

At-Bit Innovation Boosts ROP 40% While Drilling Each of 12 Wells in One Run—Vertical Through Curve to Lateral, Colorado

NeoSteer at-bit steerable system with advanced cutting elements achieves ROP of 299 ft/h

Operator uses NeoSteer CL* curve and lateral at-bit steerable system to drill through rock in the DJ Basin 40% faster than conventional equipment, drilling 10 out of 12 wells in a single run. And four of those wells were the fastest on the pad.

The operator's objective

On a specific pad, the operator wanted to drill each well in a single run from the vertical through the curve and to lateral TD—and as quickly, smoothly, and consistently as possible.

What they tried first

A third-party vendor drilled 12 wells for westward laterals using their rotary steerable system. Maximum sustained ROP was about 215 ft/h with average ROP less than 170 ft/h.

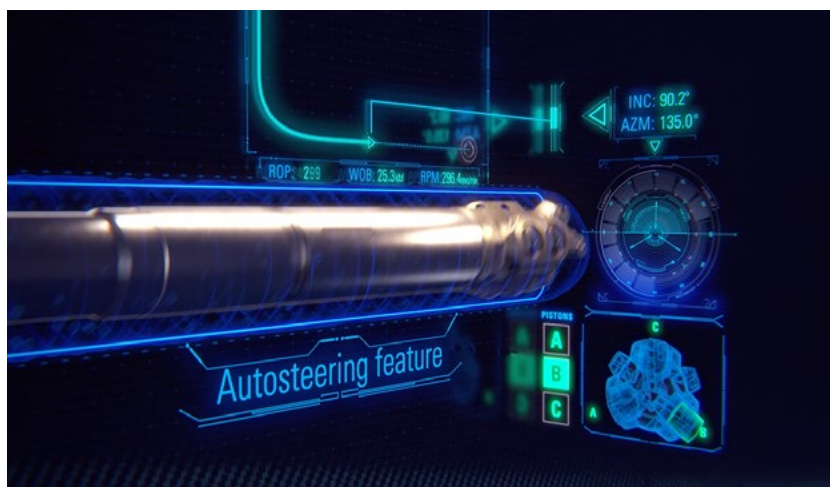
What Schlumberger recommended

The NeoSteer CL ABSS fuses the agility of rotary steerable systems with advanced Smith Bits cutting structures. This particular ABSS would be fitted with Hyper* hyperbolic diamond cutting elements designed for drilling conditions such as those found in the DJ Basin. This combination will enable drilling the vertical, curve, and lateral sections in a single run because the hold inclination and azimuth feature in the ABSS minimizes tortuosity and the total number of downlinks necessary to drill each well.

What was achieved

The pad comprised 24 wells drilled—12 using a third-party RSS and 12 with NeoSteer CL ABSS. The ABSS reached a maximum ROP of 299 ft/h, the fastest on the pad. In combination with three other wells, the NeoSteer CL ABSS accounted for the four fastest wells drilled on the pad. In fact, it drilled 10 out of the 12 highest ROPs. The effective ROP of NeoSteer CL ABSS was 215 ft/h vs. 170 ft/h for the third-party vendor.

A comparative analysis of surveys for all the wells on the pad showed that our at-bit steerable system drilled significantly smoother boreholes. Consequently, the operator awarded all remaining pad work to Schlumberger.



NeoSteer CL ABSS achieved a maximum ROP of 299 ft/h vs. 215 ft/h for the third-party vendor. The effective ROP was 215 ft/h vs. 170 ft/h for the other vendor.