NJECTIS
In situ soil remediation

Cr (VI) : an harmful metal treated by injections

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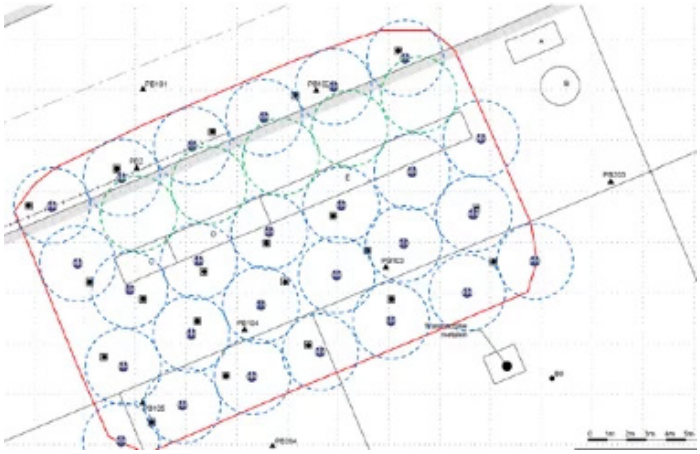


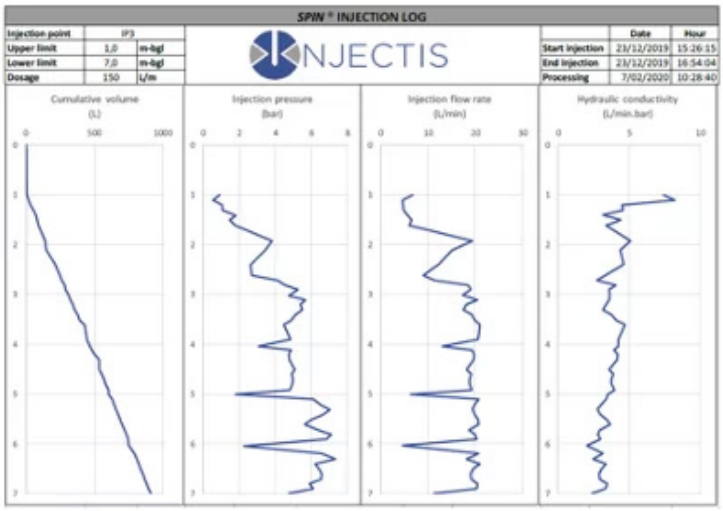
Context

In a metal processing plant, soil and groundwater pollution was detected near the chromium plating baths, up to 10 m deep in a clayey silt.

The most appropriate remediation technique was in situ remediation by injection of reagents because of the low mobility of the pollutants and the great depth reached.

Reaction

The treatment consists of a biological reduction of Cr (VI) to Cr (III) under anaerobic conditions. By reducing chromium VI to chromium III, the mobile and toxic pollutant load (VI) is converted into an immobile and less toxic pollutant load (chromium III is not very soluble and precipitates). This widespread method is commonly used for the treatment of groundwater contamination with Cr (VI). It should be noted that there is no total removal of chromium, but transfer of the pollutant load from groundwater to soil, where the negative effects of the contamination are removed.



Reagents

The reagents were proposed to obtain fast reducing conditions, especially in the most permeable layers of the site, but also to ensure a deep treatment with the combination of the ELS® solution (Lecithin-based substrate of food-grade carbon used to enhance anaerobic bioremediation) having a guaranteed longevity of 3 years and to allow time for the reagents to reach the less permeable parts of the area in order to optimize the treatment results.

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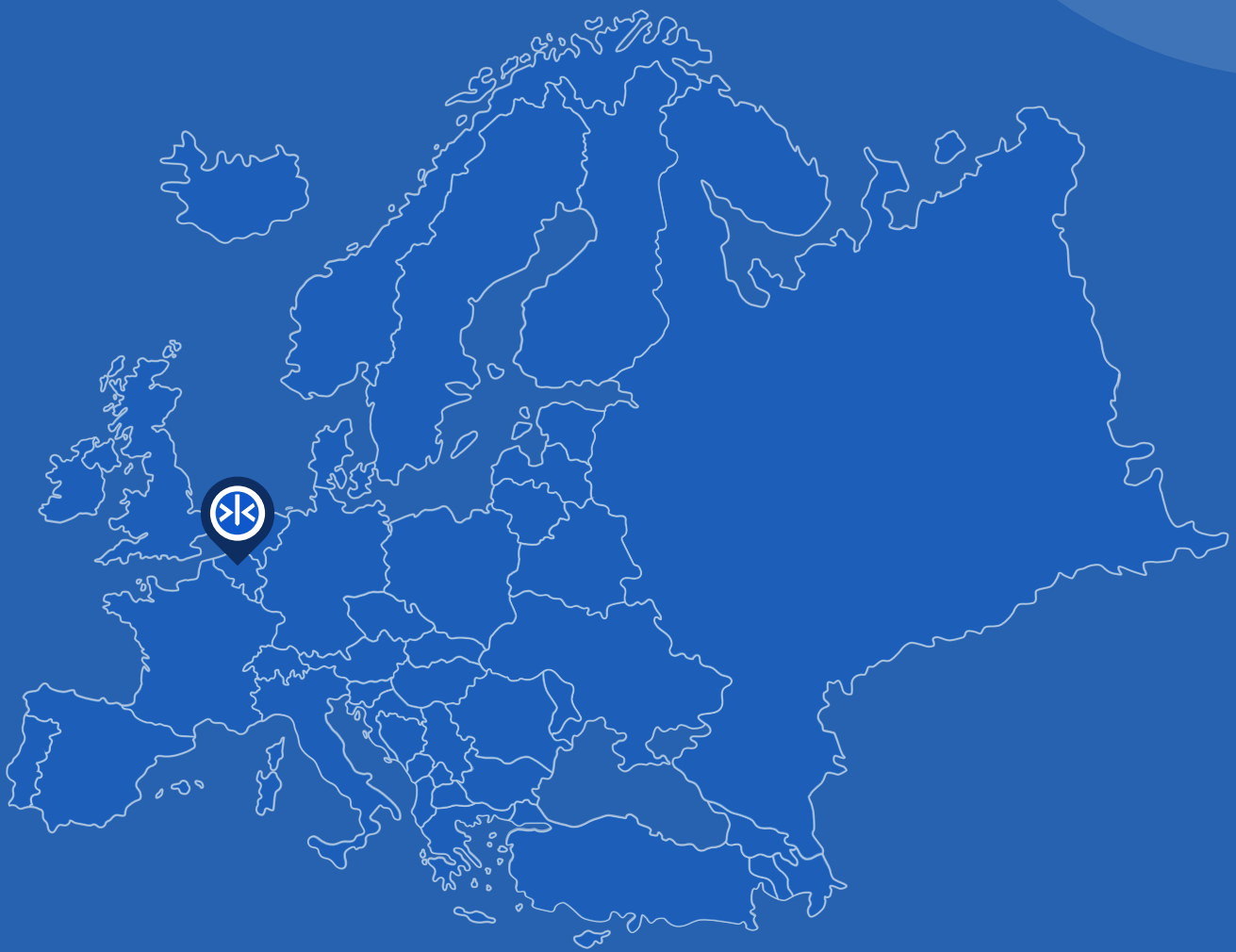
Location:	Flanders, BE
Geology:	Clayey silt
Pollutant(s):	Cr (VI) : soil=150 mg/kgms (Cr Tot) / GW: Cr(VI)= 4300 µg/L
Reaction:	Precipitation by biological reduction
Reagent(s):	Carbon Source (ELS 10%)
Application type:	Grid application
Surface/length:	300 m^2
Number of points:	26
Depth interval:	1,0 – 7,0 m-bgl
Dosage:	120-150 l/m

Injectis, your specialist partner for in situ soil remediation

Innovative techniques for cleaning and restoring contaminated soil in its original location.



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