

# Borehole Radar Surveys on the EPE Salt cavern field

*by*

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## **ABSTRACT**

Borehole radar surveys using the Swedish RAMAC equipment have been carried out routinely on the Epe salt cavern field since 1991, in order to investigate the geological structure and evaluate the quality of the salt around the caverns.

The measurements are carried out before the beginning of the solution mining. The drilling mud or brine has to be replaced in order to avoid excessive attenuation of the radar signal.

Reflection measurements are realised from single boreholes. The most typical reflectors are the anhydrite layers above or below the salt, and special structures like faults or anhydrite lenses. In the omnidirectional mode, the resolution is excellent, and ranges up to 300 meters have been achieved in good conditions. However, the direction (azimuth) to a given reflector is unknown. With the directionnal antennas, the range is less, but the direction may be determined.

Tomographic measurements are carried out between two boreholes. The resolution is lower than with reflection, but the characteristics of the salt can be determined more accurately.

Several examples are discussed.

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