By Mark Holland, ProOne

Web Exclusive

Revolutionary Drilling Mud Additive Produces Major Time and Cost Savings

When operator after operator experiences drilling results they have never achieved or even thought possible, the reason is not a coincidence. It's real and consistent, which is why ProOne's downhole drilling lubricant technology, Xtreme Pressure Lubricant (XPL+), has rapidly become the mud additive of choice on more than 700 wells throughout North America.

The "secret sauce"? ProOne's lubricantreduces the primary and most costly problem in an entire drilling operation – friction – by more than 70-percent. More African operators will soon be able to see first-hand how this lubricant solves both time and money issues on a significant scale as ProOnecontinues expanding internationally in 2015. Distributed exclusively in North America by the National Oilwell Varco spin-off, Distribution NOW, the product is available in all oil and gas producing regions of Africa.

Why such Excitement?

To address the age-old problem of friction, the company's R&D scientists developed a positively-charged molecular structure which includes a strong ionic charge. What that does is game-changing, including:

- Fifty times the film strength of conventional lubricants
- The lubricant actually bonds to any metal on the downhole drilling equipment even when encountering extreme heat and pressure
- Solves an array of vexing drilling problems which have gone technologically unchecked for decades
- Reduces wear and increases Rate of Penetration (ROP) performance
- Reduces torque and drag by 20-50%

Both lab testing and actual case studies have proven that ProOne technology outperforms anything that has been seen in the industry. For example, one operator said they would not have been able to complete a well without this drilling mud additive. They experienced a 37-percent torque reduction, 12-percent ROP increase and drill curve time reduced by 34 hours. Additionally on this same drilling operation, two trips and two drill bits were saved, totaling more than $150,000, which culminated in a gross savings of more than $300,000 on this particular well.

An operator in New Mexico (USA) experienced a 50-percent drop in torque and 28-percent increase in ROP. Also in the USA, a California operator reduced torque by 45% and Weight on Bit (WOB) increased to 35,000 pounds. In North Dakota, an operator chalked up time

savings of 4-6 days at $90,000 per day, compared to his previous comparable well.

Recently, ProOne introduced an XPL+ companion technology, CoilPro. With all the attributes of XPL+, including a positive charge that bonds to metal and the unprecedented film strength, it specifically reduces the coefficient of friction between the coil tubing and casing. From withstanding temperatures exceeding 600-degreesF and more quickly drilling through plugs to better ensuring borehole stability, this new lubricant is compatible with all drilling fluids. Overall, this coil tubing fluid provides greatly improved drilling efficiency while keeping drilling costs much lower, regardless of the type of well drilled (vertical, inclined or horizontal). Easily dispersed, it may be added to the system either of two ways, directly into the hopper or by pre-mixing, and is proven environmentally-friendly.

Beyond Torque and ROP

Reductions in torque and increases in ROP are only a part of the benefits that ProOne's lubricant provides. For example, since the lubricant's considerable friction reduction saves bits from having to be replaced too frequently, it is not unusual to save more than one bit on each well drilled, saving as much as $75,000 to $120,000 for the drill bit.

And, of course, drilling crews are quite familiar with excessive trips which occur for any number of reasons. Generally accepted industry estimates put one trip's cost as much as a full day up to $90,000. By reducing friction system-wide, the problems which may contribute to a trip occurring can be greatly reduced on an ongoing basis across a company's drilling sites. Issues or problems typically encountered downhole also include stuck pipe, long horizontals, deviated wells, spiraled holes, doglegs and top drive overheating.

The company's lubrication technology has also been shown to substantially reduce wear on mud motors and pumps, greatly reduce hook load, allow the crew to slide liner more quickly, drill the curve in 50-percent less time,drillstraighter verticals with less corkscrewing and set casing faster than with any other lubricant or method.As an added benefit, the XPL+ attraction to any metal virtually also ensures less corrosion on any piece of equipment with which it comes into contact.

Revising the Cost Scenario

When the number crunchers aligned the mud additive's capabilities with typical savings, the figures are impressive.

For example, by saving wear and tear on mud motors and drill bits, along with reducing the necessity for drill string repair and problems with hard banding, savings from $10,000-100,000 can be written into the financials. By increasing ROP, reducing excessive trips and alleviating disposal costs, operators can tally $100,000-500,000 in money they do not have to spend per well.

Operators have also found that their savings can be even more substantial with this drilling fluid treatment. Crews can conduct daily drilling with a lower risk of twist-off, they can help free stuck pipe much more expeditiously and in many cases can not only finish the well but also prevent collapse of the hole – for a per well savings of a million dollars or more.

Coming Full Circle with 100% Biodegradation

For all its attributes in time/cost savings which enhance an operator's balance sheet, one other key quality enhances the company's environmental profile: it is 100-percent biodegradable.According to third party studies, thisdownhole drilling fluid treatment is "ultimately biodegradable."In everyday terms, that means that toxic OBM can be replaced with "green" WBM at 1/3 of the cost.Additionally, it is completely non-toxic to marine life, thus appropriate for offshore drilling applications or environmentally sensitive areas. With this revolutionary technology, oil and gas operators in Africa can take a major step toward greater time/cost efficiencies through a lubricant technology that is revolutionizing downhole drilling.

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