Trajectory Control Through Hard Formations

Integrated RSS, Logging Tools Eliminate Extra Runs, Keep Decisions Data-Driven at Critical Depth

Objectives

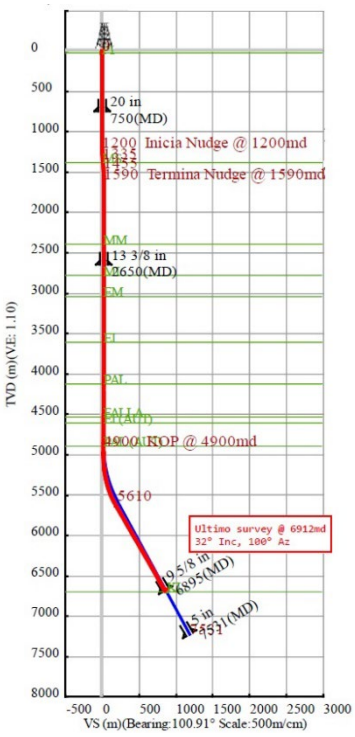
- Drill the planned well section while reducing the total runs planned and improving ROP.
- Acquire reliable real-time formation evaluation data to support geo-stopping decisions and minimize drilling risk like lost-in-hole tools or fluid total losses due to wrong casing point.
- Reduce cooling cycles in the high-temperature environment to optimize drilling.

Our Approach

- To address the high-temperature environment, trajectory requirements, and critical casing point, the solution was implemented using a Magnus® Saker rotary steerable system (RSS) integrated with multiple LWD sensors and tools. This integrated configuration enabled the delivery of reliable, real-time directional and formation evaluation data throughout the entire drilling operation, with particular emphasis on accurate casing point definition.
- The system drilled the 12 1/4-in section, achieving consistent trajectory control while building the angle through hard formations under temperatures reaching 314 degF (157 degC).
- In the first run, 11,246 ft (3,429 m) were drilled in 150 hours, delivering an average ROP of 72 ft/hr (22 m/hr), a 50% improvement over the previous performance record in similar conditions.
- The solution maintained full LWD functionality, including continuous resistivity and gamma measurements, enabling informed decisions, reducing uncertainty, and eliminating the need for additional runs.

Value to Customer

- The planned trajectory was successfully followed to the end of the hole section, ensuring accurate well placement at a critical casing depth.
- This improved execution reduced operational risk, preserved wellbore quality, and enabled the operator to meet drilling objectives more efficiently.
- The same level of LWD performance was successfully replicated in a previous well, confirming the consistency and repeatability of the results.
- The operation also achieved a field milestone: it marked the first time a near-bit gamma ray sensor, integrated into a Magnus RSS, completed the entire run with full functionality at the casing point, enabling faster and more confident decision-making during casing point definition in an environment where previous solutions had failed.



The well profile, followed successfully by the Magnus RSS, building 32° in hard formations.

LOCATION
Mexico

WELL TYPE
Development, producer, directional

FORMATION
Carbonates

DEPTH
11,246 ft (3,429 m)

PRODUCTS/SERVICES
- Magnus RSS
- MFR™ multifrequency resistivity sensor
- HAGR™ high-temperature azimuthal gamma ray sensor
- BAP™ bore and annular pressure sensor

© 2026 Weatherford. All rights reserved.

Weatherford products and services are subject to the Company's standard terms and conditions, available on request or at weatherford.com. For more information contact an authorized Weatherford representative. Unless noted otherwise, trademarks and service marks herein are the property of Weatherford and may be registered in the United States and/or other countries. Weatherford products named herein may be protected by one or more U.S. and/or foreign patents. Specifications are subject to change without notice. Weatherford sells its products and services in accordance with the terms and conditions set forth in the applicable contract between Weatherford and the client.