Case History

High Performance Water-Based Fluid

Use of SHALEDRIL® Water-Based Drilling Fluid Successfully Mitigates Intermediate Casing Run, Saving Operator Approximately $250,000

Location: DJ Basin, Weld County, Colorado

OPERATOR’S CHALLENGE – In the DJ Basin of Weld County, Colorado, where sloughing shales in the mechanically unstable Sharon Springs often forced wells to be cased off through the curve, this operator wanted to maintain an inhibitive fluid though the problematic Sharon Springs formation to enable drilling an extended reach well to TD (total depth) without having to run 7-inch intermediate casing.

HALLIBURTON’S SOLUTION – To provide the necessary inhibition to mitigate sloughing and extend open wellbore time, Baroid recommended SHALEDRIL®, its inhibitive water-based system specifically formulated to help combat swelling and sloughing of shale while drilling.

In addition to providing excellent inhibition and hole cleaning ability, SHALEDRIL fluids are customizable, with specific fluid formulations designed to work in specific shale environments. In this case, Baroid personnel customized the system with addition of GEM™ GP shale stabilizer to further improve lubricity and stability through the troublesome Sharon Springs formation.

The customized fluid system was used to successfully drill the ERD (extended-reach drilling) well, including a 4864-ft lateral section, to TD at 11,767 ft, maintaining wellbore integrity even when top drive issues caused drilling operations to be suspended nearly two days while drilling the lateral. During this period, with the time-sensitive Sharon Springs formation left exposed in the wellbore, the SHALEDRIL system provided sufficient inhibition and stability to maintain wellbore integrity, where use of a less-inhibitive mud likely would have resulted in sloughing and caving, requiring the well to be cased off.

As a result, the operator successfully drilled the ERD profile to TD without the need to run intermediate casing, after which the production line was successfully run without incident or downtime.

ECONOMIC VALUE CREATED – Baroid’s customized SHALEDRIL fluid system with enhanced stabilization provided the necessary inhibition and lubricity to efficiently drill troublesome Sharon Springs while avoiding the permitting and disposal issues of using oil-based mud in this environment to achieve the same objective. As a result, the operator was able to successfully drill to TD without the time and expense of running 7-inch intermediate casing, saving approximately two days on the well for estimated total savings of $250,000.

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