

EnerLITE[†] Delivers 12 ¼" Intermediate in 12 days; EnerLITE RECOVER[†] Eliminates Base Oil Dilution



CHALLENGES

Eliminate intermediate casing interval by merging salt sections with weaker Cherry/Brushy Canyon formations

Minimize cost associated with large solids volumes in 12 ¼" hole



SOLUTION

EnerLITE direct emulsion system to minimize salt washout and control density below fracture gradient

EnerLITE RECOVER in solids recovery mode to maximize solids removal efficiency



RESULTS

- More than 9,000 feet of 12 ¼" hole drilled without oil additions to control mud weight
- No fluid property issues drilling with the EnerLITE RECOVER system
- Single stage cement job with returns to surface

OVERVIEW

An operator in West Texas introduced the EnerLITE direct emulsion system to eliminate a second intermediate casing string. The precise density control EnerLITE provides prevents losses lower in the interval, allowing the intermediate section to be drilled in a single casing run.

Accumulating drilled solids require additional base oil to maintain the low density target to prevent losses. Traditionally, oil content can increase from 20-30% v/v at drill-out to over 50% v/v at interval total depth - even with aggressive solids control strategies. EnerLITE RECOVER maximizes solids removal to minimize necessary oil additions. Fine solids are agglomerated for enhanced removal at the centrifuges to lower dilution for a sustained mud weight.

Through careful treatment of the circulating system, drilled solids were controlled so that no oil was required to maintain the mud weight below the target of 9.7 lbm/gal.

The 9,000'+ 12 ¼" section was drilled in 12 days, leaving the salt section exposed while drilling the lower Cherry and Brushy Canyon formations. Drilling and running casing presented no major issues. A single stage cement job was performed with cement returns observed at surface.

DETAILS

Prior to the job, an AES Drilling Fluids solids control specialist visited the rig to evaluate the equipment available and address any potential issues. The treatment and feed pumps were rigged up to the existing rig centrifuges in advance of the job.

The EnerLITE system was received from a previous well. Additional EnerLITE was prepared for sufficient volume to drill the larger hole size. The 13 ⅝" surface casing shoe was drilled out with EnerLITE and drilling continued through the salt sections. A planned bit trip took place prior to drilling through the Cherry Canyon. Once back on bottom the section was drilled to total depth.

Throughout the interval, system properties were maintained via caustic additions for pH, NORMUL[†] additions for emulsion stability, and soda ash to treat calcium. New EnerLITE was built as needed to maintain surface volumes.

9 ⅝" casing was run to bottom without issue. Cementing demonstrated full spacer returns and 10 barrels of cement at surface, eliminating the need for a second stage cement job.



Solids from the centrifuge using EnerLITE RECOVER



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