



CleanDrill™ Monovalent Brine-Based Reservoir Drill-In Fluid Successfully Drills Open-Hole Interval for 5.5 Hours at a Rate of 30 ft/min

CleanDrill™ Reservoir Drill-In Fluid is a Specialized, Minimally Damaging Monovalent Brine-Based System Allowing for Easy Cleanup of Filter Cake

CHALLENGE	SOLUTIONS	RESULT
<ul style="list-style-type: none"> • Drill & complete open-hole sidetrack for gas storage injector well • Minimize fluid loss during completion screen assembly installation • Easily remove filter cake 	<ul style="list-style-type: none"> • CleanDrill reservoir drill-in fluid • Specifically formulated for formation compatibility • Appropriately sized particle distribution for fluid loss control 	<ul style="list-style-type: none"> • Successfully drilled open-hole interval • Controlled fluid loss to formation while drilling • Able to run completion screen assembly to TD without incident

Texas Land

OVERVIEW

Reservoir drill-in fluids (RDFs) are minimally damaging fluids designed to meet drilling performance requirements while drilling and reservoir integrity targets during completion operations. A greater emphasis on open-hole completions in the drilling and completion space has resulted in the development of optimized and minimally damaging RDFs. Monovalent brine-based RDFs such as CleanDrill are often used in lower pressure reservoirs.

CHALLENGE

An operator in the Texas land market required a solution to drill and complete a sidetrack well to be used for gas storage. This included sidetracking the upper section of the well into a new location of the formation, running and cementing a liner, installing a screen and gravel pack completion, and installing the injection packer and tubing. The open-hole interval for which the CleanDrill drill-in fluid was planned ran from 7,233'-7,330' MD (6,861'-6,947' TVD). Newpark Fluids Systems utilized lab testing specific to the design and development of fit-for-purpose reservoir drill-in fluid. Provided with formation reservoir information and samples of associated formation shale of concern a properly blended RDF was constructed. This included the use of Newpark's ClearTrack – Bridging particle size distribution analysis software.

SOLUTION

The resulting CleanDrill formulation was blended offsite to specifications and delivered to location to be stored in frac tanks prior to its use. The CleanDrill was not used to drill the open-hole section of the well for two months. The RDF was "rolled" in each tank for several hours prior to displacing the OBM out of the well. The CleanDrill easily met the expected specifications during the drilling of the interval.

RESULTS

The total drilling time for the interval was 5.5 hours with the average rate of penetration at 30 ft/min. No fluid loss to formation was experienced while drilling. The well was circulated clean for several hours per the operator procedure again with no losses. The well was converted over to brine with gravel pack screens positioned in the well with the filter cake remaining intact.