

# CLEAR

## Hole cleaning and wellbore risk reduction service

### APPLICATIONS

- Extended-reach drilling and highly deviated wells
- Horizontal and multilateral wells
- Deepwater wells

### BENEFITS

- Increase safety by monitoring wellbore stability with drilling practices based on cuttings flowmeter (CFM) measurements and indicators
- Drill faster by ensuring good wellbore cleaning and condition
- Reduce NPT and stuck pipe risk by optimizing monitoring, analysis, and hole cleaning recommendations
- Optimize pill program and identify best practices for future wells

### FEATURES

- Digital measurements for improved cuttings evaluation accuracy
- Real-time dashboard with a simple, intuitive interface
- One-click report generation
- Transparency in data delivery
- Automatic alarm to signal when operational integrity of the equipment is compromised

The CLEAR\* hole cleaning and wellbore risk reduction service, delivered by Geoservices, a Schlumberger company, monitors hole cleaning effectiveness and wellbore stability. The CLEAR service is simple, reliable, and robust, providing real-time data to help the drilling team continually improve drilling performance and reduce NPT.

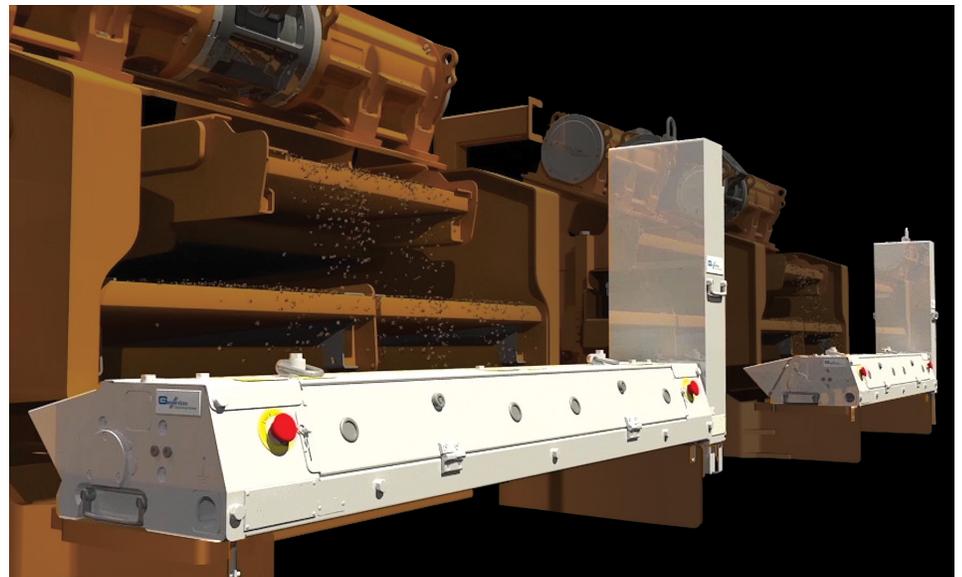
Using the CLEAR service, the weight and volume of cuttings are continuously measured at surface and compared with theoretical data to provide early detection of inadequate hole cleaning and wellbore stability issues. This helps confirm that the mud and drilling parameters are effectively removing and bringing cuttings to surface, mitigating problems such as bit balling, cuttings bed, stuck pipe, and packoff, which could lead to formation damage or loss of circulation.

The CLEAR service is compliant with the European Union's Atmosphères Explosives (ATEX) directive as well as rated by the European Conformance (CE) and by the International Electrotechnical Commission Explosive Scheme (IECEX).

### Multiple sensors and digital signals

A cuttings flowmeter (CFM), located at the end of each shale shaker, incorporates a weighing tray positioned to catch cuttings as they fall off the screen. The tray is locked in position for a fixed interval as determined by Geoservices experts and the customer. Cuttings accumulate on the tray and are weighed with strain gauges.

Digital outputs are sent to the acquisition system, which performs the computations. At the end of the adjustable preset period, the tray swings down and discharges the wet cuttings. The tray then returns to a horizontal position for the next measurement. This pneumatically controlled device is powered by the rig air supply, and the equipment does not obstruct access to the shale shakers.



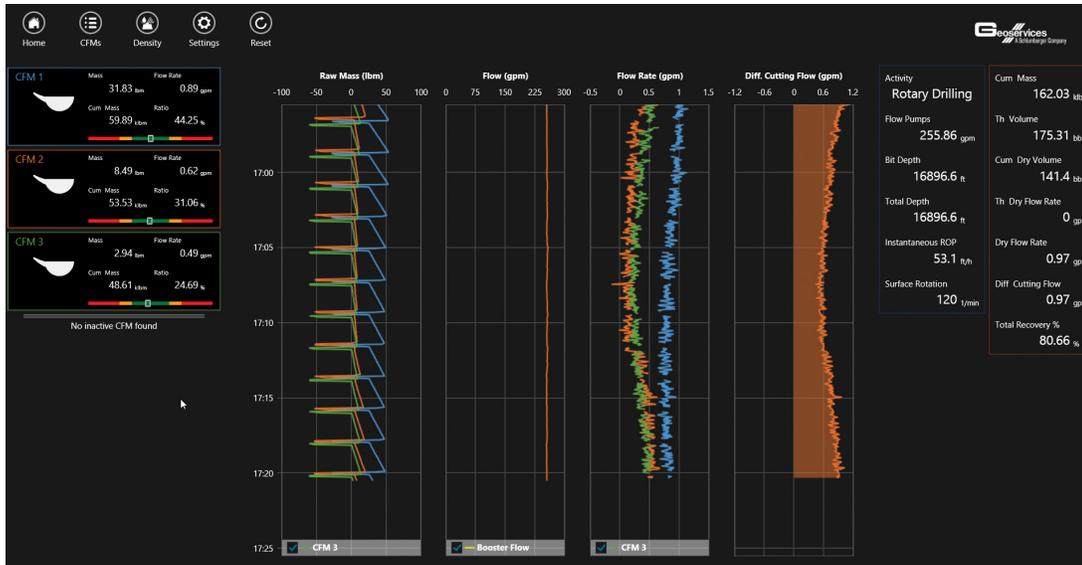
*CLEAR hole cleaning and wellbore risk reduction service.*

## Comprehensive, real-time data dashboard

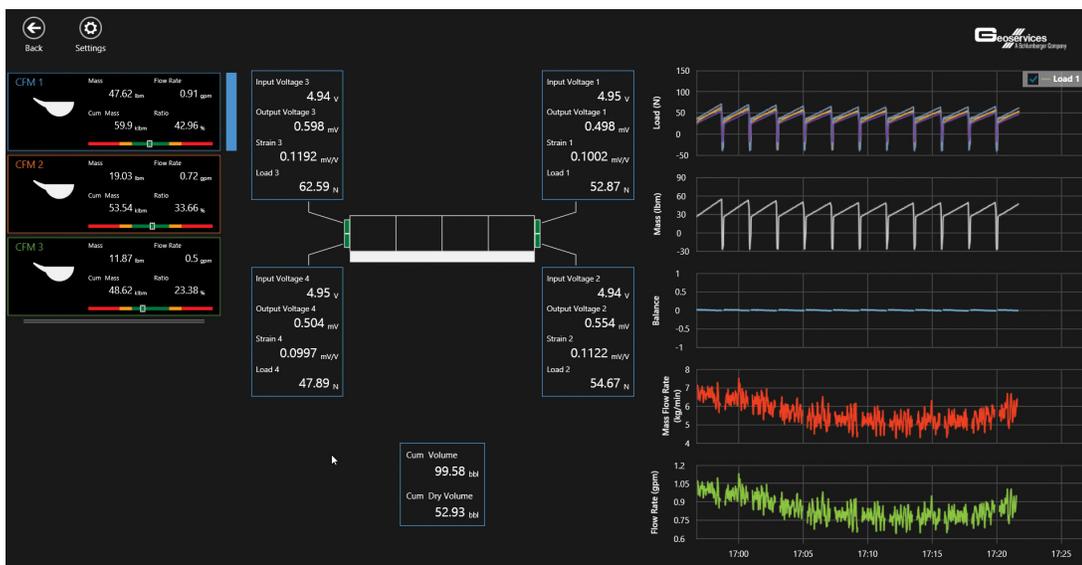
The CLEAR service provides comprehensive, real-time cuttings flow information integrated with drilling parameters, cuttings geology, drilling fluid properties, and MLWD data. Results are visually displayed through the CLEAR service dashboard, accessible online whenever and wherever it's needed—at the rigsite or at remote offices for analysis by well construction engineers. The accessibility and ease-of-use of the dashboard allows the drilling team to more efficiently assess hole cleaning effectiveness and to minimize wellbore stability risks.

## Flexible service delivery

Advanced services are available in addition to the CLEAR service dashboard and CFM equipment, providing next-level analysis through expert-level interpretation and evaluation of hole cleaning, lessons learned, and best practices for future use. Automated solutions improve data integrity and quality control as well as reduce the workforce required on the rig. With multiple service delivery options, the CLEAR service provides the flexibility to choose which services and deliverables are most appropriate for the operation.



Real-time cuttings flow information is accessible through an online dashboard at the rigsite or at remote offices.



The CLEAR service allows the drilling team to efficiently assess hole cleaning effectiveness and to minimize wellbore instability risks.