

## Drilling

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Sperry Drilling services' CFM system was jointly developed by Sperry and Baroid Fluid Services. The system monitors the return mud flow at the surface and compares this to a reference curve. Every time the pumps are shut down, a profile response curve is created and compared to the reference curve. Equipment drainage, drilling fluid compressibility and drilling fluid thermal expansion are thus accounted for and deviations can be attributed to abnormal conditions. These unexpected deviations are recognized and appropriate alarms are then triggered.

The CFM service also provides an online method for distinguishing between wellbore breathing and formation influx (kick). Wellbore breathing is a phenomenon that exists when additional dynamic fluid pressures that result from circulation cause formation fractures to open and take on drilling fluid. Switching off the pumps, such as at connections, results in a reduction of pressure that allows the fluid to flow back into the wellbore, displacing mud at the surface. Alarms can be configured to distinguish between this and a kick for easy identification.

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