

BaraBlend®-665 and BaraLock®-666 Cure Severe Losses and Save Qatar Operator USD 325K

CUSTOMIZED LCM SOLUTION HELPS DRILL SIDETRACK THROUGH FAULTED THIEF ZONE TO PLANNED TOTAL DEPTH

QATAR

CHALLENGE

- » Treat severe unanticipated lost circulation due to faults/fractures
- » Reach total depth (TD) in sidetrack, despite torque issues encountered while drilling original wellbore

SOLUTION

- Baroid recommended a customized solution:
- » BaraBlend®-665 lost circulation material (LCM)
 - » BaraLock®-666 supplemental LCM
 - » Pill formulated to address fault and fracture size uncertainties

RESULTS

- » Decreased dynamic losses from 120 bbl/hr to 40 bbl/hr
- » Maintained fluid properties and lubricity at a manageable loss rate to section total depth
- » Enabled the operator to successfully case and cement the sidetrack

OVERVIEW

A major operator drilling through a fault-risk zone in the Maaddud formation offshore Qatar experienced severe downhole losses in their 8½-in. reservoir sidetrack. The risk of losses in this zone was previously considered to be low, and offset wells in the area had been drilled without lost circulation incidents.

CHALLENGE

An effective lost circulation material (LCM) treatment was required at short notice to cure severe losses due to a fault and associated natural fractures. The lost circulation treatment applied in the sidetrack had to be specially designed to support reaching planned targets and total depth (TD).

SOLUTION

When severe losses were experienced at 17,958' measured depth (MD), several attempts were made to cure severe lost circulation using conventional LCM treatments. However, these treatments were not effective in reducing the 120 bbl/hr dynamic losses. In response to unexpected losses and lack of information on the fault zone, the Baroid Technical Team recommended that the operator pump an LCM pill comprised of BaraBlend®-665 and BaraLock®-666 with fine-, medium-, and coarse-grade particles.

- » BaraBlend-665 is an engineered, composite solution designed to rapidly seal fractures up to at least 3,000 microns. Its unique composition in a single sack minimizes drilling non-productive time (NPT) and is able to be pumped through typical bottomhole assemblies (BHAs) using an innovative pumping procedure.
- » BaraLock-666 is a reticulated foam LCM available in three sizes (Fine, Medium, and Coarse) that can be used as a supplement to any LCM pill formulation, and is compatible with any fluid type or formation.

The operator pumped a combined LCM pill, according to the Baroid recommendations, across the fault depth and allowed it to soak for two hours. With slowly staging up the pump rate, the operator was able to continue drilling at a 67% reduced loss rate of 40-45 bbls/hr.

Severe lost circulation of 110 bbl/hr was again experienced when drilling ahead at 20,115' MD. A second specialty LCM pill was mixed in the same concentrations as used earlier in the well. This LCM pill was pumped across the deeper loss zone, and a hesitation squeeze was performed.

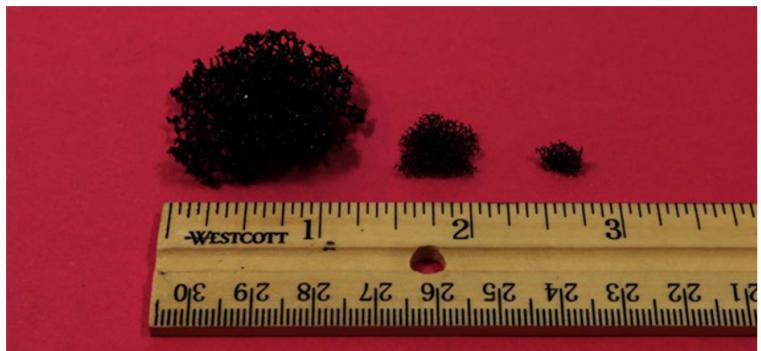
As drilling continued, the dynamic loss rate was reduced to 40 bbls/hr, and the operator successfully reached the planned section TD.

RESULT

Baroid's customized LCM pill formulation, combining BaraBlend-665 and BaraLock-666, significantly reduced downhole losses while drilling the sidetrack through the faulted formation. Based on the successful application of Baroid's engineered, composite, and supplemental LCM solution, the operator saved USD 325K in potential drilling fluid losses to the reservoir. This specialty LCM treatment supported well objectives, and the operator completed the sidetrack to planned TD, including casing and cementing.



BaraBlend-665 LCM



BaraLock-666 LCM Coarse, Medium, Fine (left to right)