

Active Electronics Manufacturing Facility, Sweden

DNAPL and Chlorinated solvent contamination treatment



Summary

Significant TCE soil and groundwater contamination was discovered during the refurbishment of an electronics manufacturing facility. This prompted site investigations to delineate a 450m² source area and identified DNAPL contamination along the utility conduits and associated factory infrastructure. Treatment of these areas was required, without damaging or replacing the factory infrastructure and so an in-situ remedial approach was taken.

Treatment

A total of 67,000 L of 3-D Microemulsion was applied to the 450m² source area and along the 290m of utility corridor through 112 No. Direct-Push injection points. The self-distribution feature of 3-D Microemulsion minimised the number of injections required and ensured good coverage within the complicated subsurface environment.

Why of Special Interest?

Following injection, 3-D Microemulsion created anaerobic conditions in order to stimulate and maintain the growth of microbes called reductive dechlorinators. This enhanced reductive dechlorination (ERD) of the TCE through to full mineralisation of the contamination, without any build-up of hazardous breakdown products or gases. The subsurface infrastructure was not affected and the refurbishment of the factory continued without interruption.

Remediation Details

Site Type:

Active manufacturing facility

Remediation Driver:

Site refurbishment

Remediation Approach:

Anaerobic Bioremediation / Enhanced Reductive Dechlorination (ERD)

Technologies:

3-D Microemulsion®

Geology

	Bedrock
	Gravel
	Sand
X	Silt
	Clay

Medium

X	Groundwater
	Saturated Soil
	Vadose Zone

COC

	Petro HCs
	Petro LNAPL
X	Chlorinated VOCs
	Metals

COC Concentration Levels:

Very high TCE concentrations including DNAPL

Treatment Depth:

3m to 6m BGL

Treatment Volume:

1350m³