DwC™ System With Defyer® DPA Bit

Drills and Cases 2 Continuous Sections to TD, Saves 5 Days of Rig Time

Objectives

- Drill and case 16- and 12-in. hole sections to total depth (TD) in optimal drilling times.
- Mitigate drilling challenges, such as fluid channeling on the surface and water intrusion from aquifer and reactive clays common to this formation.

Our Approach

- Weatherford proposed using drilling-with-casing (DwC) technology, including the Defyer DPA drillable casing bit, to optimize drilling times and mitigate trouble zones.
- To drill the 16-in. section and install 13 3/8-in. casing, the Weatherford team deployed the Defyer DPA 4416 casing bit with the OverDrive™ casing-running system, which included the TorkDrive™ internal compact tool (ICT).
- The OverDrive system and the Defyer DPA casing bit helped to avoid fluids on the surface, to isolate the aquifer, and to overcome clay zones to reach a depth of 656 ft (200 m) in the first section.
- After cementing the 13 3/8-in. casing, the Weatherford team deployed the Defyer DPA 6413 with the OverDrive system, which included the TorkDrive ICT.
- Using the Defyer DPA 6413, the team drilled out cementation accessories, including the 13 3/8-in. shoe track, and the Defyer DPA 4416.
- On the same drillout run, the team continued drilling the 12-in. section to TD at 3,281 ft (1,000 m) and installed the 9 5/8-in. casing without trouble, despite the reactive clays present.
- The operation was the first time anywhere that Defyer DPA technology was used to drill and case two sections of different sizes in the same well.

Value to Client

- DwC technology and the OverDrive system enabled the operator to drill and case the well to TD with 13 3/8- and 9 5/8-in. casing. Compared to conventional drilling methods, the combined technologies saved 5 days of rig time.
- The Defyer DPA casing bits mitigated drilling problems in the clay, reduced the number of trips required between stages, and eliminated the risks related to conventional operations.

Defyer DPA drillable casing bits can and have been used to drill and case two sections of different sizes in the same well.

LOCATION
Bolivia

WELL TYPE
Onshore, gas, vertical

FORMATION
Chaco

FIRST SECTION
- Casing size: 13 3/8-in., 54.4-lb/ft K-55 BTC
- On-bottom ROP: 42.7 ft/hr (13 m/hr)
- WOB: 8,000 lb (3,629 kg)
- RPM: 85
- Torque: 400 ft-lb (542 N·m)
- Flow: 400 gal/min (1,514 L/min)
- Pump pressure: 480 psi (3.3 MPa)

SECOND SECTION
- Casing size: 9 5/8-in., 40-lb/ft N-80 BTC
- On-bottom ROP: 43.6 ft/hr (13.3 m/hr)
- WOB: 16,000 lb (7,257 kg)
- RPM: 100
- Torque: 7,500 ft-lb (10,169 N·m)
- Flow: 700 gal/min (2,650 L/min)
- Pump pressure: 1,550 psi (10.7 MPa)

PRODUCTS/SERVICES
- OverDrive casing-running system with the TorkDrive ICT
- Defyer DPA casing bits
- Cementing float collars
- Torque rings
- DwC application engineering

Weatherford®