Drilling Software | Sophisticated Yet Simple

CleanMax®

Wellbore Cleanup Model

Overview

The first step to ensure an optimum completion is to remove leftover drilling fluid residue and casing debris. This requires the drilling mud to be displaced out with solids-free completion fluids. Completion fluid displacement involves multiple fluids sequenced in circulation. Varying flow rates, flow paths, circulation subs, multiple stages, and possible HTHP conditions make it increasingly difficult to determine pump pressures and bottomhole ECDs. Despite these significant challenges, detailed planning of the wellbore cleanup operations can help ensure both job success and well productivity.

CleanMax, the next generation of wellbore cleanup software, enables both service companies and operators to optimize their completion displacement operations. It is designed to help minimize spacer interfacing and reduce rig time, pill volumes, and filtration costs, ultimately resulting in safer operations and cleaner wellbores.

Our advanced version, CleanMax+, is designed for deepwater operations, which involve displacements using choke, kill, and boost lines and a combination of various steps. CleanMax+ predicts the temperature distributions in the wellbore by calculating the transient heat transfer between wellbore and sea water/rock formation.

Benefits

Cost Reduction

- Reduces pill volumes and filtration costs, which can significantly lower overall operational expenses during the completion phase.
- Efficient planning and execution of wellbore cleanup operations significantly reduce rig time and associated costs.

User-Friendly Interface

- Accurately predicts pump pressures, bottomhole equivalent circulating densities (ECDs), and temperature distributions, enabling optimal fluid selection, sequencing, and volumes. This minimizes waste and reduces costs.

Accurate and Comprehensive Reporting

- Accounts for the unique thermal conditions of deepwater environments, providing more precise calculations for fluid properties and behavior.

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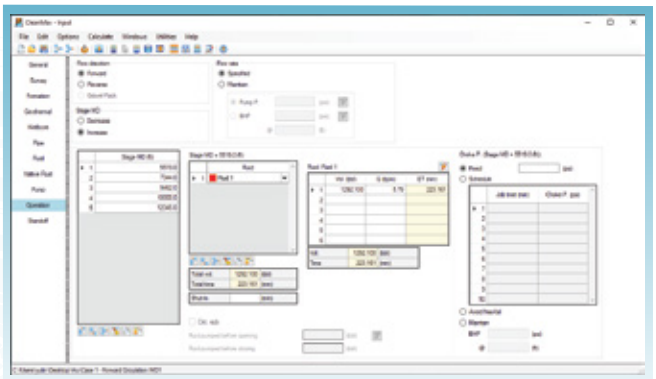
CleanMax®–Wellbore Cleanup Model

Features

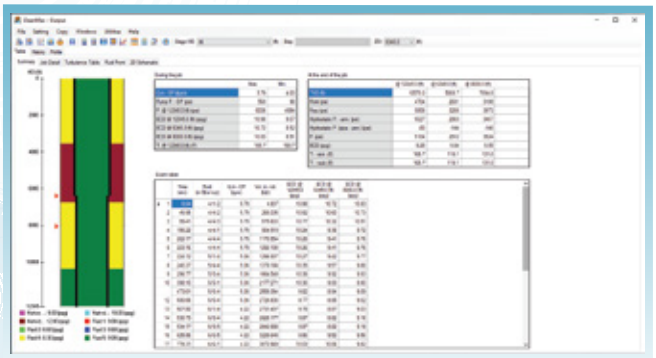
- Up to 16 operation stages for land wells
- Free-fall/back-fill (U-tubing) calculation
- ECDs/pressures at various depths vs. time
- Up to 12 fluids for each stage
- Circulating temperature prediction
- Fluid compressibility
- Pressure and temperature-dependent rheology
- Effects of pipe standoff on hydraulics
- Circulation sub and gravel pack
- Coiled tubing operation
- Displacement efficiency
- Oil field, SI, and customized units
- Spacer train design
- Flow split with 2 circulation sub

System Requirements

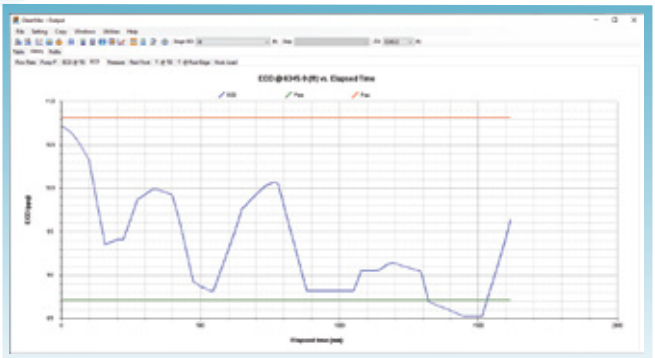
- Microsoft Windows® 10 or above
- Microsoft Office® 2016 or above
- Dual-core Intel or AMD processor, 1.4 GHz or higher. Quad-core CPU recommended. Not compatible with ARM processor
- 8 GB RAM
- 200 MB of free disk space for installation
- 1,280 x 768 display resolution



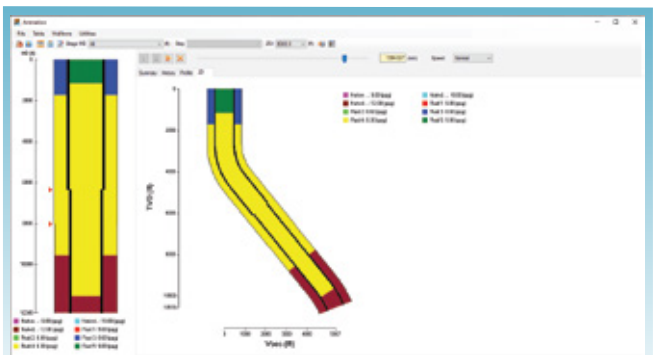
Operations



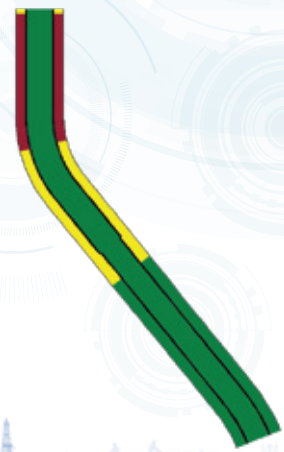
Output Summary



ECD vs. Elapsed Time



Animation



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