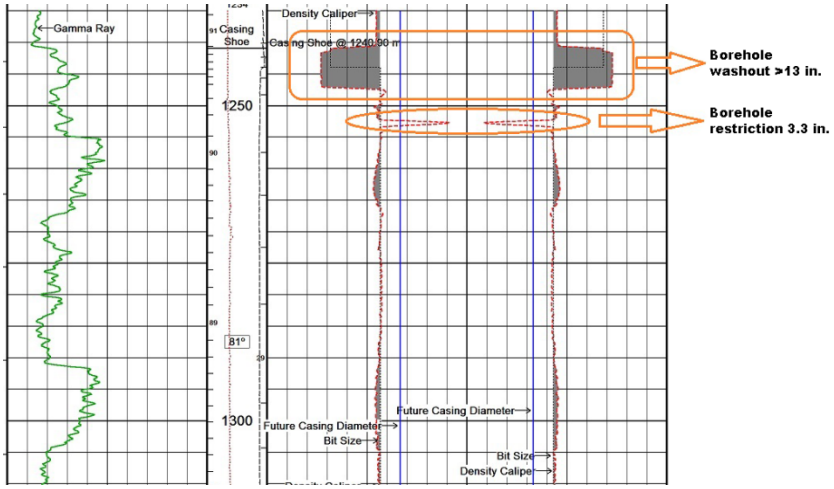
Compact™ Formation Tester and Sampler goes where standard samplers cannot



The unique design of the Compact logging suite overcame a 75% reduction in hole size.

Objectives

- Acquire formation pressures, calculate mobilities, determine gradients, and find fluid contacts
- Analyze and determine fluid composition across reservoirs of interest
- Gather reservoir fluid samples when cleanup is finished and return them to surface for transport to the PVT lab

Our Approach

- In a deviated s-shaped well, a triple combo had had difficulties downhole because of bridging and multiple overpulls while logging. The client then opted to log with the reservoir evaluation system (RES) in a second run to obtain reservoir information. The hole problems caused by washout and swelling shale restricted the borehole to a diameter of 3.3 in., which made it impossible for the 4.5 in.-OD RES to pass through and obtain the requested reservoir information.
- Because of the hole restrictions, the team attempted to run in hole using the sampling MFT-D toolstring. With a 2.4-in. OD, it is the slimmest PVT sampler on the market; therefore, our team was able to pass the problematic hole conditions on the first attempt.
- A zone that was questionable from the petrophysical logs was chosen for a pump-out operation until the true formation fluid was determined and an oil sample was collected.

LOCATION
Thailand, Phitsanulok

Field
North area

WELL TYPE
Onshore, development well

FORMATION
Sandstone and shale

HOLE SIZE AND ANGLE
Open hole 8.5 in.
Maximum deviation 36°

TEMPERATURE
246.2°F (119°C)

PRESSURE
6,200 psi (42.75 MPa)

DEPTH
Openhole interval 12,156.50 ft (3,705.3 m)

PRODUCTS/SERVICES
Compact Formation Tester With Sampling (MFT-D)
Reservoir Evaluation System (RES)
Compact Array Induction (MAI)
Compact Dual Neutron (MDN)
Compact Photo Density (MPD)

Weatherford®

Compact™ Formation Tester and Sampler goes where standard samplers cannot

Value to Client

- The Weatherford MFTD overcame the borehole restrictions and provided valuable information to aid the client's decision of whether to run the completion or to plug and abandon the well. Based on the oil sample collected, the well was completed.
- More than 24 hours of rig time was saved by forgoing a wiper trip and running the 2.40-in.-OD MFT-D.
- Use of the MFTD minimized the risk of getting stuck with a fully centered sampling string.