

# Long-term combination remediation tackles soil under a housing area

Belgium



A large quantity of solvents had polluted the soil at the research site of a producer of paints and varnishes. The ground water had spread the contamination to various zones. The source of the contamination is underneath the former site of the factory. The groundwater underneath a housing area and a shopping centre with car park was polluted. Redevelopment of the area was not possible due to the soil contamination and the authorities had ordered the company to clean up the contamination.

In-Situ Technieken carried out in situ remediation using a combination of chemical oxidation and stimulation of biological decomposition. Large quantities of reagents were injected into the soil over a long period. Safety and restricting the extent of the nuisance caused played an important role because the remediation took place in a housing area. This also demanded good coordination and communication with the inhabitants of the area.

## Own design

In-Situ Technieken carried out pilot remediation before the actual remediation operation. In-Situ Technieken then prepared a detailed design for a mixing

and dosing installation, constructed this installation itself and then carried out the in situ remediation. As ISCO reagent, persulphate was injected in the source zone of the contamination and injection with molasses stimulated biological decomposition in the plume.

The approach included handling concentrated chemicals outside of the inhabited area, pumping the diluted solutions through a network of underground pipes and injection via hundreds of filters in the inhabited area. In order to tackle the contamination sufficiently a number of the injection filters were positioned at an angle underneath the houses. The remediation was carried out in steps. A rest period followed the period of injecting in order to give the oxidation process and the biological decomposition process time to take place.

## Result

A safe and successful remediation whereby the nuisance was kept to a minimum. After the remediation had been completed the inhabitants now live on clean soil and there are new possibilities for redevelopment of this site.

In-Situ Technieken has state-of-the-art knowledge of innovative remediation techniques at its disposal for treating contaminated soils and groundwater. Many of these techniques have been developed within the company itself and have been patented. We use an own laboratory and a large library and work closely with the scientific world in order to continually improve our innovative techniques. We can almost always offer you a suitable solution for any contamination. In-Situ Technieken - a trade name of ARCADIS - is fully certified for carrying out soil remediation projects and is active worldwide.

## In-Situ Technieken

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