

# JetStream® RFID Circulation Sub Precisely Spots LCM, Enables Operator to Reach Total Depth



The JetStream RFID circulation sub, which enables selective, unlimited actuation that is not pressure-dependent, is well suited for drilling operations in porous and fractured formations.

## Objectives

- Precisely spot lost-circulation material (LCM) in a critical offshore well without damaging the measurement-while-drilling tools or rotary-steerable systems in the bottomhole assembly (BHA).
- Mitigate fluid loss and maintain proper hydrostatic pressure while drilling through a soft, porous formation with a propensity for seepage and a known natural fault. Based on previous experience drilling reference wells in the area, the operator anticipated encountering these challenges at 10,446 ft (3,100 m).

## Our Approach

- Weatherford installed a 5 1/4-in. JetStream RFID circulation sub in the drillstring. The rig crew tripped in the drillstring and closely monitored the loss rate during drilling.
- When the loss rate reached 300 bbl/hr (48 m<sup>3</sup>/hr), the team actuated the JetStream sub into the open position using preprogrammed RFID tags. The driller used 5 LCM pills, deployed in succession, to lower the loss rate to 50 bbl/hr (8 m<sup>3</sup>/hr). The team then deployed RFID tags to actuate the sub into the closed position.
- Throughout the entire drilling operation, the team actuated the JetStream sub a total of 16 times (8 pairs of open/close commands) to spot 29 LCM pills. Precise spotting enabled the driller to maintain a loss rate below 20 bbl/hr (3 m<sup>3</sup>/hr) for most of the 14-day operation, with loss rates as low as 13 bbl/hr (2 m<sup>3</sup>/hr) during the final days.

### LOCATION

North Sea

### WELL TYPE

Offshore, oil and gas

### FORMATION

Chalk limestone

### HOLE SIZE

6-1/2 in. at 10,446 ft (3,100 m)

### SECTION LENGTH

3,907 ft (1,191 m)

### INITIAL TOOL DEPTH

10,141 ft (3,091 m)

### TOTAL DEPTH

14,048 ft (4,282 m)

### PRODUCTS/SERVICES

JetStream RFID circulation sub



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### Value to Client

- The reliable performance of the JetStream circulation sub enabled the driller to spot LCM on demand throughout the operation. Without the efficient and precise LCM spotting provided by the JetStream sub, the operator may have been forced to abandon the asset because of fluid losses.
- The full through-bore flow provided by the RFID-actuated JetStream sub helped the driller to maintain hydrostatic pressure within a fairly tight window. Mechanically actuated or pressure-dependent circulating subs would have required additional pressure adjustments.
- The JetStream sub protected the sensitive BHA from harsh LCM and debris.

