

Compact™ Formation Tester

First in the World to Collect PVT Samples Through 3.5-in. Tubulars

Objectives

- Define the reservoir characteristics and collect three pressure, volume, and temperature (PVT) samples in each of four 4 7/8-in. (123.8-mm) sidetrack wells for a total of 12 samples. Because of the slim borehole and deviations of up to 52°, conventional sampling tools are not an option.
- Minimize the risk of stuck tools or wellbore stability issues.

Our Approach

- Weatherford proposed the unique 2.4-in. (61-mm) outside diameter Compact formation tester (MFT-D). The tool collects up to three PVT samples per run while using the inline fluid measurement module to provide saturation characteristics and optimize sample quality.
- During the planning stage, the Weatherford wireline team indicated that some sampling intervals had low mobility and that the inline pump-out module would run for up to 8 hours without tool movement. Considering that, the size of the borehole, and the 52° deviations, the team determined that through-the-pipe deployment presented the lowest risk for tool sticking. They modified standard thru-tubing logging procedure so that only the bottom part of the PVT tool string protruded from the tubular, which would allow the tool to seal on the formation.
- The team ran the MFT-D through the tubular in each of the four sidetrack wells. The tool collected three quality PVT reservoir samples for each run while defining the saturation characteristics in real time.
- The operation was completed without the tools or cable becoming stuck. The average per-job operational time was 27 hours in which the team secured three quality samples and extensive pressure data.

Value to Client

- Deployed through 3.5-in. tubulars in four 4 7/8-in. boreholes, the Weatherford MFT-D collected quality PVT samples that revealed reservoir characteristics. This industry-first application provides operators with a sampling solution that reduces rig costs and operational risk.
- The real-time data and samples provided residual oil saturation measurements that helped the operator to optimize production efficiency.



Weatherford wireline services offers a unique slim and self-centering sampling solution that reduces the risk of sticking.

LOCATION

Nizhnevartovsk, Russia

Region

Perm

FORMATION

Terrigenous Carbonate

SAMPLING DEPTHS

5,377 to 6,417 ft (1,639 to 1,956 m)

WELL DEVIATION

33° to 52°

HOLE SIZE

4 7/8 in. (123.8 mm)

PRODUCTS/SERVICES

- Wireline services
- Compact Formation Tester MFT-D

