PERFORMANCE BULLETIN

Wellbore Integrity SOLUTIONS

Successful Window Milling in 7 inch x 9⅝ inch Casing Using 5⅝ inch FastTrack Hybrid Bi-Mill in Mexico

Wellbore Integrity Solutions (WIS) used expert planning and hybrid Bi-Mill technology to deliver a smooth, precise window in a Mexico sidetrack.

Careful Planning Leads to Successful Dual Casing Sidetrack Operation in Mexico

The WIS Mexico team supported a major oil and gas operator in achieving a significant milestone: completing their first 7 inch TAC-140 x 9⅝ inch TAC-110 dual casing exit at a depth of 5,898 m (19,350 ft). This success reinforces WIS as a trusted partner in whipstock operations.

The operation utilized a 7 inch TrackMaster Select Whipstock and a 5⅝ inch OD Hybrid Bi-Mill, which delivered a high-quality, full-gauge window in just four milling stages. Both the 3.21 m window and 3.6 m rathole were completed on schedule.

Dual casing exits are particularly challenging in high-strength casing environments like TAC-110 and TAC-140. To meet the customer's goals for depth and cost-efficiency, WIS engineered a sidetrack solution that accounted for extreme conditions, including fatigue risks from combined stresses on the Bi-Mill during window milling and rathole drilling through high UCS formations.

The 7 inch whipstock was successfully set at 5,904 m with a 66° right-hand side (RHS) orientation. Following completion of the window and rathole, a BHA with a 5⅝ inch OD bit and 5⅝ inch OD watermelon mill was run to extend the rathole and ensure sufficient length for the rotary steerable system (RSS) to pass through.

Well Information:

Location: Mexico

Casing Size: 7 inch (TAC-140, 38 lbs/ft) & 9⅝ inch (TAC-110, 53.5 lbs/ft)

Setting Depth: 5904 m @ 2.24°/30m

Inclination @ Whipstock: 34.7°

CHALLENGE

Execute a dual casing sidetrack through 7 inch TAC-140 and 9⅝ inch TAC-110 casing, creating a full-gauge, usable window at 5,898 m, exiting into a formation with Unconfined Compressive Strength (UCS) ranging from 17 to 27 KSI. The whipstock system was designed to perform the operation in multiple stages to mitigate the risk of failure due to the high-strength casing.

SOLUTION

- TrackMaster Select FastTrack System recommended and deployed by WIS.
- Configured with 5⅝ inch OD hybrid bi-mill for dual casing window milling.
- Hydraulic permanent anchor used for reliable whipstock stability.
- Lead mill equipped with tungsten carbide and diamond inserts to maximize milling efficiency.

RESULTS

- Successfully completed staged milling of window and rathole, exceeding customer expectations.
- 5⅝ inch OD Hybrid Bi-Mill remained within acceptable dull grade and gauge loss limits, despite challenging casing and formation conditions.

TrackMaster Select™

- A HISTORY OF INNOVATION
- UNRIVALED EXPERIENCE
- GLOBAL PRESENCE

wellboreintegrity.com