EnerREACH† Delivers Over 100 Wells for Major Permian Basin Operator... and Counting

CHALLENGES

Narrow fracture gradients

Elevated equivalent circulating density

Extended laterals with horizontal sections exceeding 10,000'

Water flows

SOLUTION

EnerREACH polymeric invert emulsion optimized for well complexity to reduce pump pressures

Comprehensive drilling fluids program to leverage EnerREACH benefits to well-specific challenges

RESULTS

- EnerREACH delivers consistent results, minimizing lost circulation risk for complex wells and greater tolerance in less challenging wells
- After 100 wells, the operators continues to use EnerREACH as its fluid of choice
- Noted improvement in tolerance to water flows

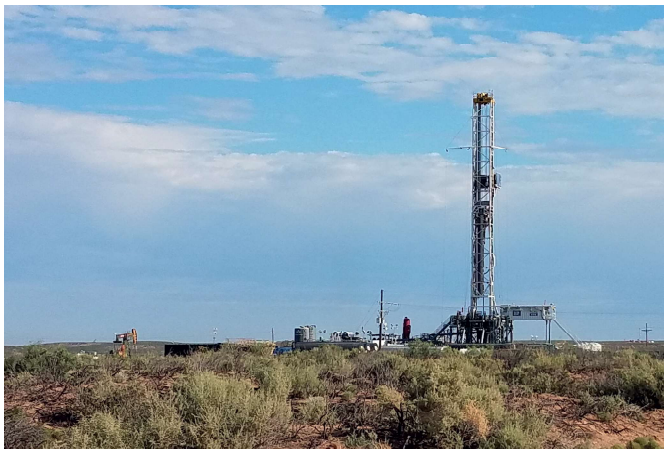
OVERVIEW

An operator in the Permian Basin drills numerous challenging wells each year, using drilling fluid densities ranging from 8.0 lbm/gal to over 14 lbm/gal. These wells include formations with narrow fracture gradients in horizontal sections exceeding 10,000 feet.

As a low clay system, EnerREACH provides excellent hole cleaning with a reduced plastic viscosity to limit equivalent circulating density. Low shear rate viscosity is controlled with ENERVIS RM†, a polymeric viscosifier, to enhance suspension properties without the addition of excess organophilic clay.

Wells varied in complexity and challenges; however, the extended operational window at lower pressures was considered an extra margin in less complex wells and offered consistency using the same system for all applications.

Throughout the drilling process, the EnerREACH system was particularly tolerant to water flows, allowing system treatment without emulsion breakdown seen in many conventional systems.



The operator successfully uses EnerREACH to drill a variety of wells throughout the Permian Basin

DETAILS

The surface and intermediate sections are drilled with water-based drilling fluids. For the horizontal sections, the well is displaced to EnerREACH to drill hole sizes between 6 ¾" to 8 ½". ENERMOD ER† is used to raise gel strengths and ENERVIS RM to enhance low end rheology with a 9-10° 6 rev/min reading or a 6-7° 6 rev/min reading for smaller hole sizes.

The EnerREACH system is maintained with additions of ENERMUL† emulsifier, ENERWET† wetting agent, DURATEC ER† filtration control agent, and ENERSPERSE† dispersant as needed. Minimal additions of organophilic clay minimize the plastic viscosity, relying upon the ENERMOD ER for primary low-end rheology.

AES Drilling Fluids

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