Case Study SlicFrac®

SlicFrac used to Divert Acid Treatment for Improved Production

Case Study No. 6211

DETAILS:

Location: North Sea

Operation Depth: 10,000' - 24,000' MD

Well Orientation: Horizontal

POD Type: Bio-Rez® Lo Degradable PODs (150°F)

Type of Operation: Acid Stimulation

A customer in the North Sea was interested in testing the use of diverter to effectively restimulate all perforations with an acid treatment (28% HCl), to eliminate the near-wellbore damage and effects of scale in the perforations. Based on well location and offshore environmental requirements, the use of biodegradable material was desirable, along with a quick dissolution rate and no negative impact at topside process facilities to ensure minimal interruption to the production of the treated wellbores.

Thru Tubing Solutions' SlicFrac diverter system was used for a pilot project of 19 wells, to establish best practices, evaluate product efficiency and monitor wellbore production improvements. Clear signs of diversion were observed in approximately 80% of the jobs. Bottom hole static temperatures (BHST) of wellbores in this field range from 220 to 250 °F. Cooldown during fluid injection was sufficient to maintain diverter integrity over the course of the treatment with low-temperature degradable pods. Once pumping ceased, pod dissolution was rapid, which allowed for a quick return to production.

SlicFrac Perf PODs were used to effectively seal off the dominant perforations between each acid cycle and divert the remainder of the treatment. ISIP was used to calculate quantity of perforations open at given phases of the treatment to confirm the efficacy of the PODs and the ability to successfully stimulate the entire wellbore.

The operator was able to achieve a significant increase in production in wells with near-wellbore damage. The operator considers the results to be a huge success and has confirmed long term use of SlicFrac Perf PODs for future acid stimulations in this field.

