

**REMEDICATION OF CASING AND MICROANNULUS CEMENT LEAKS UTILIZING
PRESSURE ACTIVATED SEALANT**

Austin Burgess, Barry Ellis, Gary Webb, Vernon Chagnard, Theo Rijper

Seal-Tite International

Abstract

The utilization of pressure activated sealants has proven to be a cost-efficient solution to mitigate casing integrity issues, cemented annulus integrity issues, and sustained casing pressure in storage cavern wells. The sealant approach can eliminate the need for rig interventions and mitigate a majority of the risks inherent in such large-scale operations, all while reducing out of service time for the cavern. This paper presents the latest field proven techniques used to restore mechanical integrity of storage cavern wells using pressure activated sealants. Three sealant repair techniques are presented: floating sealant on top of well fluid at the leak site, atomizing sealant into the nitrogen flow stream at the leak site, and foaming sealant with nitrogen on surface before injecting it into the wellbore. Case studies for each technique are included. The subject wells had previously failed a Mechanical Integrity Test (MIT) with nitrogen. Post sealant treatment, the wells passed the MIT and were returned to service. Lessons learned to improve the efficiency and efficacy of the sealants and procedures are noted.

Key Words: Leak, Mechanical Integrity, Sealants, Wellbore Remediation, Microannulus