



Weatherford®

REAL RESULTS

Automatic Water Shutoff Solution Puts Major BP Subsea Well Back on Production, Removes Need for Second Intervention, Saving \$5 Million

Objectives

- Shut off unwanted water production in the lower zone of a major subsea production well. Production topside limitations had precluded processing of unwanted produced water rates for a set period of time, forcing BP to shut down the well.
- Mitigate risks. The well had a history of problematic downhole tool deployment, confirmed by the use of proprietary modeling software.

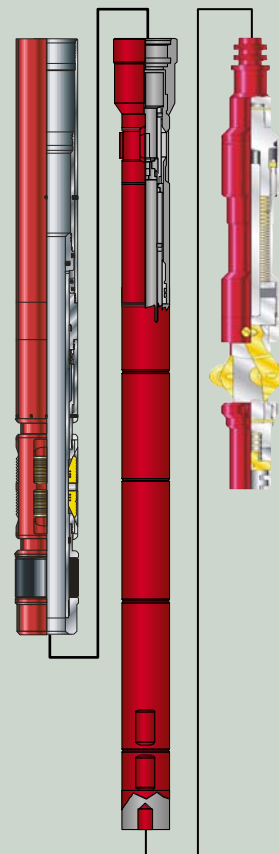
Results

- After conducting an in-depth assessment of the client's requirements and objectives, Weatherford's Well Engineering Solutions Team (WEST) proposed a fully compatible 13Cr system that would automatically and remotely shut off the unwanted water production for a specified period of time. The system featured Weatherford's electronic shut-in tool, powered by lithium batteries and with a memory that can be programmed with time between open and close cycles ranging from 5 minutes to 416 days. A customized PB packer (4.1 in.), engineered and tested to ISO standard, was also part of the system.
- The system was deployed successfully to shut off the unwanted water production, and the well was put back on production. The system is timed to automatically open the temporary barrier exactly one year after shutoff.

Value to Client

- The complete solution, coordinated by WEST, will eliminate the need to mobilize an intervention vessel one year after shutoff, resulting in a cost saving of about US\$5 million.
- The job allowed successful production from a dry oil zone with temporary shutoff of a deeper high-watercut interval.
- The job was performed under budget and on schedule, without safety issues or nonproductive time.

Weatherford's electronic shut-in tool, a customized packer, spring roller centralizer, safety release, and pressure and temperature memory gauges were all part of the fully compatible 13Cr system used in this water shutoff solution.



Client
BP Exploration

Location
UK North Sea

Well Type
Subsea production well

Hole Angle
65°

Casing Size and Type
5-in., 18-lb/ft 13Cr

Maximum Temperature
213°F (101°C)

Setting Depth
6,532 ft (1,991 m)

Run Length
29.8 ft (9.1 m)

Products/Services

- Electronic shut-in tool with memory
- Customized PB packer
- Safety release (or flow joint)
- Petrolin® spring roller centralizer
- Pressure and temperature memory gauges