



Drilling Fluids Management Expertise and Proactive Focus on Efficiency Drives Down Fluids Cost-Per-Foot by 33% while Reducing Overall Drilling Time, New Mexico Delaware Basin

Newpark’s expertise, experience and state-of-the art technologies allowed the Operator to save time and cost, exceeding their objectives on the first 2 wells in a long-term campaign.

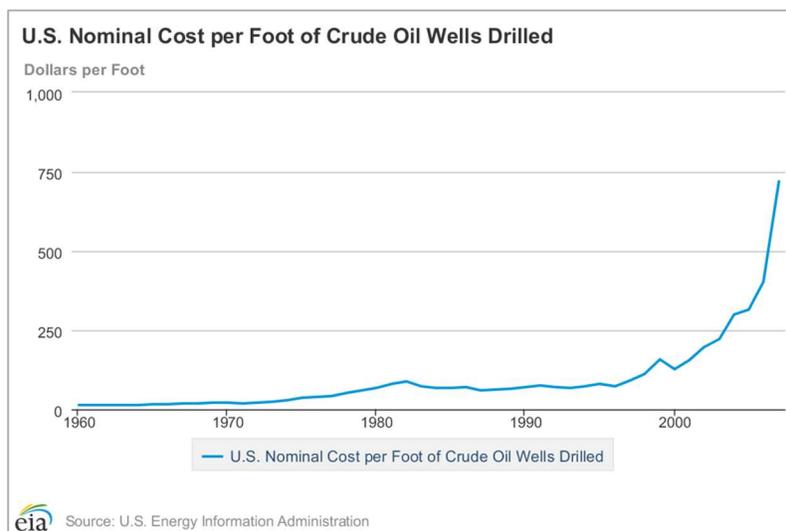
CHALLENGE	SOLUTION	RESULT
<ul style="list-style-type: none"> • Drilling Fluids cost-per-foot were averaging \$5.50 in the area, the Operator’s objective was to see a reduction • Drill a 10,000’ lateral well and provide a stable wellbore • Reduce time from Spud-to-TD while reducing overall costs 	<ul style="list-style-type: none"> • Standard direct-emulsion mud (intermediate) and OptiDrill™ invert-emulsion oil-based mud (lateral) with cost efficient NEX™ products • ClearTrack™ Hydraulics Fluids Simulator • Focus on proactively driving efficiency 	<ul style="list-style-type: none"> • Reduction in Drilling Fluids cost-per-foot from \$5.50 to \$4.75 on 1st well, then to \$3.88 on 2nd well • Spud-to-TD reduced to 13.5 days • Wells completed with drilling fluids cost below Authority for Expenditure (AFE)

OVERVIEW

In the Delaware Basin region of New Mexico, the average cost-per-foot of drilling fluids has been stable at around \$5.50. The operator’s objective was to find drilling fluids efficiencies to reduce their overall costs, while at the same time delivering a trouble-free well.

Previous successful experience guided the operator to choose Newpark as their fluids partner to accomplish the goals and objectives.

The chart below shows how drilling cost-per-foot on US Land has risen dramatically over the past several decades:





CHALLENGE

The main drilling objective specified drilling a 10,000' Wolfcamp lateral well and provide a stable wellbore in both the intermediate and lateral sections.

The challenge was unique due to the potential for losses and problems in the well, as had been experienced on similar offset wells in the area.

In addition, the operator wanted to reduce both the cost-per-foot of the drilling fluids and the overall time from spud to Total Depth (TD).

SOLUTION

To achieve the operator's objective of delivering a safe and cost-effective well, Newpark selected standard direct-emulsion mud (for the intermediate section) and the widely proven OptiDrill™ invert-emulsion oil-based mud (for the lateral section).

Prior to starting the project, Newpark modeled the expected drilling parameters with the ClearTrack™ Hydraulics Fluids Simulator. Using the ECD, ECD+ and cuttings transport efficiency features of the software, the fluid formulations were designed to mitigate Non-Productive Time (NPT).

Newpark specialists also formulated the fluids system with components from the cost-efficient NEX™ range to further improve the project economics.

In preparation for the drilling campaign, Newpark carefully assembled a multi-region project management team with a total focus on driving efficiency, putting in place processes to proactively manage the fluids program.

Extensive experience and expertise ensured the Newpark team used the ClearTrack software to monitor and verify efficient hole-cleaning, taking care to manage well pressure to avoid inducing fluid losses.

During the drilling phase, the Newpark team leveraged their extensive experience in the area, together with ClearTrack software modelling, to ensure thorough hole cleaning without creating a rheological profile that would cause ECD to exceed the formation fracture gradient.

RESULTS

The first two wells in the long-term drilling campaign were evaluated. In the first well, Newpark successfully managed to reduce the operator's cost-per-foot of drilling fluids from the area average of \$5.50 down to \$4.75. This represents a cost reduction of approximately 14%.

The results from the second well were even more impressive than the first well, reducing the drilling fluids cost-per-foot to a remarkable \$3.68, which represents a cost reduction of 33% over the area average.

The efficiencies and performance advantage delivered by Newpark ensured the operator significantly underspent on the Authority for Expenditure (AFE) drilling fluids cost.

Newpark's contribution to the success of these wells also saw the overall time from spud to TD decreased to just 13.5 days.

Case History



Example of ClearTrack™ Fluids Hydraulic Modelling output:

