

# Remediation Beneath Residential Properties, UK

## In-Situ Chemical Oxidation and Aerobic Bioremediation Treats



### Summary

Significant petroleum hydrocarbon (TPH) contamination was discovered during the redevelopment of a former manor house into a block of residential properties. The TPH contamination was the result of leaks from a heating-oil tank, which resulted in free- and dissolved phase contamination in the soils and groundwater underneath the properties onsite.

Although the tank had been removed during the redevelopment, further remedial works were required in order to protect the occupants of the properties and prevent offsite migration.

### Treatment

In order to treat the high contaminant concentrations, an integrated method was chosen. The LNAPL and high levels of TPH contamination were chemically oxidised using three injections of RegenOx via nine injection wells. The residual dissolved phase contamination was treated using a single injection of ORC Advanced via the wells and six direct push injection points. The ORC Advanced provided a controlled release of oxygen in order to enhance the aerobic biological degradation for a period of 9-12 months after injection.

### Why of Special Interest?

As the contamination was present beneath constructed buildings, an in-situ remedial method was the only viable solution. Regenesi's technologies were employed to remove LNAPL and treat the groundwater to very low concentrations with minimal disturbance to the site or its residents.

### Remediation Details

#### Site Type:

Residential Redevelopment

#### Remediation Driver:

Reduce risk

#### Remediation Approach:

In-situ chemical oxidation and aerobic bioremediation

#### Remediation Technologies:

RegenOx® and ORC-Advanced®

### Geology

	Bedrock
	Gravel
X	Sand
	Silt
	Clay

### Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

### COC

X	Petro HCs
	Petro LNAPL
	Chlorinated VOCs

#### COC Concentration Levels:

Free product  
Dissolved phase TPH approx. 45,000µg/L

#### Treatment Depth:

0.5m to 3m BGL

#### Remediation Cost:

£26,000