



OVERVIEW

At a rural residence, petroleum hydrocarbons leaked from a heating oil storage tank into the underlying groundwater, rock and soil. The release created potential health and ecological risks for the residents and local environment. Soil concentrations included:

- PHC (maximum concentration of $> 1,110 \mu\text{g/g}$)

Groundwater concentrations ranged up to:

- PHC (maximum concentration of $> 64,200 \mu\text{g/L}$)

SCOPE OF WORK

- Acquired all relevant permits to complete the remediation program
- Implemented a pilot-scale test to determine areas of influence and injection rates
- Designed and optimized an *in-situ* program to maximize treatment efficiencies
- Implemented a program that minimized capital expenditures and infrastructure



THE VERTEX APPROACH

- Chemical oxidation and enhanced aerobic biodegradation
- Multiple applications
 - Under floor slab and footing
 - Into overburden and fractured rock
- Injection of chemical oxidant
 - $> 845 \text{ kg}$ of RegenOx
- Injections completed using:
 - Horizontal & vertical wells

OUTCOME

- Over 3,500 L of oxidant solution delivered to impacted areas - on going
- Residents able to remain in house
- Structure not affected
- RegenOx solution effectively distributed throughout impacted areas
- Significant reductions for:
 - BTEX
 - F1 & F2
 - F3 & F4

