



Ex-Situ Stabilisation Using Asphaltic Emulsion

Terra Vac (UK) Ltd and McCann Homes

Terra Vac (UK) Ltd was awarded the remediation contract by independent homebuilder McCann Homes to clean up a proposed residential development in Sandy, Bedfordshire.

Major regional housebuilder, McCann Homes acquired the urban 0.4ha site in 2004 and inherited a hydrocarbon plume thought to have been caused by leaks from former diesel and fuel oil tanks at what was a timber yard with other small businesses adjacent.

The proposed redevelopment consisted of 24 residential units with associated roadways, parking and hardstanding.

Maximum adsorbed phase TPH concentrations were recorded at in excess of 3% (33000mg/kg) down to groundwater at 5m below ground level. The site is located above a major aquifer with several groundwater abstraction licences located within 1000m.

A 2 metre thick smear zone was evident around groundwater level, extending up to 25 metres from the source area. For reasons of sustainability and redevelopment timeframe, dig and dump and in-Situ treatments were ruled out.

Terra Vac proposed a soil stabilisation technique using an asphaltic emulsion and a cementitious binder to i) render the contaminants non-leaching and ii) improve the mechanical characteristics of the impacted material for reuse on site. Terra Vac (UK) Ltd was the first company in the UK to apply this technology with asphaltic emulsion.

Trials helped confirm optimum treatment mixes which were submitted for regulatory approval. Regulators favoured stabilisation due to the exceptionally low leachability results of treated material.

Clean overburden was used to form a lined bund for impacted soil. The walls and floor of the excavation were tested using portable equipment to ensure all impacted soils had been removed.

A total of approximately 2500m² of impacted soils were treated on site using conventional construction equipment over four weeks. Treatment rates of up to 100 tonnes/hour are achievable with readily available equipment. This particular process is applicable for a broad range of contaminants, including metals.



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Contaminated Land and Groundwater Remediation