



PORE PRESSURE

DELTA-TEQ low-pressure-impact drilling fluid

Efficiently and reliably reduce downhole losses and hydraulic impact on formations

FRACTURE
GRADIENT

In challenging offshore wells, pore pressure, fracture gradient, and complex geometry can create a narrow operating window. This can cause many problems, such as excessive surge pressures, pressure spikes due to pump initiation pressures, complicated circulation management, and the inability to control drilling parameters, which can result in catastrophic events.

The typical solution to drilling in narrow windows has been utilizing a low equivalent circulating density (ECD) drilling fluid. These fluids can mitigate some risks, but not enough risks to meet drilling objectives.

The **DELTA-TEQ™ low-pressure-impact drilling fluid** is the only solution designed to extend the critical drilling window. DELTA-TEQ optimizes hole cleaning using proprietary technology to control viscosity at different depths. It also avoids sag by keeping solids suspended even when pumps are off. In addition, DELTA-TEQ prevents pressure spikes at startup and surge pressure during casing runs to avoid fractures and mud losses.

As part of its innovative technology, DELTA-TEQ low-pressure-impact drilling fluid uses a mixture of specialized clay and polymers to create a non-progressive gel structure that reduces hydraulic impact. These “rapid-set/easy-break” gels set quickly when circulation stops to enable suspension of cuttings. When circulation resumes—or during casing runs—the gels break easily at lower pressure, protecting formations and reducing mud loss risk.

Furthermore, the DELTA-TEQ low-pressure-impact drilling fluid provides flexibility. Drillers can stay in the drilling window longer by optimizing low-shear-rate viscosity (LSRV) while limiting the impact to high-shear-rate viscosity (HSRV).

Optimizing LSRV improves hole cleaning without generating excessive pressures in the circulating system. This allows for optimal rates of penetration (ROP). Minimizing the HSRV maximizes flow rates in the annulus to carry cuttings and improve ECD. This unique feature—the ability to engage viscosity at low shear rates and

Applications

- Offshore drilling
- Narrow windows
- Highly deviated wells with known risk of barite sag
- High mud weight intervals where thin rheology is required

Benefits

- Provides effective and reliable navigation through narrow pressure windows
- Reduces well construction risks and costs
- Improves hole cleaning, flow rate, and ROP
- Manages hydraulic impact by maintaining the right viscosity in the right areas of the well
- Protects the formation against pressure spikes and surge pressure
- Remains sag-resistant and suspends cuttings during operational pauses

disengage it at high shear rates—is called the "viscosity clutch." It was created by BHGE engineers and is unique in the industry.

Shift to a low-ECD fluid that reliably performs in the clutch. For more information, visit bhge.com/delta-teq.



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