

Compact™ Logging Tools Conveyed on CT Through Tight Dogleg to Evaluate Heavy Oil Reservoir for a Savings of \$300,000

Objectives

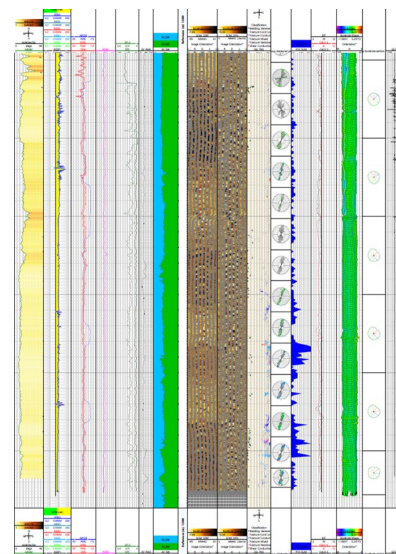
- Acquire high-quality wireline log data to characterize the reservoir and optimize the operator's drilling plan.
- Riglessly run logging tools to total depth (TD) in a short-radius horizontal heavy oil well.

Our Approach

- When other logging companies could not obtain logs in a challenging well, the operator had to rely on offset well data to guide its multiwell drilling campaign. The operator called on Weatherford to obtain wireline logs in its latest well, which was complicated by multiple factors that hindered conventional wireline operations.
- After learning that the drilling rig had already moved offsite, and that logging would be impacted by high dogleg severity, small-diameter tubing, and heavy oil in the wellbore, Weatherford logging experts teamed with their pressure pumping colleagues to devise a plan.
- Weatherford deployed a team to the wellsite with a suite of openhole logging tools, coiled-tubing (CT) unit, and crane. The crane suspended the CT gooseneck over the wellhead, and Compact logging tools were made up to the CT.
- The CT unit carefully controlled the descent of the logging toolstring through the short-radius interval and from the production tubing into the horizontal openhole section.
- The team ran the slim-hole 2 1/4-in. Compact logging tools in memory mode, and activated them upon reaching TD. The tools did not rely on conventional wireline power, but instead ran on batteries. As the CT was pulled out of the hole, the Compact quad-combo and microimager tools recorded a comprehensive suite of formation measurements.

Value to Customer

- Using CT and battery-powered logging tools, the Weatherford team was able to overcome structural and logistical problems to provide valuable data that had previously been unobtainable by other logging companies. This full suite of logging data enabled the operator to thoroughly evaluate the reservoir and refine its drilling plan.
- Rigless running and CT conveyance helped the operator to reduce the risk of stuck tools and expediently reach TD in one smooth operation, which saved approximately \$300,000 in rig time.



A full suite of openhole logs provided the operator with comprehensive data to evaluate the reservoir.

LOCATION

Tamaulipas, Mexico

WELL TYPE

- Horizontal, development well
- Openhole heavy oil producer

FORMATION

Cretaceous limestone

HOLE SIZE AND ANGLE

6-1/4 in., 90.8°

TUBING SIZE

3-1/2 in., 9.3 lb/ft

TOTAL DEPTH

2,887 ft (880 m)

PRODUCTS/SERVICES

- Wireline Services
 - Compact memory logging (CML) service
 - Compact array induction (MAI) tool
 - Compact gamma ray (MCG) tool
 - Compact dual neutron (MDN) tool
 - Compact photodensity (MPD) tool
 - Compact sonic sonde (MSS)
 - Slim Compact microimager (SCMI)
- Pressure Pumping Services
 - Coiled tubing unit
 - Bowen lubricators
 - Double stripper packer
 - Injector

