UNCONVENTIONALS

Baroid – Lubricant for drilling fluid

Operator Saves USD 92,000 while Drilling 2,500-m Shale Lateral with BARO-LUBE GOLD SEAL™ Lubricant

Location: Kakwa Field, Calgary, Canada

Overview

An operator was drilling horizontal gas wells in the Karr/Kakwa area of the Western Canadian Sedimentary Basin. The 2,500-m laterals are drilled through the Montney shale formation using a linear alpha olefin (LAO) synthetic-based fluid. The challenges included overcoming torque and drag and achieving an efficient rate of penetration (ROP).

Attempts were made to reduce excessive torque and drag by using the mechanical lubricants shown below, but the operator needed better performance to meet drilling goals.

The Baroid team recommended adding BARO-LUBE GOLD SEAL™ lubricant, a blend of surfactants and lubricants that can provide optimal metal-to-metal and metal-to-formation lubricity in oil- and synthetic-based systems.

The treatment resulted in a 20 percent reduction of surface torque (from 15,000 ft-lbs to 12,000 ft-lbs) and a significant reduction in drag. The operator was able to apply more weight on bit which resulted in ~ 67 percent increase in ROP.

With addition of BARO-LUBE GOLD SEAL lubricant, the operator was able to drill the 2,500-m lateral section successfully as planned. Mechanical lubricants alone were not enough to reduce torque and drag to an acceptable level.

On this well, the BARO-LUBE GOLD SEAL lubricant saved one day of rig time, as it was added near the end of the lateral section. This improvement was valued at USD 92,112 – the rig day rate less the cost of the BARO-LUBE GOLD SEAL treatment. The recommendation going forward is to add BARO-LUBE GOLD SEAL lubricant earlier in the section, as soon as torque and drag issues emerge. This can allow the operator to save additional rig time in the horizontal section.

CHALLENGE	SOLUTION	RESULT
Excessive torque and drag cause low penetration rate	BARO-LUBE GOLD SEAL™ Lubricant	Reduced torque by 20 percent and increased penetration rate by 67 percent