

Magnus Rotary Steerable System

Overcomes Differential Sticking to Sidetrack Well in 1 Run, Saves 24 Hours of Rig Time

Objectives

- Sidetrack an 8 1/2-in., 48° pilot hole off of a sub-optimal cement plug in an onshore horizontal well in the Burgan reservoir.
- Mitigate differential sticking issues typically encountered when attempting to sidetrack with a conventional oriented mud motor and measurement-while-drilling (MWD) tools.

Our Approach

- Previous sidetracking with an oriented mud-motor bottomhole assembly (BHA) had resulted in stuck pipe requiring multiple fishing attempts for full recovery. To avoid similar issues in subsequent operations, the customer requested a rotary steerable system (RSS) with a fully rotating body.
- The Weatherford Drilling Services team proposed the Magnus RSS to sidetrack off the existing cement plug—instead of setting a second, expensive cement plug—to save time and money.
- Real-time information enabled the team to verify the Magnus sidetracking progress while performing the operation. The near-bit inclination sensor validated the success of the sidetrack.
- In a single run, the RSS drilled 186 ft (56.7 m) in 30.2 hours and exited the original hole without any sticking issues.
- The operation marked a significant milestone for sidetracking under these conditions. By eliminating the need to set a new cement plug, the Magnus RSS sidetrack saved the customer 15 to 24 hours of nonproductive time.

Value to Customer

- The Magnus RSS enabled the customer to perform a single-trip sidetrack off a very soft cement plug. This operation enabled the customer to avoid setting a second cement plug and eliminate the rig time associated with a second trip to sidetrack using a motor.
- With its fully rotating body, the Magnus RSS mitigated the high risk of stuck pipe in challenging hole conditions.



The Magnus RSS sidetracked off of a challenging cement plug in a single run.

LOCATION
Kuwait

WELL TYPE
Onshore, horizontal, oil

FORMATION
Burgan

HOLE SIZE
8-1/2 in.

DEPTH

- In: 8,057 ft (2,456.8 m)
- Out: 8,243 ft (2,512.5 m)

FOOTAGE DRILLED
186 ft (56.7 m)

OPERATING HOURS
58

DRILLING HOURS
30.22

PRODUCTS/SERVICES

- Magnus RSS
- HEL hostile-environment-logging MWD system

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