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Halliburton Introduces Intervention Technology to Help Restore Productivity of Mature Assets

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Halliburton PropStop(SM) service helps control an escalating industry problem by combining proven fracture treatment chemicals with a unique coiled-tubing method.

HOUSTON--(BUSINESS WIRE)--May 1, 2006-- The Halliburton (NYSE:HAL) Production Optimization Division announced its most recent technology -- PropStop(SM) service -- is designed to help address the declining production rates often seen in fractured wells in mature assets. Proppant flowback and formation fines production cost operators millions of dollars every year through loss of production and expensive equipment damage. Wells experiencing these problems require remediation ranging from routine wellbore cleanouts, to complete workovers, to expensive artificial lift equipment repairs. PropStop service extends an already broad and unique range of offerings designed to mitigate proppant and fines production. When applied, PropStop service helps maintain highly conductive fractures and long-term productivity.

"Production of proppant and formation material plagues the industry and is an ongoing deterrent to optimized production as well as the culprit behind much of the repair and maintenance required during the life of a well," said Jim Prestidge, vice president, Halliburton Production Optimization Division. "Halliburton scientists analyzed the sources of breakdown and proppant flowback to deliver this reliable, efficient and safe solution. The PropStop process is not a mere treatment of a symptom. PropStop service is a remedy for the fundamental causes of a pervasive industry problem that is escalating as production assets mature."

Based on market knowledge and data reported by Spears and Associates, more than 25 percent of the global utilization of coiled tubing is for cleaning out wellbores and amounts to \$475 million annually, not counting lost production. In wells requiring artificial lift, the resulting damage from fines and proppant production to submersible and surface pumps can require shutting in the well and making repairs as frequently as every three to four months.

A vast majority of the material cleaned out and causing damage consists of fracturing proppant. PropStop service makes it possible to treat the proppant inside the fractures in the wellbore to stabilize the pack and help control proppant flowback regardless of the number of years since the initial fracturing treatment. In addition, the stabilized proppant pack helps control the influx of formation material into the wellbore, a common problem that occurs as the formation around the fracture becomes unstable over time.

For example, in an XTO Energy well in Arkansas, excessive fracture sand production from a 2003 treatment was damaging the electric submersible pump (ESP), resulting in costly workovers and pump repairs as well as loss of production. In fact, the issue of sand production in this area has become so severe as to shut down production. This particular well was identified due to its maintenance schedule of workover rig clean out every three months. The PropStop service treatment successfully controlled the proppant flowback and increased gas production. Total value to XTO Energy will be \$220,000 to \$400,000 annually.

Propping agent, usually sand, is placed inside the fracture, propping it open so that hydrocarbons can flow to the wellbore and subsequently be produced to the surface. This proppant will often flow back with produced fluids into the wellbore, sometimes covering producible intervals, damaging completion and production equipment and reducing production. The concurrent production of formation sand just worsens the situation.

PropStop service uses a special chemical formulation that coats individual grains of proppant, locking them in place and at the same time not affecting or reducing the conductivity of the proppant pack. PropStop service is a coiled-tubing deployed, single-trip, rigless intervention service that requires no isolation packers, reducing time, cost and risk of a conventional workover. Additionally, it does not disturb existing completions. Depending on well conditions, the PropStop agent is placed into the proppant pack by the pulsing action of either Halliburton's Pulsonix(R)-TF or DeepWave(SM) service technology.

To date, Halliburton has provided primary and remedial stimulation services to help control both proppant flowback and the intrusion of formation material into the wellbore. CoalStim(R) service, for example, is a post-fracturing damage removal system designed specifically for coalbed methane completions. Halliburton's SandWedge(R) conductivity enhancement service is a primary treatment service that enhances proppant pack conductivity for improved long-term production. Halliburton's Expedite(R) service was developed to improve proppant flowback control and to help reduce time to production flowing fracture treatments. SandTrap(SM) service helps remediate sand production from high permeability zones.

Halliburton, founded in 1919, is one of the world's largest providers of products and services to the petroleum and energy industries. The company serves its customers with a broad range of products and services through its Energy Services Group and KBR. Visit the company's World Wide Web site at www.halliburton.com.

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