Parameter exceedence**

*MOE O.Reg. 153/04 – Table 2 – Full Depth Generic Site Condition Standards in a Potable Ground Water Condition for Residential / Institutional / Parkland Property Use.