COREDRIL-N™ System Helps Successfully Drill an Exploratory Well in the Piceance Basin

Location: Piceance Basin - Rio Blanco County, Colorado

OPERATOR’S CHALLENGE – A customer operating in the Piceance Basin of Rio Blanco County, Colorado was attempting to drill an exploratory well located in the Meeker field. The challenge faced by the operator was finding a drilling fluid that would be non-damaging to the reservoir and would be ideal for securing native-state coring samples. Other operators in this area had experienced less than desirable production rates using various fluid systems. In addition to finding an appropriate drilling fluid that would achieve the desired results, the operator wanted to produce the reservoir through underbalanced drilling, with no production enhancement.

HALLIBURTON’S SOLUTION – Designed to reduce the risk of emulsion blockage and provide excellent flow properties over a wide range of fluid densities, Halliburton Baroid recommended the COREDRIL-N™ system, an all oil drill-in and coring fluid system. This solution helped minimize fluid invasion into the producing formation while drilling a gauged hole. The pure base oil introduced no contaminants into the reservoir, which ensured the integrity of the producing formation.

Drilling the reservoir formation using the COREDRIL-N system allowed underbalanced drilling to facilitate oil shows without production enhancement.

The pure base oil did not disturb the reservoir porosity and effectively drilled a 70° production hole with no operational issues.

In order to displace from a low solids, non-dispersed (LSND) system to the COREDRIL-N system, the operator also requested a base oil viscosifier that would be non-damaging to the base oil and formation. Baroid’s global and regional technical teams suggested using BARARESIN®-VIS oil-soluble viscosifier designed for completion operations in sensitive reservoirs. BARARESIN-VIS viscosifier effectively viscosified the displacement spacer and allowed for minimal contamination (less than 5 bbl) between the COREDRIL-N system and the LSND.

ECONOMIC VALUE CREATED – Using the COREDRIL-N system, the operator successfully drilled a gauged hole and was able to see crude oil indicators within the reservoir. While drilling underbalanced, using this pure base fluid was critical in maintaining the integrity of the reservoir, without damaging the porosity of the formation. With an optimal concentration of sized solids designed to plug the pores of the reservoir rock without penetrating too deep, the COREDRIL-N system effectively reduced the risk of creating emulsion blockage in this well.

By eliminating the need for production enhancement, Baroid’s technical and operational teams helped the operator get the well into production in a much shorter time period than anticipated, thus helping the operator reach the objectives for this well.