



DEEP WATER



MATURE FIELDS

# Integrated Operation Saves Operator Five Hours of Rig Time

## SINGLE-TRIP SOLUTION BRINGS EFFICIENCY AND COST SAVINGS

OFFSHORE NORWAY

### CHALLENGES

- » Provide a single-trip solution to clean riser/BOP while setting a P&A plug with cement above it
- » Reduce time and cost during P&A operation

### SOLUTION

To enable the operator to quickly and safely perform a P&A operation, a combination solution was recommended, which included:

- » Running an EZ Drill® SVB packer
- » Displacing the well
- » Setting the cement plug
- » Jetting the BOP
- » Brushing the riser with a Riser Bristle Tech® brush

### RESULTS

- » Successfully performed all operations in a single run
- » Utilized personnel already onboard rig, reducing time and risk
- » Avoided an extra trip to clean the riser and BOP, saving the operator at least five hours of rig time

### OVERVIEW

An operator in Norway was looking for a completion solution that would help reduce rig time during an offshore plug and abandonment (P&A) operation by cleaning the blowout preventer (BOP) and riser in the same run as when setting the top P&A plug.

The challenge was to find the right combination of technologies to achieve this goal. In this case, these technologies included an EZ Drill® SVB packer and an 820-foot (250-meter) cement plug for the 4,101-foot (1,250-meter) sea-depth well. After much collaboration, Halliburton decided upon an integrated solution to meet the needs of the customer, and to save valuable rig time.

### CHALLENGES

A combination solution was needed to enable the operator to quickly and safely perform a P&A operation. With the operator's goals in mind, Halliburton recommended:

- » Installing a 13 3/8-in. EZ Drill SVB packer
- » Displacing the remaining well above the EZ Drill SVB packer from 1.25- $\mu$ g oil-based mud (OBM) to seawater through a mechanical setting tool at 925 gpm (3,500 lpm)
- » Pumping and setting a 820-foot (250-meter) cement plug
- » Jetting the BOP
- » Brushing the riser while running in hole and pulling out of hole (RIH/POOH) with an 18 3/4-in. Riser Bristle Tech® brush

To perform this operation, Halliburton had to consider the spacing of the different tools in the string when setting the EZ Drill SVB packer and when pumping/setting the cement plug above it (cement inside and outside the string), prior to opening the jetting tool.

Lastly, to perform the jetting of the BOP, a ball/dart-operated jetting tool was needed that could handle cement being pumped through it and still function as planned.

### SOLUTION

After speaking with third-party suppliers, Halliburton chose to utilize a dart-activated valve to jet the BOP, since the risk of cement sticking inside of the tool was minimal. Halliburton recommended flushing/cleaning of the tool prior to activation.

To propose the best possible solution for this operator, Halliburton prepared a CleanWell® technology WellTech toolstring schematic to determine the optimal spaceout for the operation. Since the Halliburton team was already on board, no extra personnel had to be sent out to the location, which helped to reduce risks.



## RESULTS

All tools were prepared onshore and shipped out to the location. A detailed pre-job meeting was conducted with the Halliburton Cementing team prior to the operation to help ensure that all involved were well informed on the plan of action.

All tools were run in hole (RIH) according to the CleanWell technology WellTech toolstring schematic.

During the operation, Halliburton successfully:

- » Set the 13 3/8-in. EZ Drill SVB packer
- » Displaced the well to seawater at 925 gpm (3,500 lpm), through the mechanical setting tool
- » Placed 820-foot (250-meter) cement plug
- » Pulled the mechanical setting tool above the cement plug, placing the jetting tool (a dart-activated valve) below the BOP and cutting the top of cement, while cleaning/flushing the internals of the jetting tool
- » Dropped a dart to open the valve according to procedure, and then locked the valve in the open position
- » Jetted the BOP with 925 gpm (3,500 lpm) (three passes, function tested rams, two passes)
- » Pulled out of hole with the valve in the open position
- » Brushed the riser, running in and pulling out of the hole, while performing the other operations

All tools used in this operation were in good condition while out of hole, and there was no indication of cement inside the valve when the tool was taken back to the third party. The operator later confirmed that not only was the operation successful, but it also saved them five plus hours of rig time, adding to their bottom line.

After this successful run, Halliburton proposed the same setup to another major operator in Norway that had two other deepwater exploration wells in the area. They too were successfully completed using the same configuration, while running and setting a 20-inch. EZ Drill SV packer on a hydraulic setting tool.

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