CHALLENGE

In the Mississippi Lime field, the curve section of a well entailed drilling through a reactive shale where swelling and caving can cause hold stability problems. The lateral hole section consists of a stable limestone with lost circulation as a potential issue. Therefore, in the operator’s previous wells, the 7-inch casing has always been set in the top of the lime through the curve to provide sufficient stability for running a 4-1/2-inch production liner. In this case, the operator requested a solution that would enable the Mississippi Lime wells to be drilled without setting the 7-inch intermediate casing.

CUSTOMIZED FLUID SYSTEM REPLACES INTERMEDIATE CASING STRING

Up to 2013, the operator had never attempted eliminating intermediate casing string in the area. However, through the application of the Halliburton Baroid customized fluid system, the operator was able to achieve a monobore completion with a single 5-1/2-inch production casing string.

To provide the necessary stability for drilling the Cherokee formation in the curve, Baroid engineered a system consisting of the CLAYSEAL® PLUS™ and BAROTROL® PLUS™ shale stabilizers for maximum shale inhibition.

PAC-L™ and FILTER-CHEK™ filtration control additives were added for filtrate control to prevent water wetting of the formation.

This customized fluid system provided the necessary encapsulation, along with superior wellbore stability, which allowed the curve to be left open for an extended period of time without problems. The lateral hole section was successfully drilled to total depth (TD) without setting 7-inch intermediate casing through the curve. The 5-1/2-inch production casing was set successfully without tight wellbore issues.

BYPASSING INTERMEDIATE CASING OPERATION SAVES OPERATOR SIGNIFICANT TIME AND MONEY

Using a fluid system customized for this field helped facilitate the replacement of the traditional intermediate string of 7-inch casing and 4-1/2-inch liner with 5-1/2-inch production casing. Bypassing the intermediate casing operation, Baroid helped the operator save two to three days of rig time and USD 140,000 in casing costs.