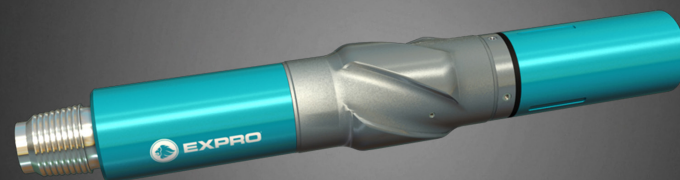


Expro Excellence

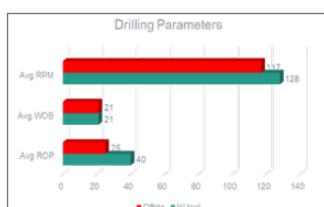
HI TOOL® Improves ROP and protects RSS performance in 12 1/4" section in Kuwait

Coretrax | ADVANCE



Objectives and background

- A major operator in Kuwait contacted Expro to address persistent drilling performance and reliability issues experienced in 12 1/4" deviated sections through hard, high friction carbonate formations. This was a long standing client relationship, built on prior collaboration, but the application represented a renewed technical challenge requiring a differentiated solution
- Historically, the operator's RSS bottom hole assemblies were exposed to severe torsional (stick slip) and lateral vibration, driven by formation hardness and high friction levels. These dynamic conditions led to:
 - Frequent BHA and component failures
 - Damage to costly RSS tools and associated components
 - Increased non productive time (NPT) and elevated operational risk
 - Constrained drilling performance, with WOB and RPM deliberately limited to avoid further tool damage
- The core challenge was clear: improve rate of penetration (ROP) without compromising RSS integrity and BHA reliability in an extremely aggressive vibration environment



Expro Excellence

- Expro deployed its HI Tool as an integral part of the RSS BHA, with a carefully engineered placement directly above the MWD/LWD suite to shield sensitive electronics and RSS components from damaging vibration
- Key elements of the solution included:
 - Strategic BHA integration:** The HI Tool was positioned to effectively decouple the bit and lower BHA from harmful drillstring dynamics
 - Advanced vibration mitigation:** The tool redistributed and dissipated torsional, axial, and lateral shock loads into the wellbore, significantly reducing dynamic loading across the BHA
 - Protection of critical assets:** Vibration isolation minimized component fatigue and failure risk, safeguarding RSS pads, and MWD/LWD tools
 - Expanded operating envelope:** Reduced vibration enabled the operator to safely increase WOB and RPM, allowing more aggressive yet controlled drilling
- By stabilizing the drilling system rather than restricting it, Expro enabled performance improvements that would not have been achievable otherwise. Without this solution, the operator would have continued to experience RSS damage, elevated NPT, restricted drilling parameters, and increased well delivery risk



Value to the client

- The deployment of the HI Tool delivered clear, measurable performance and reliability gains:
 - ~60% improvement in average ROP compared to the offset well, achieved at similar WOB
 - Increase in average RPM from 117 to 128 rpm, demonstrating a broader and more stable drilling parameter window
 - Extremely low lateral vibration at the bit, confirming effective isolation from drillstring dynamics and improved bit formation interaction
 - Reduced stick slip frequency, contributing to smoother drilling and higher efficiency
 - No RSS damage observed in the HI Tool run, in contrast to offset sections where RSS pad damage occurred
 - MWD/LWD performance remained fully unaffected
- Overall, Expro's HI Tool enabled faster, smoother, and safer drilling while significantly improving BHA reliability in one of the most challenging sections of the well. The solution directly reduced operational risk, minimized NPT, and delivered tangible performance gains—reinforcing Expro's role as a trusted technical partner in high severity drilling environments

Safety



Enhanced production

