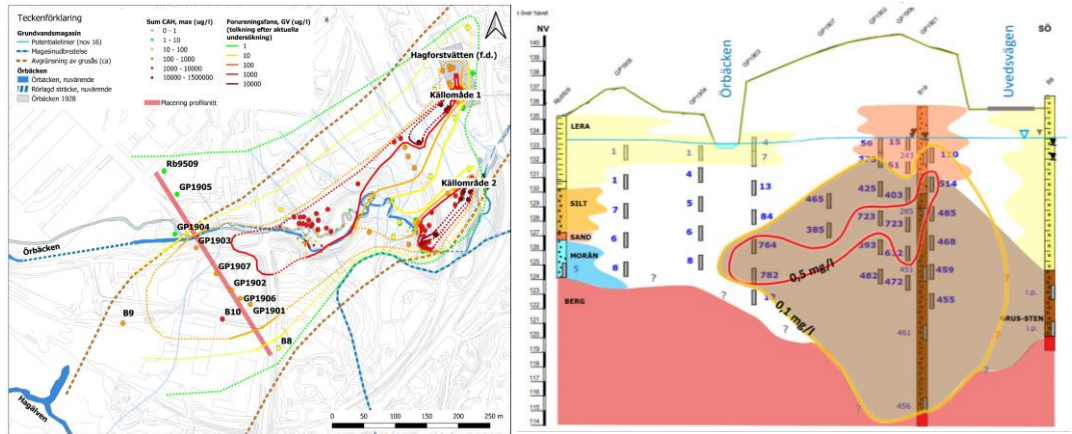




Reference sheet
High resolution
mapping

Time of assignment
 2020
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Concentration of chlorinated solvents (micrograms per litre) in groundwater. The location of the cross-section is shown with a red line on the map.

Effective mapping of a groundwater plume with Geoprobe SP16

Between 1970 and 1993, various operators conducted dry-cleaning activities at the former Hagforstvätten in Hagfors. This activity has caused extensive soil contamination, with polluted groundwater from two source areas forming a 1 km long groundwater plume. Extensive investigations have been carried out near the source areas. However, further away from the source area, the extent of the plume was only roughly mapped.

NIRAS has conducted an effective mapping of the contaminated groundwater plume, approximately 450 meters downstream from the source areas. The mapping was carried out using the Geoprobe SP16 groundwater sampler, where water samples were taken throughout the entire depth of the aquifer (approximately 15-20 meters). A total of 38 level-specific groundwater samples were taken over three working days. With traditional drilling and filter installation, the work would have taken an estimated ten working days.

The mapping documented that the core of the groundwater plume is found between approximately 2 and 10 meters below the groundwater surface. The core of the plume is also relatively narrow (about 1 to 2 meters thick), demonstrating how effective mapping can be used to limit remediation efforts to relatively confined parts of the aquifer to achieve remediation goals for downstream recipients.