

The Repair of a Gas Storage Cavern Well after Failure of a Pre-operational Mechanical Integrity Test

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Abstract

SSE are developing a nine cavern natural gas storage site at Aldbrough, East Yorkshire in the UK. The project was started in 2004 and is due for completion 2012.

Prior to the solution mining of a cavern, the integrity of the seal on the final cemented casing shoe is tested using the nitrogen mass balance method. The test is repeated after the mining of the cavern is complete, prior to natural gas being introduced into the well.

After the completion of mining, the Aldbrough 2 Cavern failed to meet the SSE criteria for a successful mechanical integrity test (MIT), and a repair was considered necessary.

This paper outlines the programme of work that was carried out to achieve a successful repair of the casing shoe seal.

Key words: Mechanical Integrity Testing, Nitrogen Mass Balance Method, Final Cemented Casing Seal