



## Newpark Fluids Systems Achieves Frictional Pressures Maintenance At 120+ bbl/min

High Pumping Rates Required for Efficient Placement of Proppant into Longer Laterals Require Engineered High-Shear Resistant Friction Reducers

CHALLENGE	SOLUTIONS	RESULT
<ul style="list-style-type: none"> <li>As pump rate increases and laterals get longer, operators increasingly fight friction reducer degradation by increasing loadings of less efficient FRs; This is needed because necessary FR polymers are being sheared apart.</li> </ul>	<ul style="list-style-type: none"> <li>Highly-specialized engineered Friction Reducer (FR) that is not sensitive to shear, even with long residence time. In this instance, NewStim FR 715.</li> </ul>	<ul style="list-style-type: none"> <li>The specialized FR was able to maintain shear stability and provide optimal friction reduction at lower loading rates than the incumbent.</li> </ul>

South Texas

### OVERVIEW

An operator in South Texas conducting significant in-field completions had a requirement to conduct fracturing operations at 120 bbls/min. Newpark Fluids Systems was given the opportunity to replace the incumbent stimulation fluids service provider, whose product was struggling to control the pumping pressures at these rates. The operator's objectives involved reducing surface treating pressure while placing less polymer into formation.

### CHALLENGE

Proppant placement in long laterals is convenient using viscosified fluids. However, operators focused on minimizing conductivity loss prefer to use standard slickwater systems, as opposed to viscosified fluids. Proppant carrying capacity with these thin fluids is limited. One solution to efficiently place proppant into longer laterals is to pump the proppant laden fluids at extremely high rates (> 100 bbls/min).

However, at these pump rates friction along the pipe walls of 5.5" casing climbs quickly. The operator's previous Friction Reducer (FR) was able to control the pressures while pumping at 100 bbls/min, but when pump rates were increased, even an increase in FR dosage struggled to maintain pumping pressures below critical levels.



### SOLUTION

The operator requested Newpark to pump NewStim FR 715, which is a polyacrylamide-based polymer engineered to be high shear stable at low dosage levels. The goal was to be able to control frictional pumping pressures at rates as high as 120 bbls/min, carrying 2.0 ppg of 100 mesh proppant at low FR dosage rates. The intention was to avoid any potential polymer-related loss of conductivity within the proppant pack being placed.



## RESULTS

Newpark was able to effectively design, manufacture, and deliver a more economical product. NewStim FR 715 was able to be pumped at 120+ bbl/min at lower loadings, and lower treating pressures than the incumbent. The critical treating pressures on these wells was 10,500 psi and at no time during the job did the treating pressures rise above 9,500 psi. The operator deemed that the NewStim FR 715 met their design specification and saved them time and money by allowing them to reach max pumping rate efficiently without incurring any Non-Productive time (NPT).

