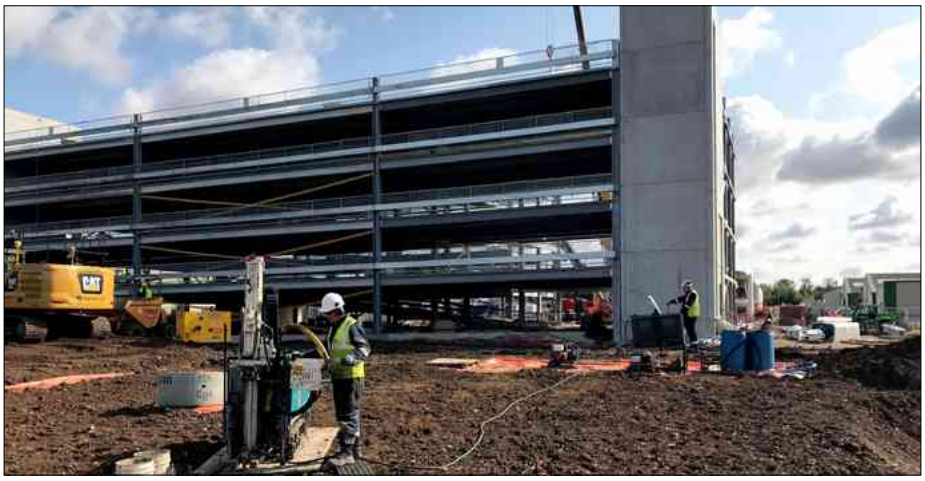
Combined approach to remediate chlorinated solvents in Cambridge, UK

ISCR and ERD used to allow redevelopment to be completed



Summary

This site is currently undergoing redevelopment from a former industrial estate and trade park, into a business park. The underlying groundwater is impacted with chlorinated solvents from an adjacent industrial site.

REGENESIS provided an *in situ* approach that could provide full reductive dechlorination of the contamination from a single injection, allowing redevelopment to occur during the remediation period.

Application

It was decided that a combination of In Situ Chemical Reduction (ISCR) using **Chemical Reducing Solution (CRS)** and Enhanced Reductive Dechlorination (ERD) using **3-D Microemulsion (3DME)** as well as bioaugmentation with **Bio-Dechlor Inoculum Plus (BDI+)** would be applied at this site. This combined approach was designed to provide rapid contaminant degradation, minimised daughter product creation and long term treatment from the single injection. The treatment used seven direct push injection points to accurately target the contamination in a heterogeneous gravels, sands and clay.

What's Special

- The ISCR, bioaugmentation and biostimulation approach was used to optimise the remedial approach by combining:
  - Wide radii of influence to minimise the number of injection points required
  - Rapid onset of ERD
  - Minimisation of daughter product creation
  - Long-term treatment from a single application
- The application took only one day, with remediation occurring in situ, allowing the site development to continue unimpeded.

Remediation Details

Site Type: Former industrial

Project Driver: Redevelopment

Remediation Approach:
Combined *in situ* approach using direct push injection

Technologies:
3-D Microemulsion®, CRS® and BDI Plus®

Geology

	Bedrock
X	Gravel
X	Sand
	Silt
X	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petroleum Hydrocarbons
X	Chlorinated VOCs
	Free Phase
	PFAS

COC Concentration Levels:
TCE 5 µg/L, DCE 1,200 µg/L and VC 900 µg/L

Treatment Depth:
Depth = 2 to 5m BGL
Thickness = 3 m

Injection Type: 4 m grid spacing
Area Treated: 100 m^2

Remediation Cost: 20k