The Baker Hughes WellCheck™ next-generation wellbore stability analysis software provides a proven workflow to analyze wellbore stability from well logs and drilling data. Specifically, you can plan wells by calculating a critical mud weight window and a casing design that prevents wellbore failure. You can also evaluate the drilling risk for proposed well plans by calculating wellbore failure along the well trajectory for a proposed mud program, and perform quantitative risk analysis.

Strategic value in well planning
WellCheck software enables you to reliably forecast wellbore instability during drilling to mitigate wellbore collapse, tight hole, stuck pipe, excessive hole cleaning, fishing, kicks, lost circulation, formation damage, casing deformation, and sidetracks. You can drill wells with lighter mud weights, fewer casing strings, optimum wellbore trajectory, and less nonproductive time (NPT). Thus, you can optimize your well designs and define a safe operating window to maximize drilling performance, minimize drilling risk, and improve safety. You can also determine which data you need to refine by improved data collection efforts to increase confidence in the results of your wellbore stability analysis.

New technology based on existing reservoir software
WellCheck software is based on the existing Baker Hughes JewelSuite™ subsurface modeling and GMI•WellCheck™ wellbore stability analysis software. JewelSuite subsurface modeling software provides new technology for fully integrated geomodeling workflows, a modern user interface, a 3D framework, and powerful tools for collaboration and customization. JewelSuite combines technical domains, spatial scales, dimensions, and third party technology.

With WellCheck software, you can use well logs and drilling data to analyze wellbore stability. To predict mud weight, you can calculate a critical mud weight window and a casing design that prevents wellbore failure. You can also evaluate the drilling risk for proposed well plans by calculating wellbore failure along the well trajectory for a proposed mud program, and perform quantitative risk analysis.

Applications
- Offshore drilling
- Exploration wells
- High angle and extended reach wells
- Depleted reservoirs
- Underbalanced drilling
- Environmentally sensitive areas

Features and Benefits
- Complete wellbore stability analysis workflow
  - Identifies wellbore stability problems prior to drilling
  - Ensures optimum well paths
  - Identifies safe mud weights to prevent drilling problems
  - Minimizes risk and improves safety during drilling
  - Optimizes reservoir performance

- Connectivity to integrated geomechanical applications
  - Creates geomechanical models with PressCheck™ software
  - Migrates 1D well-centric models to 3D reservoir-centric models with 3D Static Geomechanics
  - Simulates full-field geomechanics with 3D Dynamic Geomechanics

- Strong foundation of GMI•WellCheck and JewelSuite
  - Offers proven technology of industry-leading GMI•WellCheck wellbore stability analysis software
  - Leverages advanced technology of JewelSuite subsurface modeling software
mud weight window and a casing design from the tolerated wellbore failure, considering pore and fracture pressure, rock mechanical properties, and kick tolerance. To check mud weight, you can calculate wellbore failure along the well trajectory from a proposed mud program, considering stress and rock mechanical properties. For quantitative risk analysis, you can calculate the probability of wellbore instability versus mud weight by incorporating the uncertainty of the input parameters.

With the workflow guide, which is the equivalent of a recipe book for geomodeling, you can access relevant workflow processes. With the audit trail, you can view information about all actions that have been performed for a project to create auditable and reproducible modeling steps. You can then re-execute these operations from the audit trail and convert them to workflow automation scripts to increase efficiency by avoiding repetitive actions. Using the programmable, scientific property calculator, you can execute user-defined geomechanical algorithms. You now have access to a comprehensive and proven geomechanical modeling workflow.

**Seamless connectivity with other applications**
You can use WellCheck software independently to analyze wellbore stability, or as part of an advanced integrated geomechanical workflow. For example, you can link WellCheck seamlessly with JewelSuite’s PressCheck™ RT software for real-time wellbore stability analysis. You can also combine WellCheck with JewelSuite’s other new geomechanics application. You can use the applications together seamlessly, exchange data between them via shared files, or drag and drop data between them. This gives you access to a full suite of powerful and easy-to-use well-centric and reservoir-centric geomechanics software.

**Learn more: contact us today**
To learn more about using WellCheck software to forecast wellbore instability during drilling to mitigate wellbore failure and formation damage, contact your Baker Hughes representative today or visit www.bakerhughes.com.