ENVIROTHIN™ fluid additive reduced ECD to penetrate potential severe thief zone without losses

Location: Saudi Arabia, Offshore

OPERATOR’S CHALLENGE – In this offshore application, the operator’s objective was to drill, log and then cement a 9-5/8-inch perforated liner in 1305 feet of 12-inch hole penetrating a naturally fractured carbonate formation, where partial to total fluid losses had been observed in most offset wells, as well as a few incidents of stuck pipe and gas flow.

Halliburton was challenged to provide a solution to help mitigate fluid losses through this potentially severe fluid loss zone.

HALLIBURTON’S SOLUTION – Upon reviewing fluid properties used in previous hole sections in the well, Halliburton’s Baroid team determined that the high yield point and gels of the NaCl/polymer mud being used were causing a high ECD on the formation while drilling and tripping, which increased the likelihood and severity of fluid losses.

The Baroid team decided to treat the high density 125 pcf NaCl/polymer fluid with 2 ppb ENVIROTHIN™ fluid additive, a chrome-free, low toxicity thinner that can be used to maintain all dispersed water-based drilling fluids. Being a thinner and fluid loss control agent, ENVIROTHIN additive can deliver low ECD and a stable well bore to help prevent any potential losses.

ECONOMIC VALUE CREATED – In this challenging application, Baroid’s ENVIROTHIN additive was used to successfully reduce ECD through a severe loss zone to enable the 12-inch hole section to be safely drilled, logged and cased to the total depth without any losses. With this solution from Halliburton, the operator saved an estimated five days of offshore rig time to realize economic savings of $550,000 USD.