

# Nviros™ Water-Based Drilling Fluid Helps Lower Drilling Cost-Per-Lateral-Foot by 63%, Reducing Well Costs by Over \$100k, Successfully Delivering Highest Step-Out Ratio Wells Ever in Texas

“Thanks to Newpark’s industry-leading technology, fluids-focused expertise & operational experience, this challenging 2 well campaign was successfully delivered on schedule and below cost”

Isaac Reese, VP of Operations - McGonagill, Lambert, and Bay 

CHALLENGE	SOLUTION	RESULT
<ul style="list-style-type: none"> <li>• Drilling fluids solution for 10,000-15,000’ lateral wells at less than 4,000’ TVD</li> <li>• High step out ratios</li> <li>• Effectively manage extended-reach lateral torque</li> <li>• Avoid the use of traditional oil-based drilling fluid (OBM) if possible</li> </ul>	<ul style="list-style-type: none"> <li>• Extensive laboratory testing to identify a water-based drilling fluid (WBM) solution</li> <li>• Nviros™ water-based drilling fluid system - an enhanced formulation of the industry-leading Evolution® system</li> </ul>	<ul style="list-style-type: none"> <li>• Saved over \$100k vs. the traditional OBM solution</li> <li>• Drilling cost-per-lateral-foot reduced from an average of \$447 to \$164, a saving of over 63%</li> <li>• Successfully drilled the two highest step-out ratio wells ever in Texas</li> </ul>

## OVERVIEW

In the Brazos River area of North Central Texas, an operator was faced with the challenge of drilling 10,000-15,000’ lateral wells at TVDs of 3,800-4,800’. Their objective was to use an alternative drilling fluid to the traditional oil-based drilling fluid (OBM), primarily to reduce their cost-per-lateral-foot drilled.

Newpark was identified as the drilling fluid partner based on past performance, deep-domain fluids technical expertise, and extensive operational experience.

## CHALLENGE

An innovative well profile of a 10,000’+ lateral drilled at less than 4,000’ TVD, designed by VP of Operations – Isaac Reese with McGonagill, Lambert and Bay, presented a number of challenges due to the high step out ratio and the requirement to manage extended-reach lateral torque.

The operator also challenged Newpark to prove the use of OBM was not necessary for drilling extended-reach laterals.

## SOLUTION

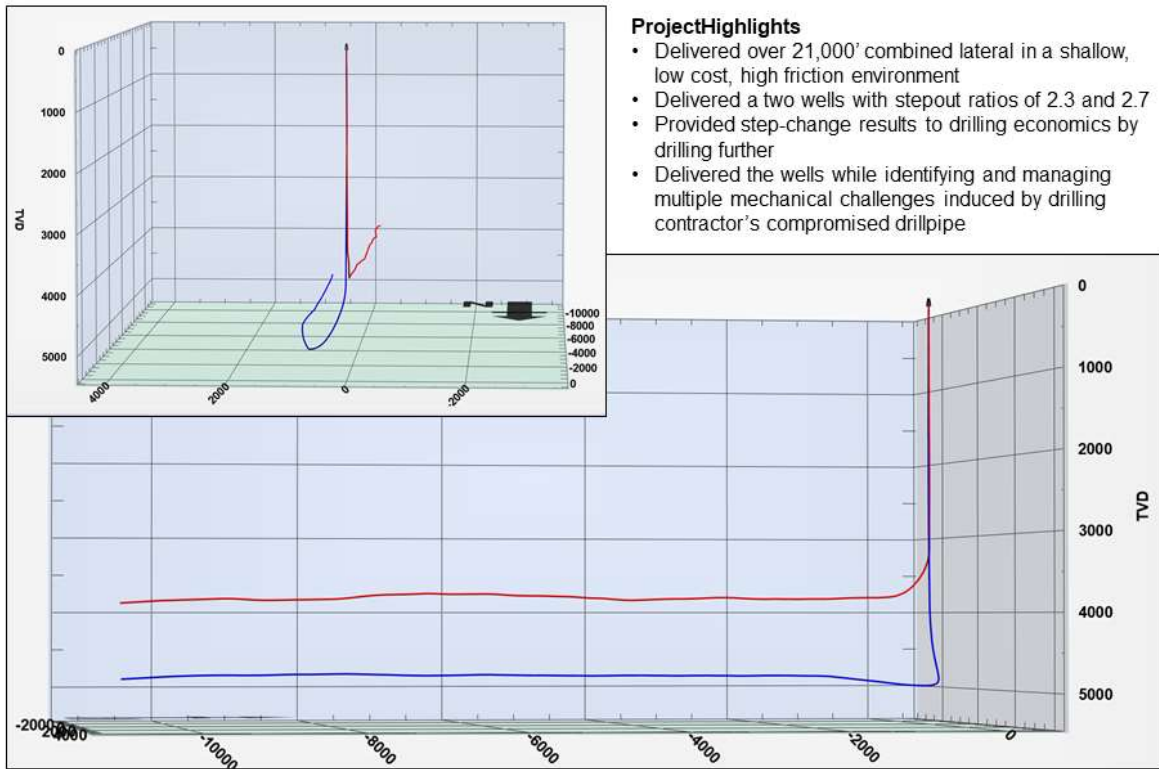
Newpark conducted extensive laboratory testing to identify a solution that met the challenging objectives and was approved for use by the operator.



The decision was made to utilize the Nviro<sup>™</sup> water-based drilling fluid system, which is an enhanced formulation of Newpark's industry-leading Evolution<sup>®</sup> drilling fluid system incorporating Ntegral<sup>™</sup> polymers together with Evolube<sup>®</sup> G lubricant at 1-2% concentration.

## RESULTS

### Well Snapshots



Implementing the Nviro water-based drilling fluid system, the operator successfully drilled and ran casing on the **two highest step-out ratio wells ever drilled in Texas** (2.3 and 2.7).

The operator **saved over \$100,000** by using the Nviro system instead of a traditional OBM. This included savings from disposal costs, OBM logistics, base-fluid costs, motor realign fees, and pit cleaning.

**Environmental footprint and carbon emissions significantly reduced** with the use of water-based drilling fluid.

Effective **torque and drag management** allowed for drilling 10,000'+ laterals.

The operator was also able to **access more of the reservoir with two wells than with the previous four wells combined**.

Drilling cost-per-lateral-foot were reduced from an average of \$447 to an average of \$164, **a savings of over 63%**, including a record low drilling cost-per-lateral-foot of \$154 (see chart below):

# Case History

