

Operator Overcomes Casing Restriction and Saves 3,280 Feet of Productive Zone

ILLUSION® HIGH-EXPANSION DISSOLVABLE FRAC PLUGS ELIMINATE COILED TUBING INTERVENTION, REDUCING RISKS, TIME AND COSTS

VACA MUERTA FORMATION, ARGENTINA

CHALLENGES

- » Potential loss of production zone caused by casing restriction
- » Increased risks and costs for intervention

SOLUTION

- » Illusion® HE dissolvable frac plug

RESULT

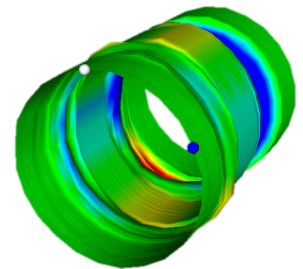
- » Completed first seven fracturing stages without issues
- » Saved 3,280 feet (1000 meters) of productive zone, approximately 35% of the lateral length
- » Eliminated coiled tubing intervention, minimizing risks, time and cost

OVERVIEW

During hydraulic fracturing operations in the Vaca Muerta formation, operators often face casing deformation issues that increase operational risks and costs, and in some cases, lead to lost production. Attempts to recover a productive zone can generate additional costs due to non-productive time, unexpected services, bottomhole assembly (BHA) losses and fishing operations.

35%

Lateral Length Recovered



A major operator in the Vaca Muerta oil field encountered a significant casing restriction near 16,404 feet (5000 meters) of a 20,013-foot (6100-meter) well with 9,514-foot (2900-meter) lateral length. To avoid the uncertainty of coiled tubing intervention and potential abandonment of stages, the operator approached Halliburton for a solution.

Halliburton recommended Illusion® High-Expansion (HE) dissolvable frac plug technology, which enabled completion of the first seven fracturing stages, without issues, saving 3,280 feet (1000 meters) of lateral length and significantly minimizing time and intervention costs.

CHALLENGE

The operator discovered a 3.62-inch diameter restriction in the 5-inch 21.4-lb/ft casing (4.126-inch inner diameter) at 16,692 feet (5088 meters) measured depth (MD). This prevented execution of the original well plan, in which plug-and-perf operations were planned with standard frac plugs larger than the restriction.

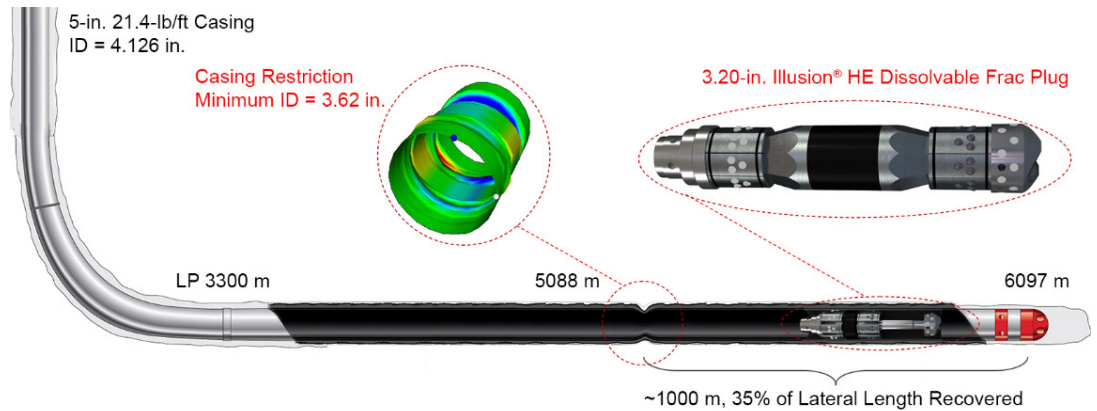
SOLUTION

Based on the operator’s expectations and previous experience in the region, Halliburton proposed the field-proven Illusion HE dissolvable frac plug. The plug design allows for use in a wider range of casing sizes, making it ideal for wellbores with casing restrictions typically impassable for standard diameter frac plugs. Additionally, this fully dissolvable plug helps eliminate the risks associated with milling a standard composite high-expansion device that requires undersize milling in a restricted environment. During the first fracturing stages, Halliburton recommended placing the 3.20-inch Illusion HE frac plug below the casing restriction, with standard 3.68-inch Illusion frac plugs above.

RESULTS

Halliburton deployed the Illusion frac plugs during the first seven fracturing stages, with all plugs passing through the restricted section successfully to provide reliable isolation during plug-and-perf operations. The Halliburton solution maximized the operator’s asset value by saving 3,280 feet (1000 meters) of productive zone, approximately 35% of lateral length.

The fully dissolvable plug also minimized risks, time and costs associated with coiled tubing intervention, allowing the operator to perform minimally invasive well cleanup using an undersized mill, without compromising the casing thickness and integrity.



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