



# Engineered Solution Enables Operator to Successfully Drill Reentry Well in Gulf of Mexico

## INTEGRATED DRILLING SERVICE ACHIEVES DRILLING PROGRAM GOALS

GULF OF MEXICO

### CHALLENGES

- » Safely and efficiently drill reentry well in Gulf of Mexico
- » Maintain bottomhole pressure control within a 0.7-pound-per-gallon overall pore/fracture pressure drilling window

### SOLUTIONS

- » Marine Sentry RCD 3000™ rotating control device for GeoBalance® MPD system
- » GB Setpoint™ advanced real-time hydraulic model to maintain bottomhole pressure just above the pore pressure while drilling and tripping
- » Geo-Pilot® RSS to safely drill reentry well to total depth

### RESULTS

- » Safely executed drilling program without non-productive time.
- » Drilled hole section with one dual element bearing run, stripped over 25,000 ft
- » Provided stable wellbore for completion

### OVERVIEW

For a customer in the Gulf of Mexico, Halliburton provided an integrated drilling service that included the Marine Sentry RCD 3000™ rotating control device and the GeoBalance® managed pressure drilling (MPD) service. The Marine Sentry RCD 3000 device provided the closed drilling loop for the MPD system that was implemented to mitigate drilling risks associated with a narrow 0.7-pound-per-gallon drilling window. The GeoBalance MPD system, the GB Setpoint™ advanced real-time hydraulic model, and the Geo-Pilot® rotary steerable system (RSS) were used to safely and successfully drill the reentry well to reach a total measured depth of 17,485 feet (5,329 meters).

### CHALLENGES

Narrow-pressure drilling windows can cause borehole instability, along with associated shale breakouts occurring from pressure cycling of the borehole, downhole mud losses, surge and swab effects, and possible kicks.

This Gulf of Mexico field, which is 372 feet (113 meters) deep, presented a number of risks and drilling challenges due to narrow-pressure drilling windows. Borehole instability, mud loss issues, and drilling risk mitigation were main drivers for the operator to seek an MPD solution. Halliburton was asked to provide an integrated drilling solution to safely and effectively drill the intervals within a 0.7-pound-per-gallon overall pore/fracture pressure drilling window because of the depletion of the upper reservoir.

### SOLUTIONS

Halliburton provided an engineered solution that utilized the Marine Sentry RCD 3000™, Geo-Pilot® rotary steerable system; GeoBalance® MPD equipment; the GB Setpoint advanced real-time hydraulic model, which tracks different fluid densities and rheology to calculate the proper surface pressure to maintain bottomhole pressure just above the pore pressure while drilling and tripping.



Marine Sentry RCD 3000™ rotating control device

## RESULTS

Not only was the well drilled safely without non-productive time, the entire hole section was drilled with one Marine Sentry RCD 3000™ bearing run, maintaining pressure sealing with dual elements over 25,000 feet of stripping. The well bore was left in a stable condition to successfully cement the well for completion.

Collaboration, a thorough design of service, proper documentation, and focused execution were key elements to successfully drilling the well and achieving the goals of the project.



*The Marine Sentry RCD 3000™ rotating control device and the GeoBalance® MPD system were key components of an engineered solution enabling an operator to safely drill a reentry well in the Gulf of Mexico.*

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