

Forum's P-Quip™ System Components Improve Performance and Reduce Safety Risks Compared to OEM Liner Retention System

The Challenge

An operator was drilling a complex well in West Texas, requiring mud pump liners to be changed out several times, which increased nonproductive time (NPT) and HSE risks. To help reduce downtime, improve safety and enhance drilling performance, the operator tasked its global drilling contractor with finding a quick-change liner retention system (LRS).

The contractor was also experiencing frequent liner wear plate replacement issues due to liner movement when operating at high mud pump pressures. The original equipment manufacturer (OEM) LRS was not able to apply enough force to the liner to prevent movement under extreme operating environments. As a result, the liner wear plate was being replaced every two weeks.

Because of their extensive experience and comprehensive product portfolio, Forum Energy Technologies Drilling was contacted to troubleshoot the issue and provide a quick-change LRS with the necessary retention force.

The Solution

Forum recommended its high-performance (HP) retention system with proven spring retention technology, which is part of the P-Quip™ mud pump system. The HP LRS is a direct replacement for the OEM LRS and required no modifications. The team worked closely with the drilling contractor to install the new system and provided training, operating instructions and continuous follow-up.

Once installed, the HP LRS achieved sufficient liner retention, eliminating frequent wear plate replacement. This reduced downtime and the need for expensive replacement parts, while improving performance and safety.



Forum HP Liner Retention System



OEM Liner Retention System

The Benefit

The Forum team was able to successfully meet the operator's and drilling contractor's objectives. The Forum HP LRS increased the safety and speed associated with liner changes—by almost 75% over the OEM LRS. No wear plates have been changed in more than three months (and counting) while using the P-Quip mud pump system LRS, resulting in an overall cost savings and reduced NPT.

Data points gathered over a 20-year period consistently demonstrate that using the Forum HP retention and rod system has a payback period averaging 5 months. Net present value of this system over a 10-year period is approximately \$250,000 USD. Changing pump liners can result in typical injuries such as overexertion. According to Drilling Contractor.org, the average overexertion claim is \$23,000 direct cost and indirect costs average 4 times direct costs.

The customer noted that they are pleased with the ease and functionality of the system as it eliminated the movement witnessed in the OEM LRS and has increased productivity and prolonged equipment life and integrity.