

# Dissolvable Frac Plug Technology Exceeds Operator Expectations in Challenging Environment

## ILLUSION® PRESTIGE DISSOLVABLE FRAC PLUGS PROVIDE A PROVEN RELIABLE, EFFICIENT OPTION TO THE MARKET

SOUTHTEXAS

### CHALLENGES

- » Highly temperature-dependent environment
- » Well costs
- » Cleanout with pressure anomalies
- » Limited facilities
- » Limited plug provider options

### SOLUTIONS

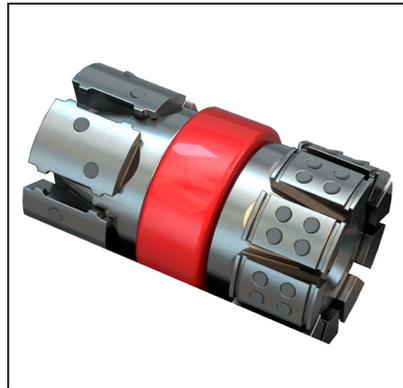
Illusion® Prestige dissolvable frac plug

- » Ball in place capability
- » Anti-preset feature
- » Surface efficiency
- » Predictable dissolution
- » True 10,000-psi performance

### RESULTS

- » Validated technology, with proven performance during fracturing operations
- » Successfully pulled out of hole after encountering a casing restriction
- » Less than one minute average mill time
- » Met and exceeded all customer requirements

### OVERVIEW



With the release of the Illusion® Prestige dissolvable frac plug, Halliburton recognized an opportunity to expand the available options in the challenging Austin Chalk formation. The team deployed the Illusion Prestige frac plugs in a trial well that consisted of 5 ½-inch, 23-lb/ft casing run to a measured depth of 16,000 feet (4877 meters), a true vertical depth of 10,500 feet (3200 meters) and bottomhole static temperature of 270°F. Freshwater was used to pump the plugs to depth. This successful trial run highlighted the plug's ability to provide efficient and reliable runs, ball action and quick cleanout. In addition, the robust

design with anti-preset feature allowed for pulling a plug out of hole after encountering a casing restriction.

Illusion Prestige dissolvable technology proved it can provide operators a reliable alternative to degradable plastic materials, with consistent performance during fracturing operations.

### CHALLENGES

The Austin Chalk formation presents unique challenges, such as limited flowback facilities and pressure anomalies that can create difficulties during cleanouts. Such challenges necessitate a frac plug that requires minimal intervention.

### SOLUTIONS

Designed for increased efficiency and reliability, the bottom-set Illusion Prestige frac plug predictably dissolves in well environments after reliably holding pressure during fracturing operations, which leads to faster and easier wellbore cleanouts. The surface makeup process takes minimal time, and the robust design with anti-preset feature reduces risks while running in hole to enable faster run-in speeds.

### RESULTS

The Illusion® Prestige frac plug proved its ability to improve operational efficiency, with its quick and easy makeup on surface and ability to run the ball in place while reliably getting to depth. Predictable dissolution helped minimize intervention during cleanout, with less than one minute average mill time. In addition, the plug's anti-preset feature and robust design helped ensure the plug remained intact when it encountered a restriction while running in hole. The plug was successfully pulled out of hole with only a mark on the muleshoe observed.

Performance exceeded expectations and the operator is now running Illusion Prestige frac plugs 100%. This successful performance proved the Illusion Prestige frac plug can provide operators a reliable dissolvable plug option not only in the difficult Austin Chalk formation but all of North America Land.

 <p><b>01</b> <i>Validated technology, proven performance</i></p>	
 <p><b>02</b> <i>Increased reliability with bottom-set design</i></p>	
 <p><b>03</b> <i>Ball-in-place design increased efficiencies in both dissolution and time/fluid reduction</i></p>	
 <p><b>04</b> <i>Met customer expectations with consistent performance during fracturing operations</i></p>	

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