High Build Rate RSS Drills Eagle Ford Shale Well to TD in One Run, Saves 4 Days of Drilling Time

PowerDrive Archer RSS beats performance objective of 55 ft/h with average on-bottom ROP of 78.12 ft/h, central Texas

**CHALLENGE**
Drill 8½-in horizontal well in one run using rotary steerable system (RSS) to improve upon motor performance.

**SOLUTION**
Use Schlumberger directional drilling services to run the 6¾-in PowerDrive Archer* high build rate RSS to drill vertical, curve, and lateral sections.

**RESULTS**
- Drilled the 10,754-ft well in one run.
- Saved 4 days of drilling time compared with best-performance well in the field drilled using a motor.
- Achieved average on-bottom ROP of 78.12 ft/h—far exceeding performance objective of 55 ft/h ROP.

**Improve drilling efficiency in Eagle Ford shale**
An operator in the LaSalle County region of the Eagle Ford Shale play in central Texas was looking for options to improve drilling performance in horizontal wells for the field. The operator had previously drilled wells in the area using motors with great success, but wanted to increase efficiency further. The plan was to drill an entire well using a RSS, avoiding at least one trip out and increasing ROP.

**Plan to drill well in one run with high build rate RSS**
The Schlumberger team developed a BHA with the durability and performance specifications to meet the operator’s challenging objectives. The 6¾-in PowerDrive Archer RSS was selected for its ability to drill high-dogleg trajectories while maintaining a high ROP and superior wellbore quality. For maximum durability on the long run, a Spear* SDi513 shale-optimized steel-body PDC drill bit from Smith Bits, a Schlumberger company, was specially designed for the project.

Plans for performance improvement included an ROP of 55 ft/h, with connection time. The objective was to drill the well in one run to beat the time to drill to TD achieved on previous wells drilled from the same pad using motors. At a planned TD of greater than 10,000 ft, the length of the well presented a challenge in itself.

**Exceeded drilling objectives, saved 4 days of drilling time**
Schlumberger went beyond the objectives, drilling the well to TD in 4 fewer days compared with best motor performance on the pad.

The PowerDrive Archer BHA drilled the entire 10,754-ft well in one run, with a total of 137.67 drilling hours and an average on-bottom ROP of 78.12 ft/h. The high ROP achieved far exceeded expectations for the project, and the operator has already drilled another well using this BHA in the Eagle Ford Shale.

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