CASE STUDY

HALLIBURTON

Africa

Surge reduction float equipment improves RIH efficiency in deepwater operations

SuperFill™ II Big Bore FVB+ float equipment allows faster casing runs

CHALLENGE

- Improve casing run efficiency
- Ensure well-control while RIH and after cement operations
- Minimize formation damage while RIH

SOLUTION

- Superfill™ II BB FVB+ surge reduction float equipment

RESULT

- Significantly improved casing run speed for operator:

  ~32% Faster with 10 3/4-in. casing

  ~24% Faster with 13 3/8-in. casing

  ~16% Faster with 9 5/8-in. casing

Overview

For many operators, running casing can cause time constraints primarily attributed to induced surge-pressure limitations and the requirement to fill the casing at multiple intervals to prevent pipe collapse.

This dedicated time has direct financial impact on well construction and can result in wellbore instability in certain conditions.

Challenge

An operator of a drilling campaign in Africa wanted to improve operational efficiency and increase pipe speed while running casing and during cement operations. In deepwater well-construction environments float-equipment reliability is essential to successful well control and managed-pressure activities.

During previous campaigns, the operator successfully deployed conventional float collars and specialized guide shoes that allowed casing to be run to bottom, past challenging trajectories, to achieve reliable backpressure control post-cement operations.

Solution

Halliburton recommended the operator replace the current float equipment configuration with a SuperFill™ II Big Bore FVB+ float collar and guide shoe to leverage the fully opened valves' capability to auto-fill the casing while running in hole (RIH).

SuperFill II Big Bore FVB+ float equipment can save hours of rig time, optimize casing run speed, and provides the capability to circulate the well and immediately convert the equipment to backpressure mode, as necessary.

The proposed SuperFill float equipment features a large flow area of 8.95-in.2 to increase RIH speed and allow the casing string to auto-fill, which negates

the need to fill from the top. It auto-fills faster than conventional float valves and helps minimize induced surge pressure.

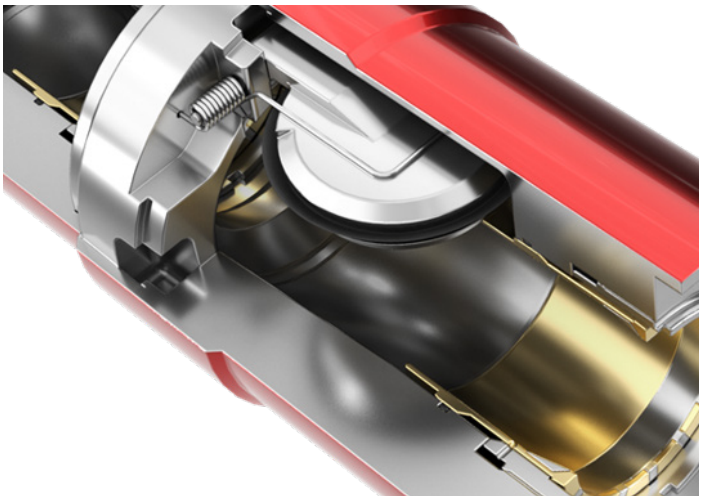
Another advantage is that the FVB+ type of SuperFill float equipment provides the flexibility to circulate with low flow rates and maintain the auto-fill capability, which can be deactivated at any point necessary during the run by increasing differential pressure through increased flow rate.

Result

The operator improved run speed through deployment of the SuperFill II Big Bore float equipment in the 13 3/8-in. intermediate casing section and 10 3/4 × 9 5/8-in. production casing sections. The 13 3/8-in. casing was run 24% faster than during previous campaigns, while the 9 5/8-in. and 10 3/4-in. casing were run 16% and 32% faster than during previous campaigns.

The operator plans to deploy this equipment on additional runs in this campaign as well as others in the region.

SuperFill™ II Big Bore type FVB+ allows wellbore circulation without losing auto-fill capabilities. Increased flow rates will deactivate auto-filling.



The SuperFill™ II Big Bore float valve utilizes 3x stronger springs compared to the previous design to provide enhanced reliability. A reinforced ball catching mechanism retains the deactivation ball until the flapper is fully unsupported. This ensures that the ball only exits the collar when both flappers have converted to the closed position.

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