

Real Time Interpretation of Tightness Tests Investigating the Casing Shoe Region of Final Cemented Casings in Gas Storage Cavern Wells

by

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Abstract

UGS GmbH applies for several years a highly sensitive method for investigating the tightness of the cementation of final cemented casings in gas storage cavern wells. This method is based on the so called principle of in-situ compensation and allows also for a real time interpretation of the measurements performed exclusively at the surface. A computer program processes immediately the measurement values. The results obtained reflect the downhole situation and yield a convincing leak rate tendency. This allows for a much clearer and more plausible interpretation of the test. Based on the results a decision can be made whether the test can be terminated earlier or has to be continued for a longer period of time. This feature allows for adapting the test time to the specific test situation in the well and – in most cases - for saving valuable rig time.

In the presentation the principle of the tightness test, the general approach for data processing and the main modules of the computer programme are explained. An example of a tightness test with an interpretation of the measured values is given.