INCIPIENTUS™

Drilling muds

Early warning detection can prevent environmental disasters

Drilling fluids are used to aid the drilling of boreholes into the earth, i.e. for extracting petroleum oil. The flow behavior properties of a drilling fluid contribute to several important factors for successful drilling of oil wells, e.g. pressure control, maximizing rate of penetration, providing wellbore stability and removing cuttings from the well.

Each well is unique, making it important to be able to visualize and control the drilling fluid flow for each application. Accurately measuring the balance of the drilling fluids as a system (barrels-in versus barrels-out) provides important information to the driller and mud logger. It gives for example early warning kick detection and allows accurate monitoring of the mud transport velocity and lag times.

"Monitoring of drilling muds is critical for safe and effective drilling"

Benefits

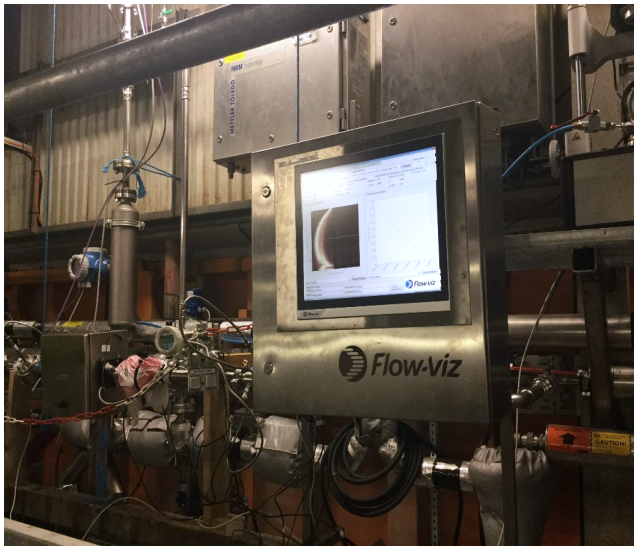
In-line measurements of drilling muds.

Process monitoring and control of drilling process.

Monitor flow rate.

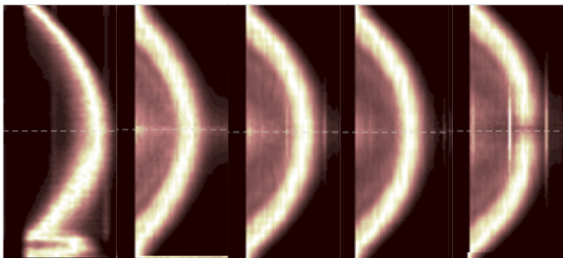
Low cost of ownership.

Easy installation.



Industrial facility

Measurements were performed in an industrial test facility under realistic environmental conditions using real-life oil-based drilling fluids.



Mud mixing process

A 2D scan of a drilling mud flowing inside a pipe. Here the flow behavior of oil-based drilling muds was monitored during the mixing process. First a base oil was used then ingredients (barite, emulsifiers, brine, LCM) were added and mixed to construct the final drilling mud composition.