Case History

GageDrill™ System Decreases Cost While Reducing Losses by 60% and Eliminating Need for Cement Plugs

Montney, British Columbia, Canada

Challenge
Surface hole losses cause excessive cement plugs, NPT, and high costs

Solution
GageDrill mixed metal oxide (MMO) drilling fluid system

Results
Successful applications on multiple wells

Initial wells within the Graham field in Northeast British Columbia experienced severe lost circulation during the surface interval. To resolve the issue, nine cement plugs were pumped over four wells using traditional gel fluid systems treated with lost circulation material (LCM). However, this method resulted in high costs and non-productive time (NPT).

The GageDrill system provides a very viscous fluid at a steady state that is readily shear-thinning during drilling. The fluid develops by adding GageVis™ viscosifier to hydrated the bentonite slurry, resulting in unconventional characteristics which are then exploited to provide superior fluid performance in specific applications, one of which is control over whole fluid losses. GageVis viscosifier adheres to the gel, forming a unique fluid that is completely gelled when static but thins out to a low-viscosity fluid under shear conditions. Low concentrations of the product were adequate to change basic gel slurry into GageDrill fluid. Adding 0.8 to 1.2 lbm/bbl (2.3 to 3.4 kg/m³) of GageVis viscosifier to 10.5 lbm/bbl (30 kg/m³) of natural bentonite created a unique fluid with a yield point (YP) of 40 lbf/100 ft2 (19 Pa) and almost zero plastic viscosity (PV). GageDrill rheological properties provided the operator with the desired results:

- Reduced losses by 60%
- Removed the need for cement plugs
- Reduced days (operational time due to eliminating time for the cement plug procedure)
- Increased efficiency of cuttings removal

NEWPARK DRILLING FLUIDS