



CASE STUDY: Operator reaches total depth, using 3% concentration by volume of DRIL-N-SLIDE™ lubricant

Lubricants

DRIL-N-SLIDE™ lubricant eliminates excessive torque and improves rate of penetration in S-shaped well

Lubricant eliminated top-drive stalls and tripping related to excessive torque, thus saving rig time and costs

Location: South Iraq

Overview

While drilling an S-shaped wellbore, the operator encountered excessive torque that reached the drillpipe limit of approximately 22,000 ft-lbf. The top drive stalled several times at 4,079 m, and a trip was required to change the bottomhole assembly (BHA). Ultimately, the operator was unable to reach total depth on this well.

The next well, also S-shaped, required a sidetrack in the 8.5-in. interval. The torque and drag simulation indicated a maximum torque of 24,700 ft-lbf. However, at a depth of 4,020 m, the actual torque value had already reached 23,000 ft-lbf, despite the addition of a concentration by volume of chemical lubricant to the drilling fluid.

The operator asked for an engineered fluid solution that would keep the torque at a manageable level so that the sidetrack could reach total depth successfully.

 **SAVED**
OPERATOR
APPROXIMATELY
US\$393,750

HALL1127

CHALLENGE	SOLUTION	RESULTS
<ul style="list-style-type: none"> Eliminate excessive torque for an operator in south Iraq 	<ul style="list-style-type: none"> Apply a 3% concentration by volume of DRIL-N-SLIDE™ lubricant 	<ul style="list-style-type: none"> A 10% improvement in ROP compared to the previous well Successful setting and cementing of liner at the planned total depth Elimination of top-drive stalls and tripping related to excessive torque, enabling the operator to save a total of 36 hours of rig time, at an estimated value of US\$393,750

Halliburton solution

The Baroid team recommended adding a 3% concentration by volume of DRIL-N-SLIDE™ lubricant. Initially, the operator agreed to add 2%, which resulted in an immediate torque reduction from 23,000 to 18,000 ft-lbf. Drilling continued to total depth at 4,080 m with a maximum torque of 21,000 ft-lbf, 6% less than the predicted torque. In addition, the operator observed a 10% improvement in the ROP compared to the previous well.

Prior to running the production liner, the fluid was treated with an additional 1% DRIL-N-SLIDE lubricant. The friction factor decreased to 0.2 as compared to 0.35 on previous wells, and the liner was set and cemented successfully at the planned total depth.

Economic value created

Eliminating top-drive stalls and tripping related to excessive torque allowed the operator to save a total of 36 hours of rig time, at an estimated value of US\$393,750. More importantly, the production liner was set successfully at the planned total depth. The operator plans to implement DRIL-N-SLIDE lubricant on future wells in the area.