

# DwC System with Defyer® DPA Casing Bit Sets 24-in. Conductor Casing to Section Depth and Covers Loss Zones With Zero Issues

## Objectives

- Simultaneously drill and case a 24-in. vertical well section to the desired depth in a formation with wellbore stability issues. In an offset well, the operator had experienced problems with fluid losses and hole cleaning.

## Our Approach

- After reviewing the surface and drilling information from an offset well, Weatherford proposed drilling-with-casing (DwC) techniques in the current well to simultaneously drill and case, reduce fluid losses, and improve hole cleaning. DwC techniques plaster drilled cuttings to the borehole wall and create an impenetrable mud cake that can minimize or stop fluid losses. The techniques also result in a smaller annulus that can double the wellbore fluid velocity and improve hole cleaning compared to conventional drilling methods.
- The Weatherford team deployed a DwC system—including a 27-in. OD Defyer DPA drillable casing bit and a DwC internal casing drive tool (ICDT)—to drill through the expected hard stringer layers. The team also used conventional tubular-running equipment, such as tongs, a single-joint elevator, and hand slips.
- The team safely set 24-in. conductor casing at the planned 335-ft (101-m) section depth without the downhole issues encountered in the offset well. The drilling and casing operation marked the largest-OD Defyer DPA run in the world to date, and the positive outcome was attributed to the plastering effect of the drilled cuttings onto the permeable layers.
- The job was completed with no personnel injuries or operational incidents.

## Value to Client

- The DwC system enabled the client to drill through problematic shallow loss zones, reach the planned depth, and case off the entire well to the target depth as planned.



The crew runs the Defyer DPA casing bit in the hole.

### LOCATION

Papua New Guinea

### WELL TYPE

Onshore, appraisal

### HOLE SIZE AND ANGLE

27 in., 0.35° at 351 ft (107 m)

### CASING SIZE

24 in. with 0.75-in. X56 Leopard SDIF casing connector

### SECTION DEPTH

335 ft (101 m)

### PRODUCTS/SERVICES

- Defyer DPA 6619X 27-in. OD × 24-in. conductor casing
- DwC ICDT
- Single-joint elevator
- Hand slips
- 30-in. hinged casing spider with 24-in. bushings
- Manual tongs

