



Case Summary:

In-Situ Remediation by Dual Phase Extraction and Total Fluids Pumping

Telluric Land Remediation Ltd is currently undertaking in-situ remediation of a commercial development site in southern England contaminated with free phase oil hydrocarbons. A combined approach to remediation has been adopted comprising dual phase extraction and free product / groundwater abstraction using pneumatic total fluid pumps.



At the project planning stage a range of in-situ and ex-situ remediation techniques were considered. The chosen method was selected due to a number of factors including site geology, nature of contamination and the close vicinity of sensitive environmental receptors including a public drinking water abstraction borehole, a Site of Special Scientific Interest and areas of archaeological interest. There was also a requirement for remediation works to be undertaken concurrently with site redevelopment.

Following discussions with the Regulators, an Environment Agency mobile plant licence (EAWML 30260) was deployed in addition to a trade effluent discharge consent, which allows discharge of treated groundwater to sewer.

The site in question is a former engineering works manufacturing aircraft engines and was found to be heavily contaminated with free phase oils including diesel and lubricating oils. Two plumes of contamination are present originally covering a total of approximately 4,500m² and containing oil floating on the groundwater at thicknesses in excess of 1.0m.

Case Summary No. C766/1

Eight abstraction wells were drilled to 7.0m and fitted with automatically operated pneumatic borehole pumps. Seventy five dual phase extraction boreholes were also installed which promoted the removal of free product and groundwater under vacuum.

The above ground treatment plant comprises two vacuum units each providing a flow rate of 500m³/h at 500mbar. Abstracted liquids initially enter a 60,000 litre settlement tank prior to an oil-water separator. Separated groundwater then passes through an air stripper for the removal of dissolved volatile organic compounds before discharge to sewer. To date over 17 million litres of groundwater have been abstracted and treated and approximately 10,000 litres of recovered oil has been removed from site for recycling.

The site redevelopment programme is complete although the in-situ remediation system continues to recover significant quantities of oil contamination. Abstraction boreholes and interconnecting pipework are incorporated into the groundworks and therefore do not interfere with the current operation of the site.

www.telluric.uk.com

Tel 029 20453311

Fax 029 20453311



Telluric Land Remediation Ltd
Unit K1
South Point Industrial Estate
Foreshore Road
Cardiff
CF10 4SP

**CONTAMINATED LAND AND GROUNDWATER
REMEDATION CONTRACTORS**