

Combo Logging and Formation Testing Efficiently Identify New Reservoir

One-run combo collects high-quality data in 40% less time to clearly distinguish new reservoir from depleted zones in the Western Desert, Egypt

CHALLENGE

Improve operational efficiency and data accuracy in a well drilled with water-base mud and high overbalance.

SOLUTION

Run PlatformExpress* integrated logging platform and PressureXpress* reservoir pressure while logging service combined in a single toolstring to reduce operational time and obtain high-quality petrophysical and pressure data.

RESULTS

Identified previously unknown reservoir and confirmed depleted zones while operating time reduced by nearly 40%.



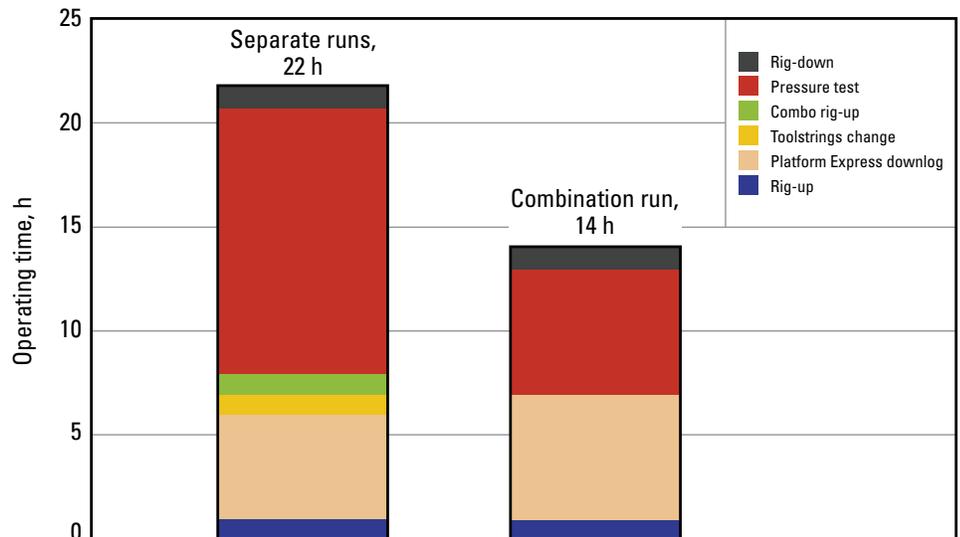
Identifying depleted zones

Agiba Petroleum Company wanted a more efficient and accurate method for identifying the depleted zones expected in a development well being drilled with water-base mud in the Western Desert of Egypt. The conventional approach was to conduct separate runs for logging and for pressure testing and collection of pressure data.

Efficiently acquiring petrophysical and pressure data

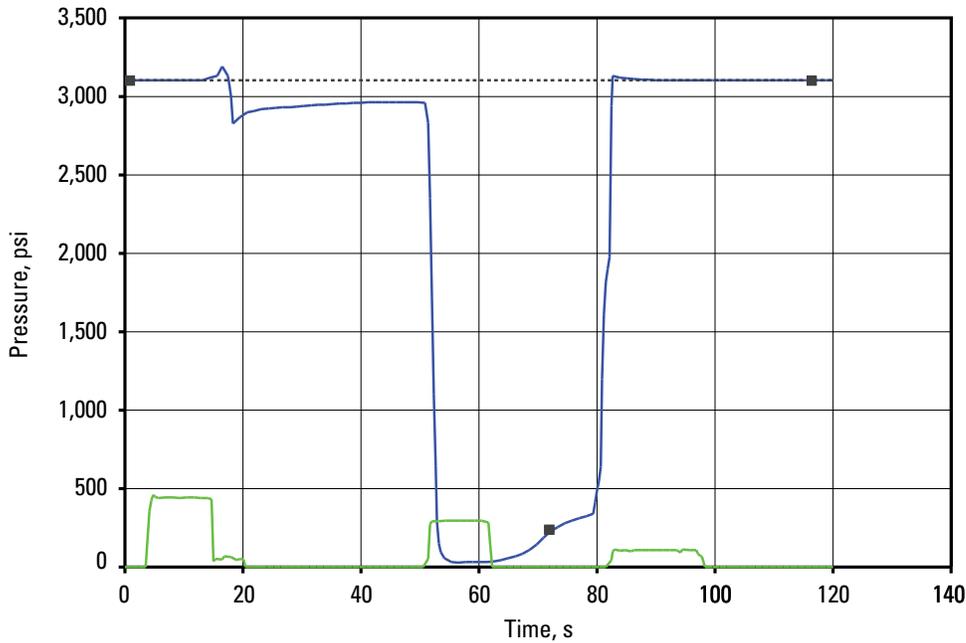
Concerns over sticking of a combined toolstring of the Platform Express integrated logging platform and PressureXpress reservoir pressure while logging tool in the high-overbalance well were relieved when analysis showed only a 3% chance of tool sticking. The combined toolstring also provided time savings by eliminating changing toolstrings, reducing rigup for the lighter tools, logging efficiently at 3,600 ft/h [1,097 m/h], and conducting pretests in as little as 1 min. Unlike conventional formation pressure tools, the streamlined PressureXpress tool obtains only pressure and fluid mobility measurements in a fraction of the time conventionally required. The result was an operational time of only 14 h, a nearly 40% reduction in the usual time required for separate logging and testing runs. This short time meant that a wiper trip, which would have added an extra day to operations, was not required to condition the wellbore for casing and cementing.

The efficient deployment acquired 25 pretests, of which 22 were good-quality tests and just 2 were dry tests and 1 was a tight test.

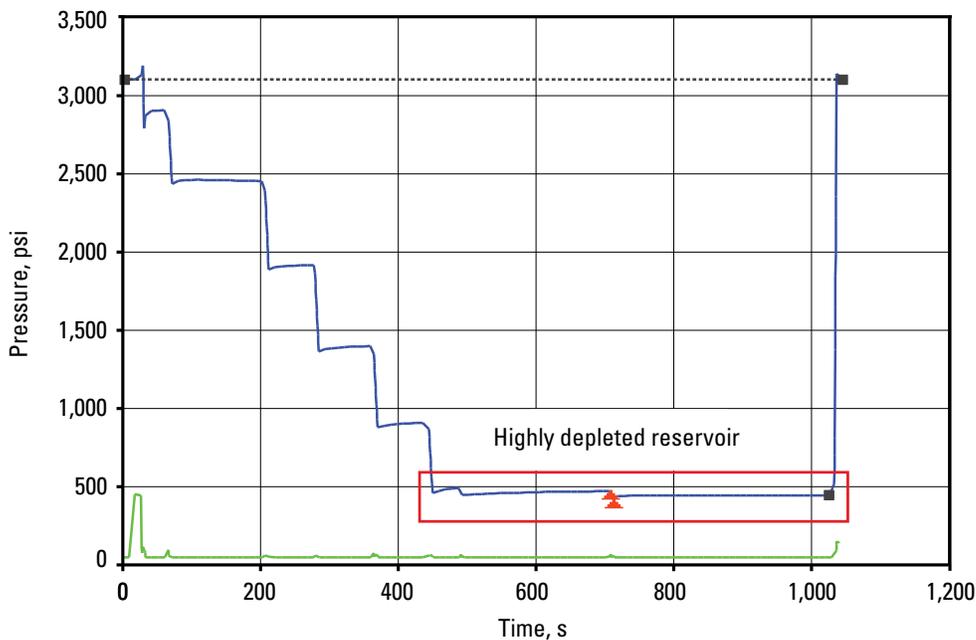


Combining the Platform Express integrated platform and PressureXpress tool in the same toolstring reduced operating time for logging by nearly 40%.

CASE STUDY: One-run combo collects high-quality data in 40% less time in the Western Desert, Egypt



A station tested at the conventional pretest volume of 10 cm³ resulted in a dry test (top). With its more precise control capabilities, the PressureXpress tool conducted multiple pretests at the station with smaller volumes and flow rates to achieve pressure stabilization (bottom). The PressureXpress tests conclusively identified the zone as highly depleted with approximately 2,500-psi [17.2-MPa] overbalance.



Discovering a new reservoir

In addition to clearly identifying depleted zones in the well, testing with the combined Platform Express and PressureXpress toolstring discovered a new reservoir at original pressure. The operator has revised the logging program for the field to use the combo logging and formation testing string for operational efficiency in collecting high-quality data.

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