

Theme 1. Dealing with contamination of soil, groundwater and sediment
1c. remediation technologies and approaches

**WHAT CAN YOU DO FOR ONE AND A HALF MILLION
REMEDiation OF A FORMER GALVANIZING COMPANY**

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ABSTRACT:

Overview

An old decaying industrial site, a bankrupt galvanizing company, old town, dilapidated buildings with asbestos, extremely high concentrations chlorinated ethenes in soil and groundwater, a cocktail of other substances, heterogeneous soil with lots of clay, intersecting liabilities, no dynamics and no money. That is in a nutshell the situation as it was found fifteen years ago. After many discussions, ideas, initiatives, studies and many years of continued last year launched the reorganization and with amazing results.

Preparation phase

Twenty reputable contractors, often accompanied by consulting engineers saw a big challenge in this job. They could sign up through a rigorous pre-qualification. This resulted in the top five forwards. These five contractors were allowed to submit a plan to address how to tackle the problem. One of the main requirements was the budget of 1.5 million Euros.

What can you do for 1.5 million Euro

Under this title NTP Enviro in combination with Bioclear have qualified as the team to come to a final draft for the contaminated site CPC Coevorden. Directly above the core of the contamination with the pure product a number of supermarkets were planned. Development and remediation had to go hand in hand, with different clients and stakeholders within one area.

Based on the remediation targets the conceptual model was updated through additional research. The pure product was present in a much larger area which led to a greater demand for a robust approach. Through lab experiments and feasibility testing, followed by a pilot in an extremely short period of four months, a final clean-up design was drafted based on chemical oxidation and stimulated anaerobic biodegradation. In the presentation we will take you in the process in which despite great pressure of time thoughtful and creative choices were made regarding technique, performance but also the formation of contracts in which one issue was maintained, namely the budget of 1.5 million Euro.

Technology in the service of development

The construction of the underground remediation system was carried out simultaneously with the construction of the supermarket complex. Chemical oxidation using sodium permanganate and stimulated anaerobic biology through the TCE concept integrated into one flexible remediation system

including a monitoring network designed such that both new construction as well as the in situ remediation could continue. Large quantities of cables and pipes are herein arranged in the soil in a very short time. The available time was under high tension because of the agreements with the developer and the builder of the mall. In the field, it was a maze of contractors and projects simultaneously.

The pressure of time took a lot from all the actors, especially at times of changes, such as the discovery of new spots with pure product. In the presentation, we want to show how the construction phase has taken place and that it is possible also to perform the most robust techniques without compromising developments or infrastructure.