

MS Spacer

Surface Casing - Midland Basin



Overview

An operator in West Texas encountered severe wellbore instability and complete circulation losses during a surface casing operation. Despite multiple mitigation attempts, the well continued to experience full losses while drilling and during the initial cementing approach. By implementing a combined MS Spacer and RadiLock fiber solution ahead of an accelerated cement system, the operator achieved unexpected returns at surface and ultimately restored operational confidence for future wells.

Solution

To overcome the total loss environment, the operator deployed a strengthened spacer system designed to improve wellbore stability and create temporary bridging within the loss zone. Twenty barrels of MS Spacer blended with 1.5 pounds per barrel of RadiLock were mixed in the displacement tanks and pumped ahead of the accelerated cement system. No LCM was added to the cement itself, relying solely on the spacer and fiber combination to establish a pathway that would allow the cement to reach surface.

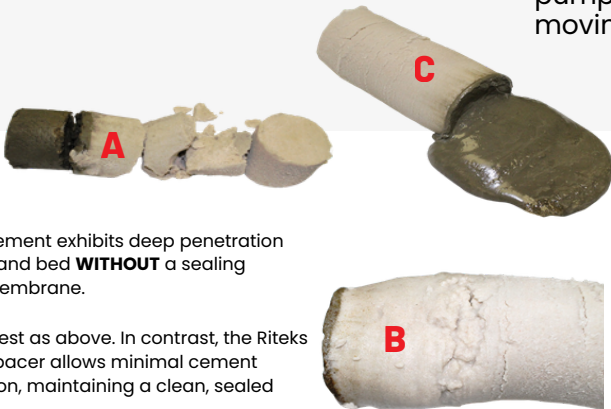
Problem/Challenge

The operator set a 150-foot conductor casing and proceeded to drill out the conductor shoe. Immediately afterward, the well went on complete losses, forcing the surface casing hole to be drilled blind. When the surface casing was eventually set at 340 feet, the team attempted to regain circulation by pumping LCM-laden mud ahead of the cement job. This effort failed to yield any returns, confirming that the loss zone was actively taking all fluids. With no hydrostatic support and no effective circulation path, achieving a successful cement job—especially one capable of providing isolation and long-term integrity—became a significant challenge.

Result

The MS Spacer + RadiLock combination successfully mitigated the complete loss zone and enabled five barrels of cement returns to be observed at surface—an outcome not previously achievable with LCM mud alone. The operator credited the spacer + fiber system as the key factor in the success of the job, particularly given the severity of the losses. Due to the improved performance, the customer requested that this exact combination be pumped on all future surface casing jobs moving forward.

LAB SANDBED TESTS



A: Neat cement exhibits deep penetration into the sand bed **WITHOUT** a sealing spacer membrane.

B: Same test as above. In contrast, the Ritek's sealing spacer allows minimal cement penetration, maintaining a clean, sealed sand bed.

C: Birdseye view of **B**. Cement stayed in place with no leak-off, demonstrating effective sealing performance.



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