

Expro Excellence

Regional first use of HI TOOL[®] as active fulcrum stabilizer in point-the-bit RSS system gives 100% MWD/LWD detection and trouble-free drilling of directional extended reach drilling (ERD) well

Well Construction | Drilling Technologies



Objectives and background

- A Middle East operator trialed the HI TOOL[®] in a 12 1/4" build section in front of the RSS system; building from 28° to 54°
- The Expro HI TOOL[®] Harmonic Isolation Tool was deployed in four 12 1/4" build sections (drilled with point RSS in a near bit position under the RSS) to gain technical approval for its vibration mitigation applications. The sections were drilled with and without the HI TOOL[®], and black boxes installed in the bit and above the rotary steerable system (RSS) & logging while drilling (LWD) system in order to establish vibration and mechanical specific energy (MSE) baselines

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- Placing the HI TOOL[®] in the BHA above the bit and below the point RSS as the active fulcrum point allowed the PDC bit to drill undisturbed by the drill string dynamics, effectively decoupling the shocks that reduce performance, and supporting more effective drilling. Simultaneously, shocks from the formation drilling were isolated and dissipated at the HI TOOL[®] and not transferred into the drilling system above

Value to the client

- The HI TOOL[®] proved effective in decoupling the lateral vibrations, achieving lower lateral vibrations levels in the order of tens of g's, values that were consistently observed at the BB sensors above the HI TOOL[®]. The use of the HI TOOL[®] reduced the absolute values of the MSE equation trends, contributing to better utilization of the energy applied to the drilling bit
- High at-bit shocks of 20 g's reduced to two g's above HI TOOL[®] as proven by BB sensors
- 100% clean LWD detection; good quality RT lithology data
- Validation of MSE as a measure for performance drilling management

Bespoke solution



Partnership

