

Head-to-Head Frac Plug Comparison in Northern Colorado

CHALLENGE:

An operator in Northern Colorado's Rocky Mountain region wanted to move from using a conventional plug design to one that was more efficient and would address the following:

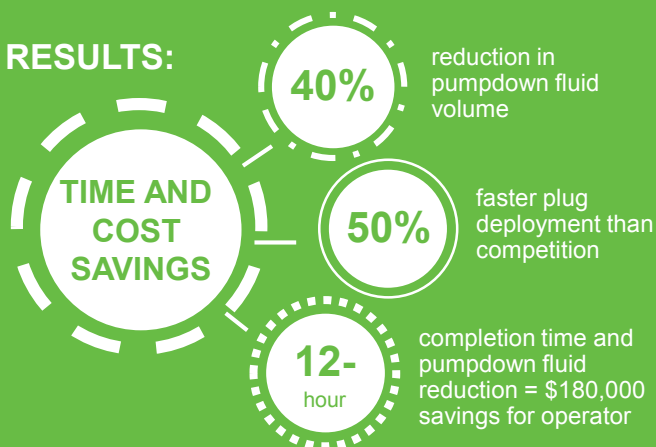
- Reduce plug presets.
- Reduce fluid usage getting plug-n-perf gun strings downhole.
- Reduce excessive material on drillout (common to longer plugs).

RECOMMENDATION:

Downhole Technology proposed using the Boss Hog® ball drop frac plug system with several risk- and cost-reducing features including the following:

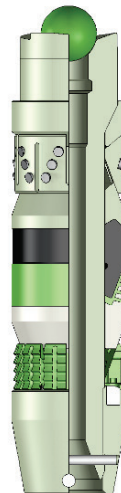
- One-piece composite top slip constructed to avoid breakage and presets constructed of carbide-free and ceramic-free mild steel buttons that hold firm, prevent casing damage, and drill out easier than competitor plugs.
- The HELISEAL® fluid control system captures fluid while the plug is pumped down, enabling plugs to be run at speeds up to 900 ft/min while pumping at just 8 bbl/min, even in long lateral sections. Boss Hog plugs use 40% less water to deploy plugs and perforating guns than competitive plug designs.
- The one-piece lower slip, manufactured from a proprietary cast blend, holds more than 15,000 psi pressure, is segmented to make it easy and quick to drill out with minimal casing damage, and prevents presets.

RESULTS:



Operator Saves \$180,000 in Run Time and Fluid Volume

Boss Hog® frac plug



- Casing = **5.5" #20**
- True Vertical Depths = **7,000'**
- Total Depths = **12,000' +**
- Total Number of Plugs Used = **29**
- Static Temperature = **250°F**
- Max Pressure = **8,000 psi**

Benefits

The technologically evolved design of the Boss Hog® frac plug allows operators to:

- Reduce over-flushing during pump down.
- Maintain seal during entire stage frac.
- Eliminate premature settings during pumpdown.
- Reduce debris and drill out times.