In the Marcellus Shale, Halliburton's CoilSweep® Wellbore Cleaning Service accomplishes cleanup allowing acquisition of high quality production logging data.

OVERVIEW

Cleaning sand and debris from large diameter, deviated, or horizontal wellbores can be problematic. Especially if horizontal wells have been previously stimulated utilizing the plug-and-perf technique. These wells often have plug debris from drillouts, as well as sand/proppant on the low side of the wellbore from the actual stimulation treatment or from flowback. If the well cleaning prior to logging is not done properly, logging tools can be severely damaged, and acquisition of accurate production logging data can be compromised.

Recently in the Marcellus Shale, Halliburton employed detailed pre-job planning sessions with the operator, the e-line tractor provider, and their own teams to make sure their CoilSweep Wellbore Cleaning Service would not only provide a clean wellbore within the horizontal they were assigned, but also that the service would do it without damage or compromise.

These detailed pre-job collaboration sessions helped ensure the casing would be free of debris that could cause issues. Halliburton's plan proposed a run on coil tubing with the CoilSweep technology to remove sand and lighter debris. This would then be followed by a run with a Venturi basket to remove the heavier debris such as plug parts and the like.

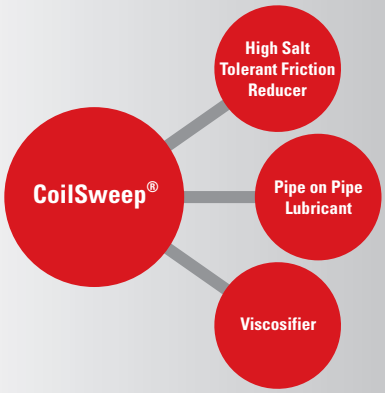
The plan was executed flawlessly. The CoilSweep technology performed the cleanup and provided extremely high quality, valuable data for the operator with minimal appreciable damage to the production logging tool string. The job was executed with zero HSE incidents and zero NPT.

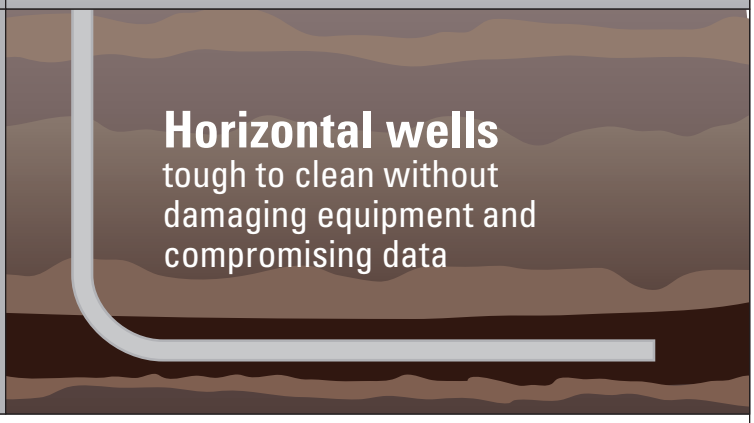
CHALLENGE	SOLUTION	RESULTS
• Horizontal well stimulated with plug-and-perf technique • Sand/proppant on lower side of wellbore • Avoid equipment damage • Maintain uncompromised data	• Up-front engineering via detailed multi-team meetings • CoilSweep technology initially run with coiled tubing • Run with Venturi basket to remove heavier debris	• Zero HSE incidents and zero NPT • Clean wellbore achieved • Six successful production logging passes conducted with high quality data recorded • Only minimal appreciable damage to production logging toolstrings

A CASE STUDY: *Well cleanout achieved allowing acquisition of high quality production logging data*

Special nozzles and spacing promote **turbulence** around bottomhole assembly

Venturi Basket used to remove **heavier debris** such as plug parts





Horizontal wells
tough to clean without damaging equipment and compromising data

CoilSweep Service combines coiled tubing expertise and fluid technology for optimum cleaning efficiency.

CoilSweep Service addresses the problems associated with cleaning sand and debris from large diameter, deviated, or horizontal wellbores. This service provides more efficient cleanouts, higher returned permeability, and better economy than previous approaches. It is also capable of gelling any clear fluid for optimum rheology, and it requires less time on location.

CoilSweep Service is a three-part engineered customized approach.

The CoilSweep Service tool can help provide optimum hole cleaning. With a design based on understanding the different mechanics associated with deviated and horizontal wells, the wash nozzle can provide optimum cleaning efficiency for wiper trips.

CoilSweep Service fluids address critical factors including carrying ability, friction pressures, and minimizing formation damage–especially important when using pre-hydrated polymers.

InSite® for Well Intervention software helps engineer the job design. It models pump pressures, flow rates, velocity profiles, predicted bed growth, and equivalent circulation densities, for both foamed and conventional fluids.

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