

RipTide® RFID Drilling Reamer and Rathole Killer

Enable a Dual-Reamer Solution that Drills to TD, Eliminates Rathole, Saves \$1.57 Million in Deepwater Well

Objectives

- Drill and log a 16 3/8-in. wellbore section while simultaneously underreaming the borehole to 20 in.
- Eliminate the rathole.

Our Approach

- Throughout the prejob planning phase, Weatherford collaborated with the client to perform hydraulic and torque/drag analysis. Together, they determined that the optimal BHA was a dual-reamer configuration.
- Weatherford designed the BHA to run the RipTide radio-frequency-identification (RFID) drilling reamer (the primary reamer) and the RipTide Rathole Killer drilling reamer (the secondary reamer) in tandem. The RFID functionality enables unlimited, on-demand actuation of the reamers for greater operational flexibility. The fullbore inside diameter of the tools also enables the use of a measurement-while-drilling (MWD) system.
- The team wired the primary reamer to maintain real-time communication between the rotary-steerable system (RSS) and the MWD system. Before the reamers ran downhole, surface testing confirmed proper functionality.
- The team placed the primary reamer 177 ft (54 m) above the bit. They placed the secondary reamer between the RSS and MWD system at 36 ft (11 m) above the bit.
- An RFID tag actuated the primary reamer at a depth of 13,763 ft (4,195 m). The primary reamer drilled the 16 3/8-in. borehole while simultaneously enlarging it to 20 in. When the primary reamer reached the TD of 15,518 ft (4,730 m), an RFID tag deactivated the primary reamer.
- At total depth (TD), a pressure cycle activated the secondary reamer. The secondary reamer eliminated the 121-ft (37-m) rathole and then drilled 59 ft (18 m) beyond TD—while enlarging the borehole to 20 in.—to enable optimal casing setting.
- Throughout the operation, the team monitored and adapted drilling parameters to avoid straining the BHA unnecessarily and to maintain an optimal rate of penetration.

Value to Client

- Weatherford RipTide drilling reamer technology drilled and enlarged a 16 3/8-in. wellbore section. By using the same BHA to drill and enlarge the borehole to TD, to eliminate the rathole, and to drill beyond TD, the operation avoided a trip to change out the BHA. This saved 1.9 days of rig time valued at approximately US \$1.57 million.
- By enabling the client to drill past TD, the secondary reamer helped to land the well in the optimal spot for setting and cementing casing.



The Weatherford RipTide Rathole Killer drilling reamer can be activated by both pressure cycling and RFID to simultaneously drill and enlarge boreholes while eliminating ratholes.

LOCATION

Gulf of Mexico

WELL TYPE

Deepwater, exploration, vertical, gas

FORMATION

Shale, sand

FIELD

Alaminos

HOLE SIZES

16-3/8 to 20 in.

STARTING DEPTH

13,763 ft (4,195 m)

TOTAL DEPTH

15,518 ft (4,730 m)

AVERAGE RATE OF PENETRATION

48.2 ft/hr (14.69 m/hr)

PRODUCTS/SERVICES

- RipTide RFID drilling reamer
- RipTide Rathole Killer drilling reamer

