

Extreme™ Plug Eliminates 90% Water Cut and Restores Oil Production, Rigless Installation Saves 20 Days of Rig Time

Objectives

- Isolate a water-producing zone in the lower 13 perforated intervals of a horizontal completion that was contributing to a 90% water cut in production.
- Deploy a solution that would be capable of navigating restrictions in the completion string—because the client did not want to pull the completion string—and that would provide a differential pressure barrier of 3,000 psi (20.7 MPa).
- Avoid using explosive devices, which if selected would delay the operation significantly by requiring months to secure approvals from local government.

Our Approach

- Weatherford recommended the Extreme plug because it could be installed without pulling the completion string and without using a rig or explosive devices. The Extreme plug also met the differential-pressure requirements in this well.
- Using a wireline tractor device, the team ran the 3.5-in. plug downhole through the 5.5-in. production casing. The plug passed through completion restrictions of 3.68 in.
- The team set the plug at a depth of 24,738 ft (7,540 m) using a non-explosive, hydrostatically driven setting tool. The setting tool enabled deliberately slow expansion of the plug and even anchor pressure against the casing. Once set and released by means of the shear stud, the downhole tractor applied force against the plug to verify its set position in the well.
- The plug expanded to 144% of its original elastomer size against the casing to seal perforations that had been enabling water entry. The plug held against pressure from above and below.
- The client gave Weatherford an “Excellent” rating for the success of the Extreme plug on this job.

Value to Client

- The Extreme plug efficiently isolated the water-producing zone and restored valuable oil production.
- The rigless installation of the Extreme plug saved 20 days of rig time along with the associated costs.



The Extreme plug provides immediate zonal isolation in deepwater, high-pressure, high-temperature wells. It expands its elastomer size up to 165% and has a maximum pressure rating of 10,000 psi (68.9 MPa).

LOCATION

Republic of Congo

WELL TYPE

Offshore, oil producer with gas lift

HOLE ANGLE

92° maximum deviation

INNER AND OUTER CASING SIZES

5-1/2 in., 9-5/8 in.

TEMPERATURE

293°F (145°C)

PRESSURE

4,715 psi (32.5 MPa)

SETTING DEPTH

24,738 ft (7,540 m)

PRODUCTS/SERVICES

- 3.5-in. Extreme plug with Ravel™ slip and Healing System™
- Non-explosive, hydrostatically driven setting tool

