

Petro  [®]
Remediation Fluid

Project Experience in Europe and the UK

**Remediation of petrol stations, rail depots, industrial
manufacturing, brownfield and oil spill sites**



Key Advantages:

- Safe
- Rapid
- Easy to apply
- Low cost
- Compatible with underground services
- Minimises disruption

ABOUT THE TECHNOLOGY

Engineered to provide immediate and long-lasting results, PetroFix® offers a cost-effective, in situ treatment for petroleum hydrocarbon contamination. It has been used at >600 sites across 15 countries worldwide, including in the UK and Europe.

What is PetroFix?

A water-based suspension of micron-scale (1-2µm) activated carbon and biostimulating electron acceptors (slow and quick-release nutrients).

Site Types

- Fuel depots
- Industrial tank farms
- Petroleum retail stations
- Rail, road and domestic oil spills

Treatable Contaminants

- Petroleum Hydrocarbons
 - Gasoline Range
 - Diesel Range
- BTEX
- MTBE

Application Types

- Direct push injection
- Pour or inject into wells
- Flooding' of backfill material
- Excavation treatment (spray application)



FEATURED PROJECT

Site type: Commercial redevelopment site, UK
Geology: Made ground over river terrace deposits
Contamination: Diesel range TPH

Treatment

PetroFix was applied in 2 hotspot areas using direct push injection:

- Grid injection
- 2m x 2m spacing between injection points
- Injection from 2-5mBGL, targeting the smear zone and upper section of impacted groundwater

Result

A single injection round was used to sorb and enhance the biological degradation of TPH hotspots. This allowed the installation of geothermal boreholes directly into the hotspot areas. These drive a groundsource heat-pump to allow the climate control of the new commercial development on the site.

The works were completed safely and in only a few days. The treatment continued *in situ*, allowing the development to progress uninterrupted and on programme.

SELECTED EUROPEAN AND UK PROJECTS

Petrol Stations and Rail Depots

Contaminant Type	Concentration	Geology	Application Type	Location
Petro. H -Aromatics (BTEX, TPH-G); Petro. H - Fuel Oxygenates (MTBE, TBA)	High (>20 mg/L)	Silt	Direct push injections, barrier formation	Foggia, Italy
Petro. H - Aromatics (BTEX, TPH-G); Petro. H - Fuel Oxygenates (MTBE, TBA)	High (>20 mg/L)	Silt, Sand	Injection into wells, grid formation	Yorkshire, UK
PAHs; Petro. H - Aromatics (BTEX, TPH-G)	High (>20 mg/L)	Moraine and sandy layers	Direct push injections, two barriers	Hagalund, Sweden
Petro. H - Aromatics (BTEX, TPH-G); Petro. H - Fuel Oxygenates (MTBE, TBA)	High (>20 mg/L)	Silt and Sand	Grid injections in wells	Málaga, Spain
Petro. H - Fuel Oxygenates (MTBE, TBA)	Med (1-20mg/L)	Silty Sand	Direct push injections, barrier formation	Bud, Hungary
Petro. H - Aromatics (BTEX, TPH-G); Petro. H - Fuel Oxygenates (MTBE, TBA)	Med (1-20mg/L)	Silt	Direct push injections, grid formation	Vlaanderen, Belgium
Petro. H - (BTEX, TPH-G)	High (>20 mg/L)	Clay and Silty Sand	Excavation and Direct push injections, grid formation	Zeeland, Netherlands
PAHs	Low (<1 mg/L)	Sand	Injection into wells, grid formation	Latina, Italy

Industrial Manufacturing Sites

Contaminant Type	Concentration	Geology	Application Type	Location
Petro. H - Aromatics (TPH-D)	High (>20 mg/L)	Sandy Clay, Sand, Gravel	Direct push injections, grid and barrier formations	Northumber- land, UK
Petro. H - Aromatics (BTEX, TPH-G)	High (>20 mg/L)	Silty Sand	Excavation application and direct push injection, grid formation	Duisberg, Germany
Petro. H - Aromatics (TPH-D)	Med (1-20 mg/L)	Sand, Gravel	Direct push injections, grid formation	Suffolk, UK
Naphtalene	Med (1-20 mg/L)	Sand	Direct push application in wells	Berkshire, UK
Petro. H - Aromatics (TPH-D)	High (>20 mg/L)	Silt	Direct push injections, grid formation	Scania, Sweden
Petro. H - Aromatics (BTEX, TPH-G)	Med (1-20 mg/L)	Sandy Clay, Sand	Excavation application	Brussel, Belgium
Petro. H - Aromatics (BTEX, TPH-G)	Med (1-20mg/L)	Sandy, clayey Gravel	Direct push barriers	Essex, UK
Petro. H - Aromatics (BTEX, TPH-G)	High (>20 mg/L)	Gravel	Injection into wells in barrier forma- tion,incl. indoor application	Torino, Italy

Domestic and Commercial Oil Spill Sites

Contaminant Type	Level	Geology	Application Type	Location
Petro. H - (TPH-O)	High (>20 mg/L)	Silt and Silty Sand	Excavation trench application	Kildare, Ireland
Petro. H - Aromatics (BTEX, TPH-G)	High (>20 mg/L)	Sand, Gravel	Application in barrier and excavation	Milano, Italy
Petro. H - (TPH-O)	High (>20 mg/L)	Sand, Gravel	Well application, barrier formation	Norfolk, UK
Petro. H - Aromatics (BTEX, TPH-G); Petro. H - Fuel Oxygenates (MTBE, TBA)	Med (1-20 mg/L)	Sand	Exacavation application and soil mixing	Berkshire, UK
Petro. H - (TPH-O)	Med (1-20 mg/L)	Silt,	Direct push appliation, barrier formation	Dorset, UK

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MORE INFORMATION

For more information, including application guidance, case studies and usage scenarios, please get in touch or visit the PetroFix page on our website.

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