PERFORMANCE BULLETIN

DSI PBL® BYPASS SYSTEM has been activated for pumping loss control material above the rotary steering system for a major Chinese offshore operator on its first PBL job in Bohai Bay

Challenge

In September 2021, a major Chinese national offshore operator in Bohai Bay awarded its first circulating subcontract to DSI for the provision of a PBL bypass system. A faulty zone at 2,400m well depth was anticipated prior to drilling, and an 8-1/4" PBL bypass system was added to the rotary steering system BHA to allow pumping LCM while drilling, eliminating the need for additional trips, greatly reducing the drilling cost in comparison to the traditional methods.

Solution

Subsequent to a detailed review of the well data together with the operator's engineering team, DSI was able to produce optimized PBL technical parameters making it fit for the purpose intended. DSI's professional training team have conducted a number of PBL service and operational training courses for the benefit of the operator's drilling and downhole tools teams with the aim of optimizing the rig crew costs under the prevailing COVID-related restrictive conditions.

Execution

Mud losses were observed while drilling at 3,163m MD, and the operator decided to pull back and activated the PBL above 2,400m MD to pump the LCM. With the activation ball on the seat, the LCM was completely diverted to the annulus, preventing any LCM passing through the BHA below the PBL, hence preserving the integrity of the RSS and the expensive LWD tools. The pump rate of up to 1,110 GPM was achieved while displacing the LCM through the PBL ensuring efficient wellbore clean-up. With the losses finally controlled, the PBL was successfully de-activated, and the operator was able to safely resume the drilling activity.

Conclusion & Recommendation

- Successful activation and de-activation of the PBL eliminated the need for two additional trips, saving around 30 hours of offshore rig time.
- The high flow rate allowed fast LCM pumping, reducing the well control risks
- High flow rate also promoted a better wellbore clean-up, improving the ROP
- The unique feature of PBL designed to ensure that the sleeve returns to the closed position while the pumps are off, minimizes the U-tubing effect or exposure to well control issues.

BYPASS SYSTEMS
BY DSI