

Operator Drills Record-Setting Multilateral Well Through Highly Abrasive Formation in Single Runs

PowerDrive Orbit RSS endures grueling and punishing conditions to drill 13,890 ft

An operator drilled the longest single-run footage using a PowerDrive Orbit* RSS for a multilateral well with three legs in the Middle East. Each leg was drilled with a single BHA run, and two openhole sidetracks were performed to achieve parallel lateral sections to maximize production. Total footage drilled was 13,890 ft.

Maximize well production with aggressive dual-lateral design

For a well in Oman, an operator changed the horizontal configuration to include dual-lateral sections to maximize well production. The change consisted of one straight lateral with a second lateral requiring a 4.5°/100-ft curve for a 2,000-ft interval. This would position the second lateral about 1,000 ft horizontally parallel to the first lateral while geosteering through the 7- to 15-ft reservoir window. Given the challenges presented by this well design, the required drive system must enable drilling long laterals up to approximately 6,500 ft, deliver fast dogleg-severity (DLS) response for geosteering with a high turn rate, and most importantly, include the capability to perform openhole sidetracks.

Employ high-performance drilling with enhanced directional control

The operator selected the PowerDrive Orbit RSS because it is robust and versatile, delivering the required capabilities for severe DLS and minimizing high tortuosity observed in point-the-bit systems—which suffered multiple tool failures during similar operations, not to mention that additional trips were required for openhole sidetracks when using motors. PowerDrive Orbit RSS cuts drilling time and increases efficiency with its ability to steer at high BHA rpm. And the six-axis continuous hold inclination and azimuth measurements optimize well placement and trajectory control for smoother tangents.

Achieved single-run drilling of multilateral well for record footage

Remarkable trajectory control was attained with the PowerDrive Orbit RSS while holding inclination as well as fast drop-and-build inclination response during the required geosteering. This enabled the operator to drill each of the three legs in a single run, resulting in the longest single-run footage achieved using a PowerDrive Orbit RSS for on a 6½-in horizontal section in the Middle East. Two of the legs included openhole sidetracks for which the time was reduced from 18 to 4 h on average. Total depth of the well was 13,890 ft.



PowerDrive Orbit RSS endures grueling and punishing conditions to drill 13,890 ft through highly abrasive formation in single runs.