

CASE STUDY – Remediation: Dual Phase Vacuum Extraction (DPVE)

Client: Supermarket Retailer

Site: Former Petrol Filling Station and Large Supermarket Site in Scotland



Earlier investigation at this site in the highlands identified significant hydrocarbon contamination in the soils and groundwater beneath the site. This was found to include free phase product up to 15cm in depth, floating on the groundwater across the former forecourt and tank farm.

A dissolved plume of highly impacted groundwater emanating from this source was identified flowing beneath the supermarket towards a sensitive local watercourse 150m to the north of the site.

Working with our client to extremely tight time constraints GEO² designed and implemented a treatment programme capable of rapid removal of the phase separated product and clean up of the contaminated groundwater plume.

A dual phase vacuum extraction (DPVE) system was installed at the site, to permit rapid removal of the source. This technique applies a vacuum to the surface of the groundwater, inducing movement of phase separated contamination towards the centre of

each vacuum lance. Fluids and vapours are abstracted at the lance tip and transferred to a nearby plant for treatment. Following four months of operation all detectable phase separated contamination was removed from site.

In the following six months after the source removal the concentrations of total petroleum hydrocarbons present in the groundwater plume across the site were reduced from a worst case 80,000µg/l to 8,300µg/l, a reduction of around 90%.

GEO² experience with this tried and tested technology, allows rapid removal of phase separated contamination from groundwater bodies, plus the capacity to subsequently remediate hydrocarbon impacted groundwater and soils to agreed high standards. GEO² installation and operation techniques allow for this technology to be operated with minimal disruption to the day to day operations of a site and installed in such a way as to pose no barrier to ongoing development programs.

