



Halliburton CleanWell® Solutions

**ADVANCED CLEANOUT SOLUTIONS FOR
INCREASED COMPLETION EFFICIENCY**

HALLIBURTON



CleanWell® Solutions

MAXIMIZE EFFICIENCY & ASSET VALUE

Our integrated, engineered wellbore cleanout solution effectively cleans your well, preparing it for completion while minimizing rig time and waste fluids.

OPTIMIZED DESIGN & SOLUTION

Halliburton CleanWell® Solutions addresses the entire operation. We gather and analyze well data and rig layout to help create a custom solution comprising spacers and pills, along with a surface filtration system. Our mechanical cleanup tool configuration is selected based on each well's unique design. Our software includes advanced fluid interface modeling capabilities, enabling customized pill and spacer design. This integrated solution provides operators with a tailored wellbore clean-out design.

By incorporating our proven and systematic processes, we deliver an optimum solution to maximize the efficiency of your cleanup operation to help you reduce operating costs and minimize non-productive time for your completion.

WORLD-CLASS PERFORMANCE

By collaborating with customers every step of the way, we are able to continuously refine our software modeling systems to design the optimum wellbore clean-up solution. Being one step ahead means quick response times on the rig, along with increased production integrity and reduced costs.

It doesn't stop there, though. Halliburton provides an extensive post-job report that details all operations completed during the wellbore cleanup phase, captures lessons learned, and offers recommendations for future operations. Recognizing the achievements of each task and adopting enhancements help us ensure that we are meeting and exceeding the key performance indicators for each project.

WHAT SETS US APART

Not only do CleanWell® tools allow multiple runs to be combined into a single-trip, but our latest generation also boasts the largest inner diameter, resulting in optimized hydraulics and debris removal. When coupled with our customized chemistry, the result is an industry-leading cleanout solution. At surface, Halliburton provides custom-built filtration units capable of achieving twice the flow rate of standard systems.

If an issue is ever identified, our problem resolution process helps ensure that the root cause is identified and presented to the customer as soon as possible. Together, we will plan and respond until a solution has been identified and implemented.

An Integrated Approach that Cuts Costs and Risks

Did you know that up to 30% of the non-productive time (NPT) during the well completion phase is directly related to debris left in the wellbore after drilling? Wellbore debris presents a major risk to the well and completion operations, making it imperative to have a robust solution for wellbore cleanup before completing the well. Debris can be a major contributor to incidents, including:

- » Reservoir damage, which can inhibit production and injection rates
- » Failed equipment runs, which can cause delays and NPT
- » Contaminated fluids, which can contribute to lost time and environmental incidents

Halliburton CleanWell® Solutions comprises the latest generation of filtration services, wellbore cleanup fluids, mechanical wellbore cleaning tools, and optimized software modeling to protect production, prolong the life of the well, and help maximize productivity.

**Reduces
NPT
UP TO
30%**



Why Halliburton?

Halliburton CleanWell Solutions effectively cleans your well in preparation for completion. As the market leader in deep water, we help customers achieve high standards of wellbore cleanliness while minimizing rig time and waste fluid.

- » Engineering expertise and software
- » Single-trip tool systems
- » Customized suite of BaraKlean® cleanup pills
- » BaraClear™ filtration units with flow rates of 30–37 bpm – double the rate available with standard units
- » Integrated design and operations that help provide increased efficiency
- » Customized solutions for well and installation requirements

We help enable a smooth transition from drilling to completion operations by quickly and efficiently executing displacement programs that are designed on sound principles, equipment, tools, and chemical cleaners with proven performance and operation.

Proven Technologies Delivering Results

INTEGRATED WELLBORE CLEANUP SOLUTION HELPS ELIMINATE NON-PRODUCTIVE TIME

CHALLENGES

An operator requested that Halliburton plan and execute a wellbore cleanup and displacement solution for a high-profile deepwater operation. Challenges included:

- » Water depth of 7,000 feet (2,134 meters)
- » Maximum deviation of 40 degrees
- » Displacing drilling mud to completion brine
- » Accelerating filtration rates

SOLUTIONS

Halliburton recommended CleanWell® Solutions, a comprehensive wellbore cleanup and displacement service, featuring:

- » Optimized solids-free spacer train
- » Mechanical and Hydraulic modeling software
- » 12 assemblies of CleanWell tools provided for riser and casing sections
- » BaraClear™ Hi-Flow DE filtration system

RESULTS

Operations were completed with zero health, safety, environmental, or quality issues; zero NPT; and zero cost of poor quality. Other results included:

- » Achieved accelerated filtration rates, resulting in cost savings of USD 400,000
- » Realized 60 percent time savings in preparing cleanup spacers/pills
- » Recovered approximately 500 pounds of debris
- » Satisfied well cleanliness specifications of less than 0.05 percent total suspended solids (TSS) and 15 nephelometric turbidity units (NTUs)



Mag Tech® riser magnet recovers 97.43 pounds of well debris.



9 7/8-in. Bristle Tech® brush was residue free when pulled out of hole.

**REDUCED
WELL COSTS
BY \$400K**

Sales of Halliburton products and services will be in accord solely with the terms and conditions contained in the contract between Halliburton and the customer that is applicable to the sale.

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