

Deepwater Fluids Challenges for the New Frontier

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ABSTRACT

Deepwater drilling environments now require technologies for fluids with lower ECD and optimal sag performance. Conventional drilling fluids do not meet some of the technical challenges in these areas. The following fluids topics to be addressed during the fluids design phase are paramount for a successful drilling and completion of the well.

LOW ECD FLUIDS – Deeper wells are requiring fluids with superior performing hydraulics and thinner fluids to provide lower circulating pressures. Having a lower ECD fluid helps to lower break over pressures, especially for the cold temperature of the deepwater wells. However, lower ECD fluids also run a risk of having barite sag which then call for alternative weighting agents. Hole cleaning is also another challenge as it is a balancing act between rheology properties, sufficient flow rate, whilst reducing ECD.

LCM- WELLBORE STRENGTHENING - narrow fracture gradients will require methods to stabilize the well such as wellbore strengthening. New product offerings which do not compromise the drilling BHA or the formation is widely required and is an added benefit for the client.

FORMATION TESTING – Understanding the formation to provide the most inhibitive system for reactive clays, and a fit for purpose design is necessary to maintain wellbore stability.

Fluids design is much more involved than the aforementioned topics but are the most discussed, in regards to these longer deeper wells drilled and will be the way forward for the future drilling of wells in this area.