

SOLUTION PROFILE

BSS03-006

ACCOLADE® Synthetic-Based Fluid System Handles 850-bbl Saltwater Flow in GOM Shelf Well Production Interval

Operator's Challenge

While drilling the 8-1/2" production interval at 15,197-ft (MD), the operator encountered a persistent saltwater flow that threatened to destabilize the ACCOLADE® synthetic drilling fluid and cause a stuck pipe incident.

Halliburton's Solution

The ACCOLADE system proved to be essential to maintaining the integrity of the hole during difficult operations. The saltwater flow occurred while drilling with a 14.8 ppg ACCOLADE system in approximately 3,000 ft of 8-1/2" open hole. Due to the low fracture gradient/pore pressure margin for this interval, the flow could not be stopped completely even after increasing the fluid weight to 15.2 ppg. Large amounts of salt water were incorporated into the ACCOLADE system.

Under normal conditions, the system is maintained with a 70/30 to 80/20 synthetic/water ratio and an electrical stability (ES) value of 250-800. At the time the flow occurred, this system had 78/22 s/w ratio and an ES reading of 773. Despite synthetic/water ratios as low as 40/60 and ES readings as low as 70, the HPHT fluid loss on the ACCOLADE system never exceeded 7.0 cc/30 min. A nearly imperceptible trace of water was briefly observed in the HPHT filtrate. The fluid displayed no signs of destabilization.

The fluid's stability was maintained by significantly increasing additions of base oil, LE SUPERMUL® emulsifier, ADAPTA™ filtration reducer, and some freshly built ACCOLADE fluid supplied from the onshore facility. After unsuccessfully battling the flow for eight days, the operator pulled the drillstring into the casing, then cemented and sidetracked the well. Had the ACCOLADE system not held together, the hole could have collapsed and the expensive bottom hole assembly would have been lost.

Economic Value Created

By recovering the MWD/LWD tools and avoiding lost-in-hole charges, the operator realized a savings of \$1,000,000 minimum. Due to the resilience of the ACCOLADE system, the operator was able to return the entire drilling fluid system for credit as opposed to paying \$289,000 for the loss and disposal of a contaminated or "flipped" synthetic-base system. After subtracting the \$94,000 payment required to recondition the salvaged ACCOLADE system, the operator realized a \$195,000 savings on potential drilling fluid costs related to the saltwater flow incident.

Solution Technology from the Solution PeopleSM

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Ref: EVC number May 2003

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