

# Soil & Groundwater Remediation Major Rent-A-Car Facility Denver, Colorado

Several remedial technologies were evaluated, and Dual Phase Extraction (DPE) was chosen as the selected remedy.

A DPE Pilot Study was completed. The results confirmed the viability of DPE for removing free-phase gasoline product and reducing concentrations of BTEX and other gasoline compounds in impacted soil and groundwater.

Groundwater samples were collected and analyzed to determine groundwater chemistry. The information was used to design the treatment train, and to verify that subsurface conditions were similar to the Pilot Test area.

A Risk Assessment was performed. The results indicated that removal of free product and significant hydrocarbon concentration reduction in soil and groundwater would be protective of human health and the environment, and would not impact off-site receptors.

A Corrective Action Plan (CAP) was completed in November 1999. The CAP contained design/build specifications, and included start-up, operation and monitoring plans. The CAP was approved by the State of Colorado in August 2000.

Remedial system construction was sequenced over an extended period (Dec. 2000 – Aug. 2001) to coincide with an extensive fleet fueling system upgrade at the site. This provided the minimum disruption to fueling operations and allowed for use of common contractors. Minor construction tasks continued concurrently with upgrades to the fleet vehicle wash system up until March 2003.

Airport approval, air permitting and wastewater discharge permitting were completed by March 2003. Remedial system start-up occurred in April 2003.

Prior to the start of active remediation, free product was present and the dissolved plume encompassed over 400,000 square feet. By April 2004, free product was no longer present. By January 2005, the plume of dissolved hydrocarbons above cleanup criteria was reduced in size by 96%, to 15,000 square feet, in the former source area.

Groundwater concentrations continued to decline, and in December 2006, the remediation system was shut off. The project is now in a monitored natural attenuation program.



## ***Project Highlights***

- ❑ Free product was present. The dissolved plume extended over 400,000 square feet surrounding the facility's fleet refueling operation.
- ❑ O & M completed the project turn-key from initial site assessment through system design, permitting, installation, start-up and operation and closure monitoring.



- ❑ O & M provided construction services and management, and coordinated remediation system installation concurrently with an extensive fueling system upgrade utilizing common contractors.

