DATA SHEET

PowerDrive Archer
High build rate RSS completes more than 30 openhole sidetracks in variety of complex applications

Openhole sidetracking can be a difficult and time-consuming operation. A common approach is to set a cement plug and use a dedicated sidetracking motor BHA or openhole whipstock. These approaches can require up to three runs to complete, increasing cost and the risk of potential drilling incidents. Advances in rotary steerable technology and well design techniques offer new possibilities to efficiently use openhole sidetracks to significantly improve reservoir recovery. The ability to perform openhole sidetracks with a RSS can dramatically improve efficiency, while well design advances that integrate subsurface understanding significantly improve the associated production and recovery.

Operators in the Middle East wanted an openhole sidetracking solution that could deliver fast and accurate results on their complex dual and multilateral wells.

In Asia, an operator's complex reservoir structure required sidetracks to reduce attic oil while geosteering.

And in South America, an operator was faced with a difficult sidetrack around a lost BHA close to the casing shoe.

With its ability to drill complex 3D wells from any inclination, the PowerDrive Archer RSS was selected for all these applications. The increased dogleg capability gives operators assurance that these difficult openhole sidetracks can be completed.

Dual and multilateral wells
In the Middle East, several operators are taking advantage of the PowerDrive Archer openhole sidetracking ability to improve performance.

One operator completed several dual lateral wells in single runs. After drilling the first lateral, the BHA was pulled to the sidetrack point, and an openhole sidetrack was completed without incident. On subsequent wells, further improvements were made to the sidetracking technique, with the openhole sidetrack being completed in 2–3 hours.

Another client designed two consecutive multilateral wells in deep carbonate formations. The first reservoir section had four legs, and the three openhole sidetracks were successfully performed with PowerDrive Archer RSS before continuing on to drill into the laterals. The second well, with three legs, again used PowerDrive Archer RSS to successfully perform the openhole sidetracks before continuing to drill.

Well placement and geosteering
In Asia, seven openhole sidetracks were performed in relatively soft formations using the high build rate RSS to reduce attic oil and place the well in an optimal position.
Recovering from difficult situations

In Argentina, a BHA was lost in hole while drilling at less than 20 ft/h with a hole inclination of 50° in a hard formation. In 10 hours, the PowerDrive Archer RSS drilled an openhole sidetrack, and the system built a continuous 7°/100 ft curve into the horizontal section in a smooth run.

And onshore US, the PowerDrive Archer RSS was used to kick off a cement plug at 8° inclination. While reaching the estimated top of cement, the plug was unable to hold any weight on bit. Rather than pull out of hole and set a new cement plug, the RSS began drilling the open hole. After 8 hours of drill time, downhole surface data indicated that the system had begun drilling a sidetrack. An additional 4 hours of controlled drilling was performed, at which point the new borehole was fully separated from the old hole.

Contact your local Schlumberger representative to learn more.