

# ENVIRONMENTAL FRACTURING APPLICATIONS



## ENHANCED SOIL VAPOUR EXTRACTION AND AIR SPARGING USING SOIL FRACTURING

**... conventional soil vapour extraction and air sparging coupled with soil fracturing technology provided the site owner with a remedial solution at minimal disturbance and cost.**

### PROBLEM

Recent upgrades to retail fuel station infrastructure (new tanks, pumps, etc.) were made at a service station site where surrounding soil and ground- water contamination still resided. Owner desired clean-up of residual petroleum hydrocarbons with minimal disturbance to site.

### OBJECTIVES

- to expedite *in situ* remediation of residual hydrocarbons using SVE & AS enhanced by soil fracturing.

### FIELD PROGRAM

A total of 31 fractures were emplaced in impacted soils at the site within two working days without interference to other remedial contractors working at the site. Permeable fracture pathways were created at 7 locations at depths ranging from 3.0 m to 8.0 m to enhance the performance of soil vapour extraction and air sparging systems that have recently been commissioned.

### ASSESSMENT

Soil fracturing resulted in:

- a comprehensive fracture network that provides effective flow pathways, extensive coverage in affected soils, and significant increase in bulk soil permeability
- no need for well installations in boreholes fractured
- no need for disruptive and costly soil excavation.

**Soil fracturing being conducted during installation of remedial works at an independent retail fuel station in Alberta.**

