

DUALFLOW

2m X 2m

COMPACT DESIGN

CASE STUDY

# SEPARATING FRAC PROPPANTS FROM WELLBORE FLUID

NORTH SEA

AUGUST 2014

## CHALLENGE

During start-up, the well became unstable and ceased flowing. Well performance during subsequent opening trials and build-ups indicated that a plug must have been established, initially between the bottom-hole gauge and the shallowest fractured zone. The top plug moved further up the well during the repeated opening trials. The blocking of the well resulted in plugging of surface bleed lines on the flow line and surface equipment. A hard and impermeable plug was tagged at approximately 92m MD RKB. BHP data suggests that there is still plugging material between the down hole gauge and the uppermost perforation.

Operational considerations:

- Possible large amounts of solids and returning fracturing proppants
- Risk of blockage of flowmeters, thus losing parameter logging
- Choke manifold and piping are exposed for excessive washouts while circulating

## SOLUTION

The solution was to perform a wellbore cleanout using Coiled Tubing, accompanied by a FourPhase 5K DualFlow unit allowing safe removal of fracturing proppants. Minimal real estate and deck load limitations were critical, therefore a 5K DualFlow (2m X 2m X 3.2m) was mobilized.

## RESULT

The wellbore cleanout and separating fracturing proppants from the wellbore fluid was a great operational success. The DualFlow unit showed good capacity and separation abilities removing a total of 8800 kg of solids throughout the operation. At a maximum flow return rate the DualFlow was averaging 700kg/hr of removed fracturing proppants.

Key operational outcomes:

- No recorded HSE incidents.
- No recorded equipment downtime
- 8800 kg of fracturing proppants removed from wellbore fluid
- 100% Flowback operational success



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