

QUIK-FREE[®] NS Spotting Fluid

North Sea Compliant Spotting Fluid with Fast-Acting QUIK-FREE[®] Technology for Oil- and Water-Based Mud Systems

Rapid Action When It's Needed Most

When stuck pipe occurs, every minute saved can increase the chance that the pipe will be freed successfully. Every minute lost can increase the risk that the operation will end up as a fishing job. The newly developed spotting fluid for North Sea applications can be mixed and placed rapidly because it requires none of the additives typically associated with an invert emulsion spotting fluid. QUIK-FREE[®] NS spotting fluid shows significant results 4-6 hours after it is placed downhole. Other spotting fluids can require up to 24 hours of "soak time."

OSPAR Compliant Materials

Based upon our proven QUIK-FREE[®] spotting fluid technology, the newly developed QUIK-FREE NS product is composed entirely of OSlo and PARis Convention (OSPAR) compliant materials.

How QUIK-FREE NS spotting fluid works to help free differentially stuck pipe:

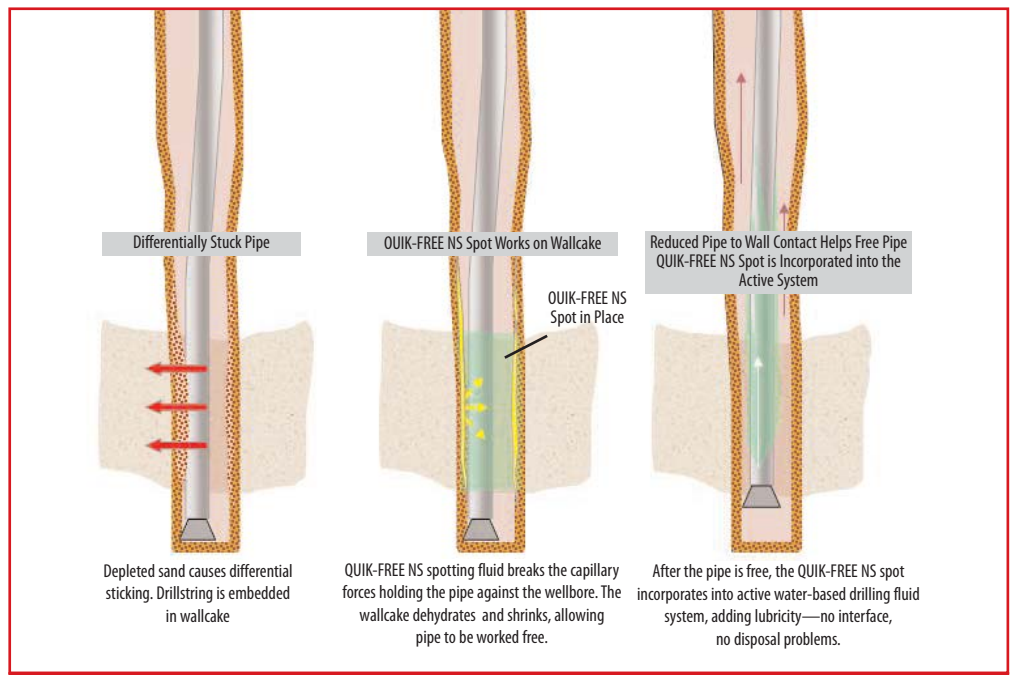
1. Breaks the capillary forces that hold the drillstring against the wellbore wall.
2. Penetrates and dehydrates the wall cake.
3. Reduces the contact area between pipe and wall.
4. Reduces the forces needed to work the pipe free.
5. Increases drillstring lubricity throughout stuck zone.



14.0 ppg lime mud



14.0-ppg lime mud treated with QUIK-FREE NS spotting fluid



No Spacer, No Disposal Issues

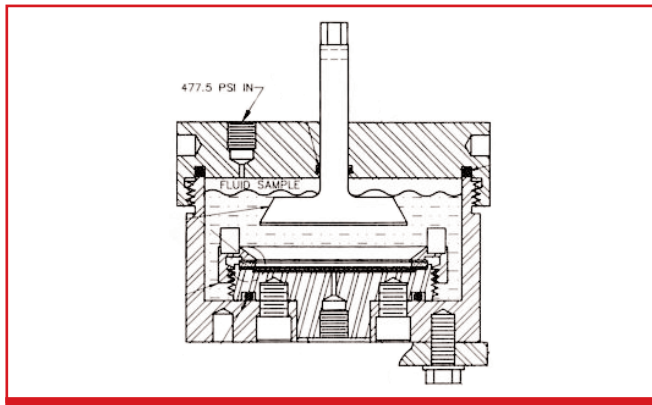
QUIK-FREE NS spotting fluid is compatible with fresh and salt water drilling fluids and can be incorporated into the active mud system without adverse effects on any of the properties.

Improved Lubricity

After freeing the pipe, incorporating QUIK-FREE NS spotting fluid into the active system can increase lubricity as much as 35% and help prevent further sticking problems.

Rapid Mixing Time

- **Unweighted spot (8.8 ppg):** Requires only a few minutes of agitation in the slug pit prior to pumping.
- **Weighted spot:** One sack of GELTONE® V viscosifier per 13 bbl tote of QUIK-FREE NS yields sufficient viscosity to achieve any fluid density required.



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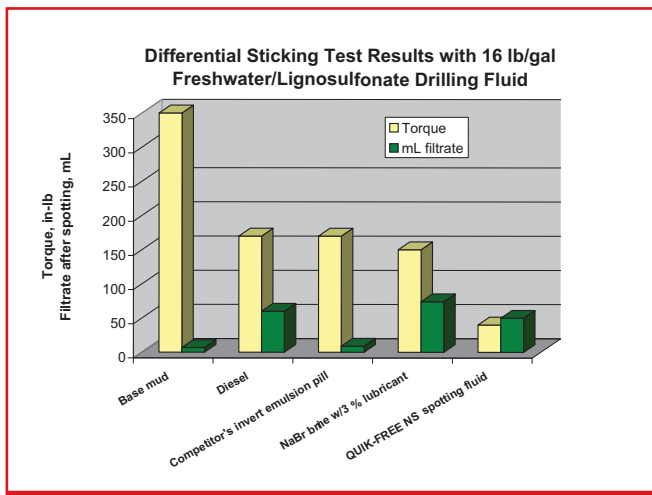
Stuck Pipe Relief

QUIK-FREE NS spotting fluid technology provided the easiest separation of metal from wallcake in a laboratory evaluation of numerous stuck pipe remedies. The Fann® Model 21150 Differential Sticking Tester was used to test the cake-breaking ability of single-phase and invert emulsion fluids. After forming a filter cake under pressure on the face of the metal disk, spotting fluids were applied and the torque to turn the disk was measured. The QUIK-FREE NS fluid eliminated the sticking, reducing the torque by over 85%.

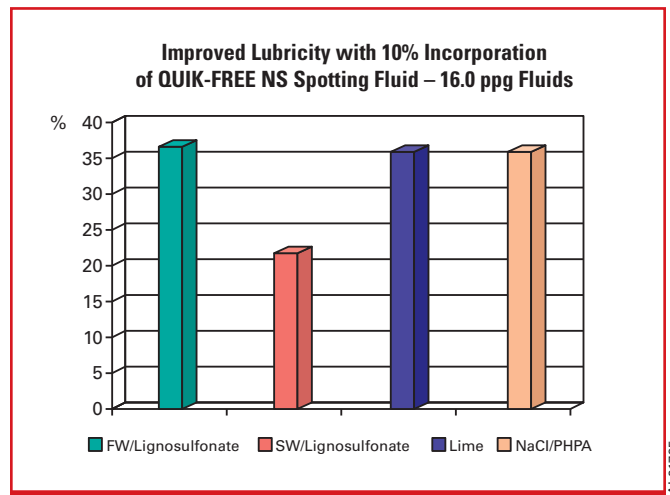


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Fann Model 21150 Differential Sticking Tester



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