With the increasing number of horizontal or directional drilling, it is very important to select the mud motors, because it has to meet the torque requirements of the bit, the flow rates for hole cleaning, the maximum standpipe or pump pressure or even materials for high temperature application. Furthermore, these days the modern drilling performance requires the high torque or high RPMs, especially, bits such as PDCs require more torque. Therefore, the high performance power sections can deliver the high torque and brought increased ROP and less drill string wear. In this way, short bit-to-bend motor become more attractive, more drilling contractor and motor manufacturers are designing them. Short bit-to bend motors can reduce the stresses on many components when operating during directional drilling as compared to the conventional length motor with the same degree of bend.

Initially, we analysed the stresses acting on the drill string when the bit is at TD and adjustments to the drill pipe are made based on the analysis. Next, the torque and drag was evaluated at depth other than TD. Finally, the hydraulics analysis performed for the hole cleaning improvement.

References
J. Greer and R. Ide, Short Bit-To-Bend Motors and Horizontal Drilling, SPE Eastern Regional Meeting, Kentucky, USA, 3-5 October, 2012.