

Remediation at Active Petrol Fueling Station, North Italy

In-Situ Enhanced Desorption of Petroleum Hydrocarbons



Summary

A leak from underground storage tanks (USTs) at an operational petrol fueling station resulted in a significant hydrocarbon contamination. The leaking USTs were excavated, however a significant mass of contaminant remained sorbed to the saturated soil, providing an ongoing source of groundwater contamination. After extensive operation, the existing pump and treat system ceased recover sufficient volumes of TPH. Therefore, an alternative solution was required to improve the recovery on site and address the migrating plume.

Design & Application

RegenesiS' PetroCleanze was injected across 16 fixed wells, in the saturated zone only. Following application, PetroCleanze was left for a period of seven to ten days to actively desorb the TPH into the groundwater, after which it was recovered using a vacuum extraction truck. Two identical injection and extraction campaigns have been carried out to fully remove the secondary source. This was followed by a full scale injection of ORC Advanced as a full-scale polishing step, to enhance the aerobic bioremediation of the plume.

What's Special?

Standalone physical extraction systems are unable to remove contamination bound to soil. Desorption of TPH was observed and the product was successfully recovered during both vacuum extraction events - dramatically improving the recovery rate previously observed on site, speeding up the closure of the site.

Remediation Details

Site Type:

Active Petrol Fueling Station

Remediation Driver:

Source Treatment

Remediation Approach:

In Situ Enhanced Desorption and Aerobic Bioremediation

Remediation Technologies:

PetroCleanze® and ORC Advanced®

Geology

	Bedrock
	Gravel
X	(Silty) Sand
	Silt
	Clay

Medium

	Groundwater
X	Saturated Soil
	Vadose Zone

COC

X	Petro HCs
	Petro LNAPL
	Chlorinated VOCs
	Metals

COC Concentration Levels:

3,000 µg/L

Treatment Depth:

4.5 m - 7.5 m BGL

Treatment Area:

300 m²

Injection points: 16