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Restoration of downhole access to a gas storage salt cavern by chimney enlargement

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Abstract

During gas storage operation, downhole measurements (pressure and temperature logs, sonars, etc.) are necessary every 2-3 years both for performance optimization, cavity/well monitoring and regulatory reasons. Therefore, access to well and cavity is of paramount importance.

Unfortunately, in some cases chimney (cavity neck) is obstructed, thus preventing cavity access. In worst cases, it reduces drastically gas flow rate into/from the cavity.

This paper details the case study of two STORENGY cavities where the access chimney size was reduced. For one of these cavities, flowrate was reduced to a fifth of its normal value. After several attempts using different techniques, full access to bottom of cavities was finally restored.

Key words: rock salt, gas storage, salt caverns, cavity neck, coiled-tubing, sand

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