

## CASE STUDY

# Fuel Oil & BTEX



## Background

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**CLIENT:** Insurance adjuster with environmental consulting firm, on behalf of the property owners.

**DURATION:** 8 months, Fall and Winter

**LOCATION:** Georgian Bay, Ontario, Canada

**PROJECT VALUE:** \$45,000 CDN

Two cottage properties on Georgian Bay were impacted when a tree fell onto the first cottage's fuel oil tank, breaking the fuel line and allowing fuel oil to seep into its surrounding soil and groundwater as well as the subsurface of the down-gradient property next-door. The goal was to restore the two properties to their original conditions, as well as preventing the migration of the fuel oil to the lake.

## Approach

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The insurance adjuster hired by the property owner's insurance company contracted a multi-national environmental consulting firm to characterize the site and delineate the impact; they recommended an integrated approach.

### Integrated remediation:

- 1** A contractor was hired to excavate and remove as much of the impact as possible from around the cottages through a standard dig and dump exercise.
- 2** IRSL was contracted to develop and execute on a detailed, green in-situ remediation plan to remove the remaining impacts from near and under the cottages.



## APPLIED TECHNOLOGIES

IRSL's plan combined surfactant flushing and chemical oxidation using the existing wells installed by the environmental consulting firm, along with infiltration galleries.

### 1 Surfactant flushing:

- Completed in one day.
- A non-ionic surfactant was injected to increase the solubility and mobility of the fuel oil, thereby reducing the fuel oil mass associated with the soil.

### 2 Chemical oxidation:

- Completed over the course of three injections.
- Catalyzed persulphate was injected into the subsurface to chemically oxidize the fuel oil, converting it to inert compounds.
- This choice was considered green as it would have no negative effect on the lake water or groundwater.

## Challenges

Through the course of the first injection, more impacts were discovered. IRSL immediately modified and optimized the program to address the new impacts, negating the need to add additional injections to the plan or increase the remedial time frame.

## Results

- The two cottages did not require demolition.
- Despite the discovery of additional impacts, IRSL completed the project on time and on budget.
- The project met the Ministry of Environment Table 8 Standards.
- Monitoring during the project and post-project samplings have confirmed that the site is remediated.



InSitu Remediation Services Ltd (IRSL) is one of Canada's most experienced remediation companies. Our team has designed, implemented, and maintained soil and groundwater remediation programs in diverse geological environments in North, Central, and South America, Europe and the Middle East.

We confidently implement innovative solutions, based on sound knowledge, using seasoned field staff. Our pragmatic, flexible approach reduces effort, cost to our clients, and environmental risk.

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