

High-Torque Liner-Hanger System and Reamer Shoe Enable Running and Securing Liner in One Trip

Objectives

- Provide a 7-in. hydraulic liner hanger system capable of conveying a drill shoe to drill through a composite bridge plug set inside the previously installed 9 5/8-in. casing.
- Run and ream the liner to total depth (TD) during full or partial losses, and maintain the ability to set the hydraulic hanger and release the running tool before cementing the liner and setting the liner-top packer.

Our Approach

- The operator selected the Weatherford premium hydraulic-rotating (WPHR) liner hanger and the R running tool with hydraulically released mechanical lock for the application.
- The Weatherford team ran the 7- × 9 5/8-in. WPHR liner hanger with a Defyer® drill shoe to drill out a composite bridge plug set at 6,942 ft (2,116 m).
- The team pumped drilling fluid at a rate of 106 gal/min (401 L/min). At the same time, the drill shoe applied 5,000 to 6,000 lb/ft torque (6,779 to 8,135 N·m) at 50 rpm to drill out the bridge plug in less than 1 hour.
- The team continued to run the liner in partial losses while pumping mud with a density of 4.7-lb/gal (1,761-kg/m³) into the annulus by means of the injection line for pressurized mud cap drilling.
- The R running tool mitigated any risk of premature release while drilling through the bridge plug or reaming to the bottom.
- Mechanical locks in the WTSP5 integral packer and WPHR liner hanger ensured that nothing prematurely set prior to reaching TD.
- The team reamed the liner to a shoe depth of 8,652 ft (2,637 m) with the top of the liner at 6,703 ft (2,043 m).
- The team set the liner at TD and released the running tool. Then they cemented the liner and set the liner-top packer.
- The job was completed in one trip without incurring losses or incidents.

Value to Client

- The liner-hanger solution enabled the operator to efficiently drill out the bridge plug in the 9 5/8-in. casing, deploy the liner to TD, and meet primary cementing objectives—all in one trip.



The cone and slips section make the WPHR liner hanger well suited for reaming and drilldown operations.

LOCATION

Malaysia

WELL TYPE

Offshore, exploratory

RIG TYPE

Jackup

LINER SIZE

7 × 9-5/8 in.

WELL DEPTH

8,652 ft (2,637 m)

PRODUCTS/SERVICES

- WPHR liner hanger
- R running tool with hydraulically released mechanical lock
- WTSP5 liner-top packer
- 7- × 8 1/2-in. Defyer drill shoe

