



## CASE HISTORY

Unconventional Resources

Multi-Set Straddle Packers

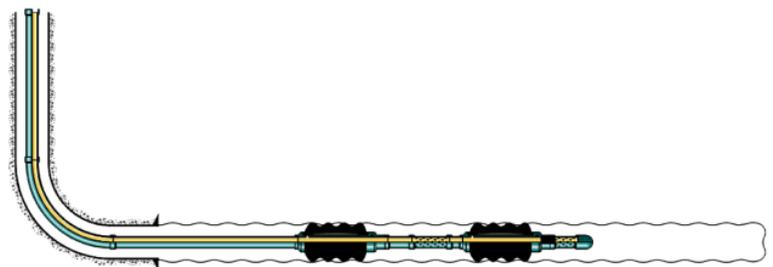
### NEW POSIFRAC STRADDLE SYSTEM FOR OPEN HOLE FRAC TREATMENT

Innovative Approach to Multi-Stage Fracture Treatments Reduces Well Cost by 50%



**CHALLENGE:** The Bakken formation in Canada has been a very active area for horizontal drilling. The wells are completed so that a multi-stage fracture treatment can be performed. The typical approach has been to use mechanical packers and ball activated frac sleeves. While this worked initially, once remediation was required, the ball sleeves had to be milled out, which left a reduced ID. The reduced ID limited the type of equipment that could be used for interventions. Also there was no way to ensure that all the mechanical packers were set and providing the required annular isolation to perform a multi-stage fracture treatment. Many operators changed to a cemented liner completion and use coil tubing to jet cut holes and pump away fracture treatments. Although this approach has had success, unknowns, such as the quality of the cement, the flow area to pump through, and potentially blocking natural flowing fractured areas with cement makes it less efficient. The best scenario would be a retrievable multi-stage fracture system.

**SOLUTION:** TAM International modified existing proven inflatable straddle technology to be used in a sand fracture treatment. Flow loop testing with sand laden fracture fluid was performed to determine the best anti-erosion coatings to be used on components used in the straddle system. The typical numbers used to-date are a maximum pump rate of 1.3 m<sup>3</sup>/min (8.18 bbl/min), 800 kg/m<sup>3</sup> (49.94 lb/ft) for proppant, and a total of 250 tons (254 metric tones) of proppant. This system reduces cost by eliminating the rig time associated with the liner and cement. The system also provides full access to the drilled open hole diameter which makes interventions and clean-up easier, reducing both risk and cost. The entire wellbore can contribute to flow with the naturally fractured or sweet spots contributing to the fractured production. There is no limit to the number of stages that can be treated and no limitations for the development of a re-fracture program.



*The PosiFrac Straddle System is designed for multiple fracturing treatments in one run.*

**RESULT AND BENEFIT:** US\$ 325,000

Typical well cost construction for a liner well architecture is US\$750,000. By eliminating the liner system, the average well cost was reduced by US\$325,000.