AccessFrac\textsuperscript{SM} PD Service Helps Avert Loss of Well and Cuts Completion Time by Over 50%

**CHALLENGE** – The horizontal section of an Eagle Ford Shale well was drilled and cased with over 4000 ft of exposure to the reservoir. When the completion phase began the operator was unable to insert an isolation plug as it would not pass through the heel section of the lateral. A caliper log investigation indicated the casing was no longer circular but had been narrowed on the horizontal axis most likely due to tectonic movement (Figure 1). Perforating was accomplished only by using a smaller-than-normal tubing-conveyed perforating system but the operator still was unable to position isolation plugs for the planned multi-zone fracturing treatment.

The operator was faced with a high likelihood of having to plug and abandon the well if a new completion technique was not undertaken.

**SOLUTION** – Halliburton recommended AccessFrac\textsuperscript{SM} PD service to provide isolation between individual fracturing stages. This service uses new diverting technology and planned pumping schedules to help achieve more even proppant distribution (PD). With this process, each perforation cluster receives the planned amount of proppant.

The proprietary, environmentally friendly diverting material (BioVert\textsuperscript{®} agent) was placed between fracturing stages to temporarily seal the perforations just treated.

**RESULT** – During the course of 21 hours of continuous pumping, 13 frac stages were successfully placed along the lateral, treating a total of 780 perforations. Effective diversion was verified by the pressure chart and microseismic mapping (Figures 2 and 3).

Production from the well is equal to offset production. In addition, plug setting and drill-out time was eliminated, resulting in completion time being reduced by over 50%.

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**Figure 1**—Caliper log of an Eagle Ford Shale well shows that the casing in the heel of the lateral section had been flattened. The reduction in diameter was most likely due to tectonic movement. The blue color denotes under-gauge diameter. The smaller diameter made it impossible to place isolation plugs for the planned multi-stage fracturing treatment. AccessFrac PD service provided an effective solution.

**Figure 2**—The nonstop treatment covered 13 individual stages, all pumped in 21 hours. The plot showed increased average treating pressures after each diverter drop for all 13 stages. The zones came on line with an initial production (IP) equivalent to offset production.
AccessFrac℠ Service Diversion Technology

AccessFrac PD service utilizes diverter material such as BioVert® NWB agent. This unique technology provides several important benefits:

- **Completion efficiency**—It is the first chemical diverting system able to withstand the rigors of fracturing.
- **Self-removing**—After creating a temporary blockage the material will degrade entirely without need for a special solvent or additional surface operations. The degradation of the diverting agent permits flowback operations to proceed normally.
- **High environmental standard**—BioVert NWB material is sourced from the food industry yielding an extra measure of environmental protection.
- **High compatibility**—Permits choosing the fluid system that is best for the reservoir without compromising due to compatibility issues.

**For more information about how AccessFrac℠ PD service can help improve the efficiency of your multi-zone fracturing treatments, please call your local Halliburton representative or email us at stimulation@Halliburton.com.**

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