

DELTA-TEQ XT

Efficiently and reliably reduce downhole losses and hydraulic impact under extreme conditions

In challenging offshore wells, pore pressure, fracture gradient, and complex geometry can create a narrow operating window. This can cause 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™ XT low-pressure-impact drilling fluid** is a solution designed to extend the critical drilling window and provide superior solids suspension even when pumps are off—optimizing hole cleaning using proprietary technology to control viscosity at different depths. The DELTA-TEQ XT system extends the operational range of our proven DELTA-TEQ fluid by providing superior cuttings suspension and protecting against sag in hostile, high-temperature environments. In addition, DELTA-TEQ XT fluid prevents pressure spikes at startup and surge pressure during casing runs to avoid inducing fractures and mud losses.

As part of its innovative technology, the DELTA-TEQ XT fluid uses a mixture of

specialized clay and polymers to create a non-progressive gel structure that reduces hydraulic impact that remains effective in temperatures up to 350°F (177°C). 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 XT fluid provides flexibility, allowing drillers to stay in extreme operating windows 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 “viscosity clutch” allows drillers to engage viscosity at low shear rates and disengage viscosity at high shear rates.

Shift to a low-ECD fluid that reliably performs in the clutch—even in the most extreme environments. For more information, visit bakerhughes.com.

Applications

- Offshore drilling
- Narrow operating windows
- Highly deviated wells with known risk of barite sag
- High mud weight intervals where thin rheology is required
- High-temperature environments up to 350°F (177°C)

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