

BPS Maxx valve

Background

A major operator in the Anadarko Basin was seeking to maximize the contribution from the reservoir, leaving no rock untouched as well as increasing efficiencies and minimizing risk during plug-and-perf operations.

Solution

We proposed the BPS Maxx™ valve to meet the requirements of the operator. BPS Maxx is designed for use in horizontal completions to establish injection of fluid at the toe without intervention. This feature eliminates the need for intervention using traditional tubing-conveyed perforating guns as a means of gaining access to the formation at the toe. Eliminating intervention reduces the cost and risks normally associated with these operations. Once activated, the high flow area of the BPS Maxx allows greater injection rates to support plug-and-perf or frac sleeve operations.

The BPS Maxx uses the same field-proven technology previously used in over 20,000 successful installations but with approximately three times greater flow area of our standard offering. Larger flow areas mean less risk in plugging from debris left in the well after cementing operations, and full ID through the tools eliminates the need for special wiper plugs, thereby reducing operational risks. The BPS Maxx is actuated by applying pressure from the surface of the well.

On this well, three BPS Maxx subs were installed with two casing joints in between to create the first frac stage cluster, eliminating toe initiation and pre-prep work. The large diameter of the ports reduced friction pressures through the injection ports.

Result

The BPS Maxx enabled the operator to frac the first stage with an average stimulation rate of 96 bpm at a max surface treating pressure of 8,800 psi.

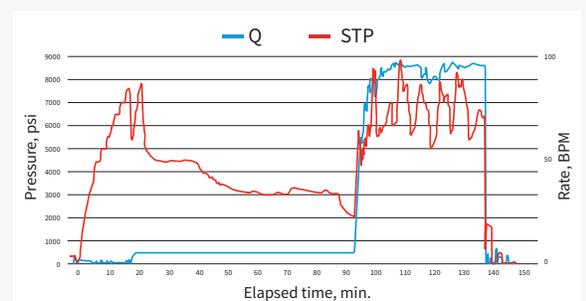
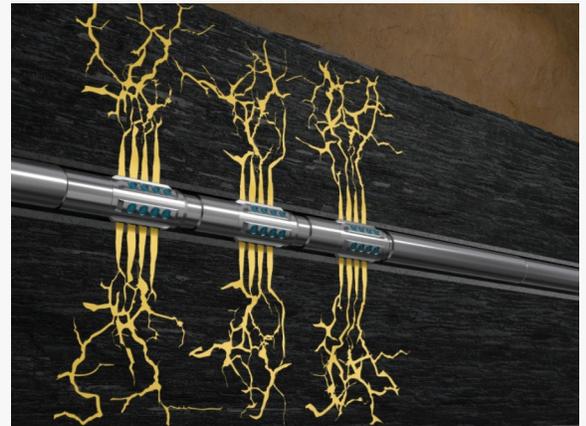
The ability to eliminate the toe initiation stage provided the operator more productive reservoir contact area. It also allowed the operator to downsize the shoe track length to the minimum, clean the wellbore from any cement stringers after stimulating the first stage, and eliminate the risk associated with plug-and-perf operations on the first stage.

We continue to be the market leader in cemented and openhole multistage fracturing technologies. For more information on our complete portfolio of multistage fracturing tools, visit www.nov.com/completiontools.

Case study facts

Location: Anadarko Basin, Kingfisher, Oklahoma

Casing: 4.5 in., 13.5 lb



Between 10 and 20 min, the BPS Maxx units were ruptured, and the operator prepared for injection.

At approximately 90 min, the pump flow rate increased to an average of 96 bbl/min due to the increased contact with the reservoir.