Wellbore Integrity SOLUTIONS

Use of TrackMaster Select System Saves 36 Hours of Rig Time in a Challenging Application in Mexico

An outstanding one-trip performance using the Trackmaster Select* system delivers a successful deep sidetrack in a 9⅞ inch high strength casing.

CHALLENGE

A customer required a deep sidetrack, in 9 ⅞ in, 62.8 ppf TAC-140 casing with the presence of poor cement behind the casing. A rat hole in a high compressive strength (>20ksi) formation was also required. A one-trip solution was desired with the delivery of a full gauge window for the trouble-free re-entry of subsequent drilling assemblies.

SOLUTION

WIS recommended a Trackmaster Select whipstock system, configured with an integral construction tri-mill with a hybrid cutting structure to complete this challenging application.

RESULT

- Successfully completed a window in 9⅞ in. 62.8 ppf TAC-140 casing in one trip.
- 36 hours of rig time was saved.
- The integral tri-mill was within acceptable gauge diameter criteria after the run, assuring a high-quality window.
- Subsequent directional drilling assemblies passed freely through window to continue drilling the 8½ in. section to TD.

An optimized TrackMaster Select configuration, with an integral tri-mill, was prepared to successfully sidetrack from high strength casing and drill a rat hole in hard formation.

Wellbore Integrity Solutions (WIS) in Mexico responded to a customer's request to plan and execute a challenging sidetrack, onshore in Mexico. The specific criteria that made this a challenging application included:

- Deep exit point of 6,700 m (approximately 22,000 ft), 270 degrees orientation
- High temperature
- High strength, grade TAC-140 casing
- Poor cement quality behind the casing
- High compressive strength formation, greater than 20,000 psi, comprising, conglomerates, shale, sandstone, and traces of limestone

Historical records indicated that this sidetrack application should require two trips. However, for this sidetrack, WIS recommended the use of the new integral design tri-mill with a hybrid cutting structure. This configuration selection resulted in an outstanding one-trip sidetracking performance. The casing was successfully milled, and the rathole drilled in a total of 20 hours. The follow mill was measured to be within 1/32 inch of full gauge and the dress mill at full gauge when inspected on the surface, assuring that the window that had been created was of high quality. The subsequent directional drilling bottom hole assembly (BHA) passed freely through the window and continued to drill ahead as planned.

A significant time saving of 36 hours was recognized in this application.