Detect variations in PVT properties
As part of its data acquisition program, an operator needed a reliable way to obtain PVT-quality fluid samples to be used to identify the properties of fault layers in Hibernia field, offshore Canada.

Collect representative samples with minimized drawdown
Schlumberger used the MDT tester to collect reservoir fluid samples at in situ conditions. The MDT tester was also used to monitor pressure, which made it possible to minimize drawdown during sampling. This process was critical because the reservoir pressure was close to the bubblepoint in parts of the field. During sampling, the OFA* optical fluid analyzer module of the MDT tester toolstring identified the first occurrence of reservoir fluid. This alert enabled accurately determining the pumping time required to reduce mud contamination to acceptable levels in the samples.

The openhole samples accurately portrayed conditions downhole and were used to determine reservoir fluid properties, detect variations in PVT properties with depth, and compare fluids layer by layer with those in offset wells.

Single-phase samples acquired by the MDT tester can be used to fully characterize the reservoir fluids.
Guide field development with high-quality PVT samples

PVT data from the samples were used in well-test analysis, reserves determination, material-balance calculation, and reservoir simulation. The data were also used for production allocation, meter-factor determination for production monitoring, process simulation, and regulatory reporting.

The representative in situ samples helped identify communication between fault layers to resolve critical uncertainties about reservoir continuity. The data obtained from the samples was integral to guiding planning for long-term field development.

Measuring the optical properties of the fluid downhole enables the acquisition of PVT-quality samples with known low levels of contamination.