



**The PBL<sup>®</sup> Multiple Activation Bypass System pumped coarse LCM multiple times to cure losses, resulting in substantial cost saving for an operator in Pakistan.**

## Challenge

A major E&P company in Pakistan was drilling a well in the northern Punjab region. While drilling the 18 ½-inch section through a sticky shale formation, from 6,529 to 6,619 ft, no returns were observed.

The operator pumped 100 bbl of LCM pill through the bit with no change observed. An additional three LCM pills were tried. There was still no improvement due to the LCM concentration limitations pumping through the BHA and drill bit.

The operator decided to POOH and run the DSI PBL<sup>®</sup> Sub in the BHA. During POOH, several tight spots were also observed, but with proper back-reaming, the operator managed to safely POOH. The static and dynamic losses during the operation were recorded as an average 10 and 25 bbl/hr

## Solution

**A 9 ½-inch OD PBL<sup>®</sup> Multiple Activation Bypass System, with extended catcher sub, was incorporated into the next drilling BHA.**

## Conclusion & Recommendation

By adding the DSI PBL<sup>®</sup> Multiple Activation Bypass System to the BHA, the operator was able to manage losses in a timely manner, substantially reducing rig time and expensive drilling fluid costs. As a result, the operator implemented the PBL<sup>®</sup> as a standard component for the operations in the field.

## Execution

The PBL<sup>®</sup> Sub was activated using the activation dart to pump the 100 bbl LCM pill with a concentration of 200 ppb including calcium carbonate chips. After displacing two LCM pills through the Sub, mud loss was reduced to 46 bbl/hr. The third LCM pill, with 210 ppb concentration, was displaced and the losses were decreased to zero.

The PBL<sup>®</sup> Sub was pulled up to 6,075 ft above the LCM height and four hrs of soaking time was allowed. Static and dynamic losses were checked a

### Due to the use of the PBL<sup>®</sup> Subs:

- Losses were cured in a timely manner with high-concentration LCM pills.
- No additional trip was required to run with open-ended DP.
- The section was completed on time and did not compromise the AFE.
- High-concentration LCM pills were used.
- No part of the BHA below the PBL<sup>®</sup> Sub was contaminated.
- Calcium carbonate flakes were successfully pumped with LCM.
- Extended catcher allowed additional cycles to be run with the dart activation.

