

## PBL® Bypass System Used with Fast Dart in High-Fluid Weight, Hole Angle, and Depth for a Malaysian Wellbore Clean-up Application.



### Challenge

An operator in Malaysia needed to circulate at a high flow rate to clean out a high-pressure/high-temperature (HP/HT) (350°F BHT) well. Using standard wellbore clean-up tools, they were unable to complete this using 16 ppg mud weight at a depth of 13,000 ft at the top of the 7-in. liner, and at the 5,000 ft depth in one run.

### Solution

The DSI team recommended positioning a 6 3/4-in. PBL® Multiple Activation Bypass Tool within the wellbore clean-up string.

The PBL® ports were opened to allow a high flow rate (up to 1,000 gpm) at multiple depths in a single run.

### Execution

To successfully complete the operation, the following steps were completed:

- RIH to position the PBL® below the 10 3/4-in. x 9 -in. crossover, at a depth of 5,159 feet.
- Drop the PBL® 2-in. Fast Dart, in 16 ppg mud weight, in a hole angle of 65.6 degrees to open the PBL® ports and bring the flow rate up to ~1,000 gpm.
- Close the PBL® ports by dropping 2 x steel deactivation balls to the PBL®.
- Continue to RIH to a depth of 13,135 feet, to the top of the 7-in. liner.
- Drop a second Fast Dart to open the PBL® ports to once again bring the flow rate up to ~ 1,000 gpm.
- Circulate 3 x bottoms up at this position and flow rate.
- Close the PBL® ports by dropping 2 x steel deactivation balls to the PBL®.

### Results & Benefits

The operation was successfully completed by activating the PBL® at two locations in the extreme depth and high-fluid weight and temperature well. This was the only method available to allow for adequate cleaning and without making separate trips.

The PBL® Fast Dart allowed for the activation of the PBL®, even in the heavy mud weight and hole angle.

The PBL® is ideally suited for a wellbore clean-up operation and should be placed above the wellbore clean-up assembly to offer multiple activation cleanout cycles, in extreme conditions.

