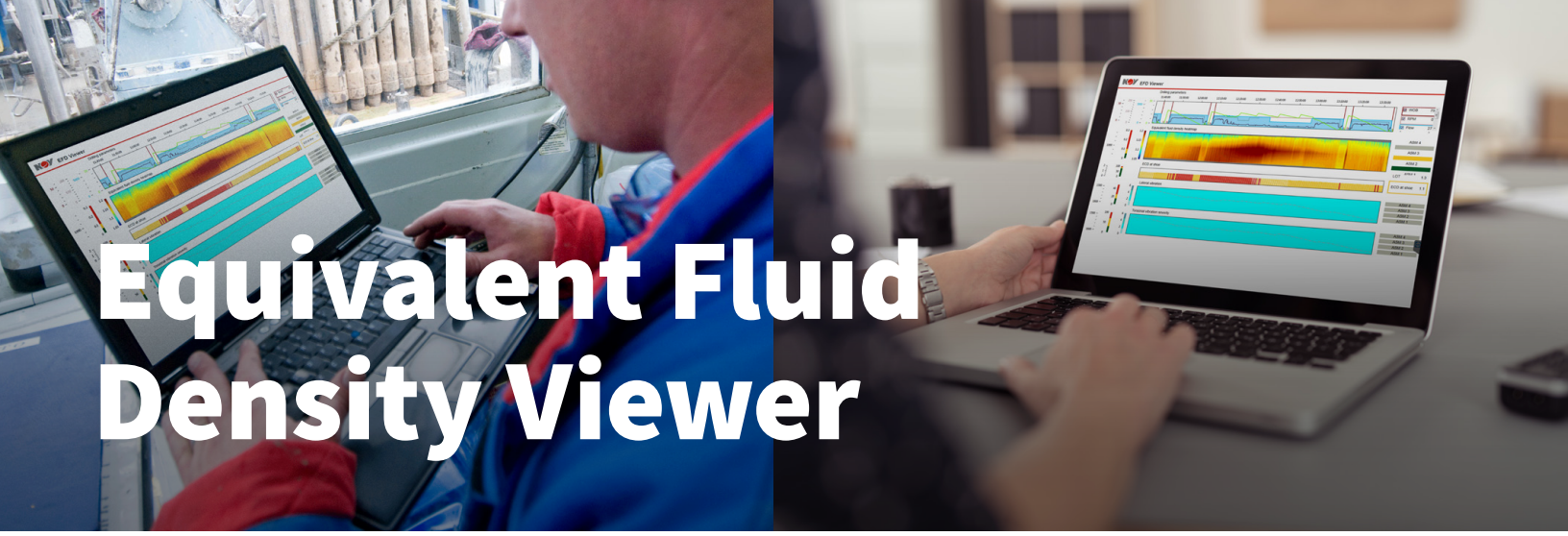

Equivalent Fluid Density Viewer

Visualize high-fidelity ASM data for both downhole pressure and drilling dynamics to reduce risk and maximize performance

Our equivalent fluid density (EFD) viewer is the visualization backbone for our BlackStream™ along-string measurement (ASM) platform. The rigsite visualization suite enables instant assessment of hole condition, wellbore pressure, and drilling system dynamics.

The EFD viewer requires a minimum of two ASM tools, which develop the time-based pressure and vibration profile for the wellbore, to be deployed at distinct locations on the IntelliServ™ wired drill pipe network. The visualization uses a color-based density gradient to provide definitive identification of changes in wellbore condition.

In today's market of increasing well complexity, the EFD viewer helps to easily identify and manage:

- Hole-cleaning issues
- Wellbore instability
- Wellbore phenomena such as breathing, circulation loss, or influx, seen before their effects ever manifest at the surface
- Drillstring dysfunction such as stick/slip or lateral vibration, including positional context within the drillstring

At the same time, the EFD viewer enables rapid, real-time assessment of the effectiveness of mitigation strategies such as:

- Sweeps
- Pipe reciprocation and rotation
- Parameter changes
- Mud program changes

The EFD viewer can reduce the overall risk in the drilling process by improving understanding of the downhole environment, allowing you to increase ROP through better use of system energy and removal of hole-cleaning-related restrictions where applicable. The EFD viewer empowers the user with a comprehensive early warning system to avoid many of drilling's most costly and hazardous events.

Contact your local NOV representative to find out how our EFD viewer can provide real-time drilling dynamics information or go to **www.nov.com/ReedHycalog.**

Features and Benefits

Instant assessment of wellbore condition and visual representation of complex data. Instantaneous feedback of environmental change and drillstring stability. Multiple measure points give a complete drillstring and wellbore picture. Large amounts of data are digested into a single, easy-to-read graphic. Torsional and lateral vibration data is given across the drillstring sensor interval.

- Supports rapid decision making
- Enables more effective management of the drilling process.
- Provides better overall system understanding compared to traditional single-point acquisition
- Delivers data in challenging hole conditions, stuck-pipe events, total losses, etc.
- Delivers critical answers when traditional methods aren't viable
- Offers a comprehensive view of the wellbore's circulating pressure profile across the entire sensor interval
- Provides calculated ECD at the casing shoe for a continuous readout
- Allows for more informed, real-time parameter management, as vibration is seen not only near the bit, but also at various points along the drillstring