

## Project Example – Assessment of Kerosene Risk to Aquifer - Staffordshire

Project Start – June 2012

Project End – April 2103

A domestic heating oil tank was found to be leaking at a property in Staffordshire. The geology of the area consisted of sandstones which had been classified by the Environment Agency as a Principal Aquifer. As there was little or no soil cover over the aquifer, the concern was that the kerosene spill may have contaminated the underlying groundwater resource.

CTSL were initially appointed to undertake remediation using excavation to remove the main shallow kerosene plume from beneath the original tank location. The depth of excavation was however, limited by the increasing strength of the weathered sandstone at depth as well as the presence of foundations to the main dwelling.

A number of remediation specialists were consulted to identify the most cost-effective method of groundwater remediation and a number of approaches were identified, including several that would involve significant cost. CTSL argued however, that groundwater impact had not been proven. Using the industry-standard Source-Pathway-Receptor methodology for risk assessment, CTSL argued that unless actual kerosene contamination could be identified within groundwater or surface water features in continuity with groundwater, no demonstrable contamination could be deemed to have occurred.

Using this approach, CTSL have undertaken a groundwater modelling exercise in the area surrounding the kerosene leakage. Geological, topographical and hydrological issues have been explored to allow groundwater and surface water features that are likely to be most at risk from the kerosene spill to be identified. The main at-risk features have then been sampled to determine if there is evidence for kerosene impact.

No evidence for contamination has been identified at the targeted sample locations and the Environment Agency have confirmed that they no longer retain an interest in this case.

