

ScaleSorb Ultra 9006 inhibitor successfully pumped two zones in deepwater GoM

A deepwater Gulf of Mexico operator presented Baker Hughes, a GE company (BHGE), with produced water chemistry and estimated closure pressure for a well to be completed. The operator had used a traditional solid scale inhibitor in the past but was concerned about the closure pressure on the solid substrate affecting the conductivity of the proppant pack. BHGE was asked to analyze the water chemistry, evaluate the closure pressure, and provide a solution.

Based on the information provided and the subsequent analysis, BHGE recommended using its **ScaleSorb™ Ultra 9006 solid scale inhibitor**. The carrier substrate of this solid scale inhibitor is equivalent to intermediate ceramic proppant, so the higher closure pressure would not affect it as much. Predicted water production numbers were also analyzed, and a separate concentration of the ScaleSorb Ultra 9006 inhibitor was recommended for each zone in order to handle the anticipated water production. This higher percentage was achievable because of the strength of the ScaleSorb Ultra substrate.

Two zones in one well were fractured and packed, using high-strength ceramic proppant and specific percentages of the ScaleSorb Ultra 9006 inhibitor. Since the lower zone was predicted to produce more water, ScaleSorb Ultra 9006 inhibitor was pumped at a concentration of 10% by weight of total proppant pumped, while the upper zone had a concentration of 3% by weight of total proppant pumped. The ScaleSorb Ultra 9006 inhibitor was placed in the proppant pack in such a way that it would not be reversed out after screenout, ensuring the well's productivity.

Because of the high crush resistance and ease of application, the operator has indicated further use of the ScaleSorb Ultra 9006 solid scale inhibitor in its future well completions.

Challenges

- Provide a solid scale inhibitor that can withstand a closure pressure near 7,000 psi (483 bar) without affecting conductivity
- Provide a solid scale inhibitor that does not activate until water is produced

Results

- Placed proppant pack to avoid reversal after screenout
- Increased time between necessary remediations on subsea well

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