RFID-Enabled JetStream® Circulation Subs

With Full Bore ID Simultaneously Deploy in Tandem Deepwater Operations With Different Patterns

Objectives

- Deploy a multiple-activation circulation sub with a fullbore ID, interchangeable nozzles, the capability of 50% bypass and, at the same time, allows fluid to flow to the bottomhole assembly (BHA).
- Ensure the sub has the capability to pump up to 950 gpm on a slimhole 6 5/8-in. section, high-angle well.

Our Approach

- Weatherford provided the JetStream circulation subs, in 7-in. and 5 1/4-in., to run in tandem to allow 50% bypass at the 7-in. sub and a 30% bypass at the 5 1/4-in. sub. This allows less than 300 gpm pumped onto the MWD directional BHA. The 7-in. sub was placed across the 9 5/8-in. top of liner.
- The JetStream subs were activated independently with radio-frequency identification (RFID) tags and the pressure sequence was performed concurrently on each tool. The 5 1/4-in. tool was activated first and then the 7-in. tool.
- The tools were programmed with different names and pressure sequences and each tool was configured to different patterns to avoid simultaneous activation.
- After activation, the flow was increased to 950 gpm for 2.75 hours. The tools were then deactivated using both a pressure sequence and RFID tags concurrently and independently for each tool.
- No issues on activation or deactivation were observed.

Value to Customer

- The Weatherford solution enabled the operator to pump up to 950 gpm across the 9 5/8-in. tool on a slimhole section and, at the same time, enabled pumping less than 300 gpm to the slimhole directional BHA.

The loadout of the 7-in. JetStream circulating sub with a nozzled sub.

LOCATION
Offshore, Sabah Malaysia

WELL TYPE
Deepwater, development

HOLE SIZE
6-5/8 in.

TEMPERATURE
127°F (53°C)

DEPTH
13,972 to 13,840 ft (4,258 to 4,218 m)

PRODUCTS/SERVICES
- Drilling services
- Borehole enlargement