

Case study: Lee County, Texas

LATIDRILL fluid system delivered significant cost savings while drilling in Taylor Sands

While drilling onshore horizontal development wells in the Taylor Sands, the operator encountered significant oil-based mud (OBM) losses and their associated costs. It also incurred costs for cuttings disposal and diesel dilutions.

To combat the losses, the operator chose to replace OBM with the Baker Hughes **LATIDRILL™ high-performance, water-based drilling fluid system**. The LATIDRILL system enables operators to drill unconventional plays with the stability, speed, and performance of an OBM.

The LATIDRILL system was combined with the Baker Hughes **AutoTrak™ Curve rotary steerable system (RSS)** and the **Talon™ high-efficiency polycrystalline diamond compact (PDC) bit**. The technologies worked together seamlessly to deliver an exceptional drilling project that went above and beyond the operator's expectations.

The operator experienced no temperature concerns, no well-control issues, good wellbore stability in the shale sections, and acceptable torque values for drilling the curve and horizontal sections. The rate of penetration was also comparable to OBM.

The operator recognized significant cost savings by eliminating lost OBM and the removal of oil-contaminated cuttings and reducing diesel costs. Using the LATIDRILL system, directional tools performed well, enabling Baker Hughes to drill the tangent and curve with the AutoTrak Curve RSS. The lateral was drilled conventionally with no issues.

Future plans to drill multiple pad wells using all three Baker Hughes technologies in the Taylor Sands will provide opportunities to further reduce mud costs and drilling days.

Challenges

- Ranger 11A-1H well
- Projected measured depth (MD) of 9,454 ft (2,882 m) and true vertical depth (TVD) at 5,678 ft (1,731 m)
- Operator had significant costs for cuttings disposal, diesel dilutions, and lost OBM
- Drill well cost effectively and in comparable time as OBM
- Establish well stability while drilling

Results

- Saved about \$400K USD in well costs
- Saved \$50K USD in expected program fluid costs
- Drilled to expected total depth and ran casing at bottom with no issues
- Saved 3 days of drilling in comparison to expected program days
- Introduced the operator and this field to the LATIDRILL system
- Minimized fluid impacts to the environment
- Reduced NPT in comparison to offset wells drilled with OBM

