EXPERIENCE WITH ECHOMETRIC CAVITY SURVEYING DURING SOLUTION MINING PROCESS AND UNDER STORAGE CONDITIONS

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For a long time the solution mining process was used only for the production of brine. However, in the '60s this process was increasing applied to produce underground storage cavities, and, for example here in north Germany, the unsaturated brine formed during this process was drained off into the North Sea.
In the Spring of 1962 PRAKLA-SEISMOS surveyed a salt cavity for the first time. This survey has been carried out for the N.V. KONINKLIJKE NEDERLANDSCHE ZOUTINDUSTRIE (KNZ) - now AKZO ZOUT CHEMIE NEDERLAND B.V. - as a wireline service in the Hengelo field. Since that time, which can be referred to as the birth of the ECHO LOG, a full ECHOMETRIC CAVITY SURVEYING SERVICE has been developed by PRAKLA-SEISMOS which takes into consideration all the factors and requirements of cavity surveying regarding both for brine production as well as for storage. Cavity surveillance with the ECHO LOG resolves around the determination of the shape and volume distribution based on directed ultrasonic Echo Surveys. Within our ECHO LOG service Casing Collar Logs (CCL), Temperature Logs, Gamma as well as Gamma-Gamma and Neutron-Gamma Logs, mechanical Caliper Logs, Photo Logs and Fluid Sampling are also run to tie in the depth or for a depth reference near the cavity roof to make additional roof or floor controls, to determine the oil or gas level and so on. These pure logging techniques are generally sufficiently well known. Consequently in the following only the present status of full echometric cavity surveying is considered, which as the ECHO LOG package can be offered as follows worldwide only by PRAKLA-SEISMOS.