

Remediation

of a polluted site - anti-acid slurry cut-off wall

THANN OCHSENFELD

ALSACE - FRANCE



Protection of hydraulic resources in the plain of Alsace by confinement of an industrial spoil heap



Overall picture of the jobsite

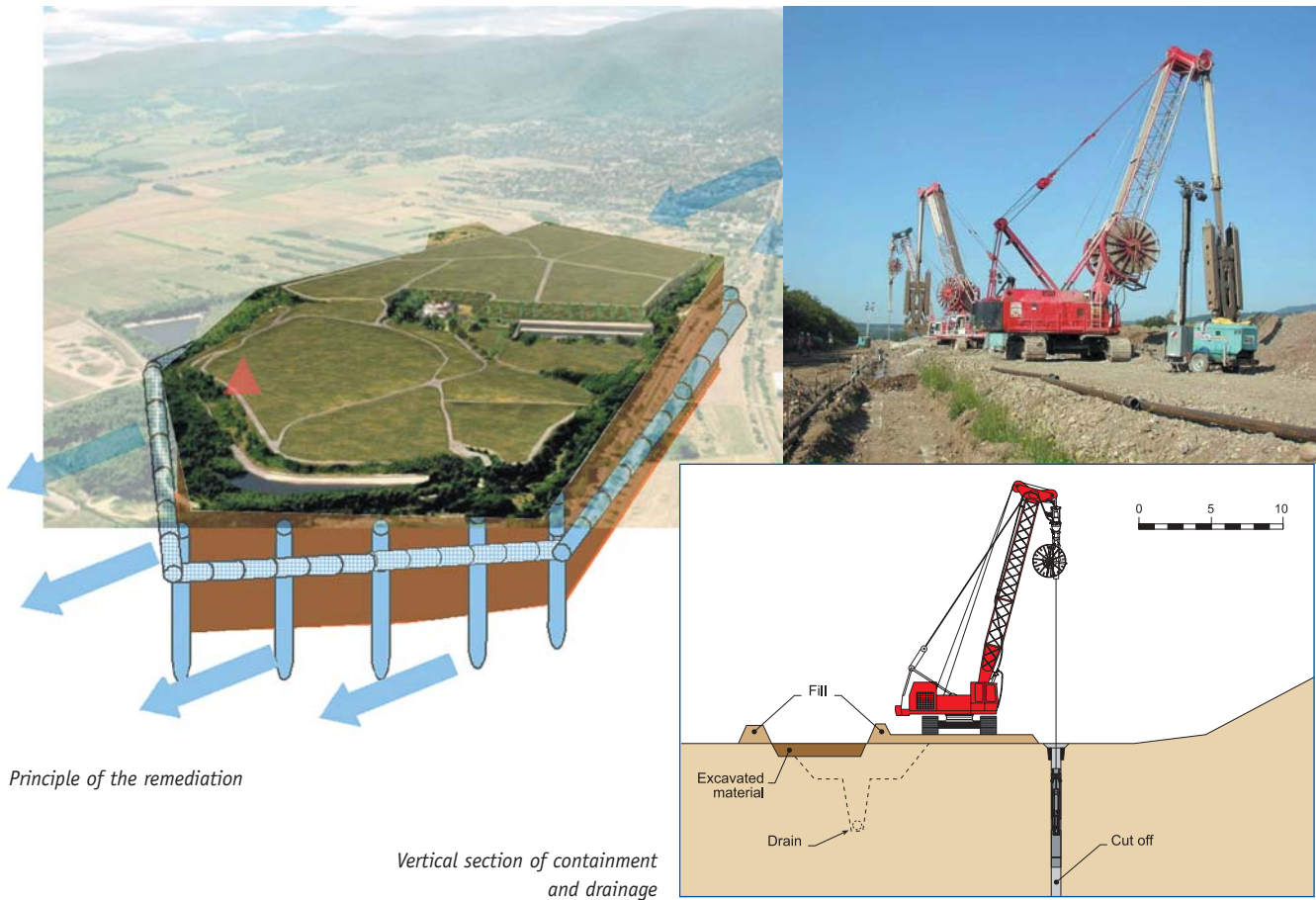
The Ochsenfeld site is located in the southern part of the Plain of Alsace at the base of the Vosges. It extends over three rural districts between Thann and Cernay and represents a surface of 83 ha. Presently it belongs to Millenium Chemicals, which is a producer of Titanium dioxide.

In the spoil heap built in 1930 they have been stocking, in addition to the dioxide fabrication waste, various chemical products have been stockpiled and have generated a significant acid pollution of the ground water in the plain of Alsace.

OWNER:	MILLENIUM CHEMICALS
DESIGN-CONSTRUCTOR:	JOINT VENTURE SITA REMEDIATION - SOLETANCHE BACHY
DURATION OF WORKS:	5 MONTHS

WORKS PERFORMED:

Anti acid slurry cut off wall: 77,000 m², 16 to 30 m deep



Principle of the remediation

Vertical section of containment and drainage

In order to upgrade this site to the required environmental legislation level, the Owner has requested a bid for the design and construction for which Sita / Soletanche Bachy joint venture was awarded.

The chosen solution has been subject to long simulation studies and different situations have been considered particularly whether the site should be covered or not.

The solution chosen includes a peripheral wall, a drainage system outside of the confinement wall to prevent the flow of the external ground water, and an pumping system inside the confinement the objective of which is to keep the internal water table always below the exterior one in order

to maintain a gradient generating a positive flow.

The confinement wall

The geology of the site includes recent coarse alluvial deposits composed of sands and pebbles, sometimes cemented, overlying a substratum of hardened conglomerates and reddish argillaceous Oligocene silts.

Owing to the soil strength encountered and programme restraints Soletanche Bachy selected 3 rigs with KS2 clamshells working in 3 shifts. The anti-acid slurry was produced by a mud plant with a capacity of 50 m³/h. This slurry should be able to resist long term chemical attack on the site due to the presence of sulphates (up to 4 g/l) and with a pH near 3 in some places. The addition of fly ash and specific additives to the slurry was able to provide such protection.

Due to the innovation and the means engaged on this project, total completion was achieved in five month.



Slurry plant (50 m³/h)