

Installation of Permeable Reactive Barrier for PFAS Groundwater Treatment

- Installation of PFAS groundwater treatment by permeable reactive barrier
- Continuous amendment mixing and injection using a bespoke trailer system
- Safe delivery alongside live refurbishment and construction works



Client:
Environmental Consultancy

Nature of site:
Historical firefighting grounds undergoing refurbishment works

The challenge

Historical fire training activities had resulted in PFAS contamination within groundwater beneath a former training facility. A permeable reactive barrier (PRB) was proposed to intercept and treat contaminated groundwater while supporting the site's ongoing redevelopment. The works were undertaken within an active construction environment, requiring careful planning, coordination and strict adherence to health and safety procedures.

Our approach

RemTech installed the PRB by means of direct-push drilling methodology using its rig and chemical mixing and injection system. Boreholes were installed into the target groundwater zone before liquid amendment was injected to form the barrier.

The chemical mixing and injection plant Remtech built to install PRBs and carry out in-situ treatment work is a clean, closed system process allowing safe, controlled mixing and simultaneous injection of a variety of reagents. On this particular project, the PRB had to be completed within 21 days to accommodate the construction programme, which was achieved without issue. Monitoring boreholes were then installed to verify the vertical and lateral extents of the PRB had been achieved.

Outcome:

The PRB was successfully installed alongside the wider redevelopment works while maintaining high standards of safety, quality and environmental protection. The project demonstrated how remediation works can be effectively integrated within a live construction environment through careful planning, well established systems of work, good communication and collaboration.

Value Added:

RemTech engineers are from a consulting background and so they were quickly able to review the conceptual site model and understand the technical objectives for remediation. When your drilling and chemical injection team share your project goals and can apply years of practical experience in installing PRBs into various geological formations, while also working safely on an active construction site, you can be confident that your project is in safe hands.