Operators drilling in the Bakken shales in North Dakota can use a one-trip, openhole, packer and sleeve-type system or a plug and perf method to isolate downhole stages. The packer and sleeve method is more cost-effective than the plug and perf method because of the time saved during installation and the ability to perform continuous pumping operations, but the plug and perf method allows more stages per well.

Wells fractured with multistage fracture treatments have shown an increased production rate. An operator wanted to increase the number of stages in a packer and sleeve well and asked Baker Hughes to design a system that would combine the cost-effectiveness of a packer and sleeve system with the increased number of initiation points of a plug and perf system.

Through extensive research into ball materials and redesigning the ball seats, the Baker Hughes team designed and developed a 24-stage packer and sleeve system that would combine the benefits of both isolation methods and meet the operator’s needs. The system underwent a thorough testing program that validated its performance. The patented, new ball seats allowed ratings of 8,000 psi (551 bar), 1/8-in. incremental ball sizes and increased flow rates for the smaller sizes.

The 24-stage FracPoint™ multistage fracturing system was deployed in a horizontal well where it performed flawlessly. The FracSur EX technology increased the initiation points along the wellbore as well as increasing initial production rates. Because of this success, the operator continues to use the FracPoint multistage fracturing system with new Baker Hughes technologies to enhance well completions.