RESERVOIR CASE STUDY
SPECTRAL FORMATION PRESSURE [SPEC-FP*]

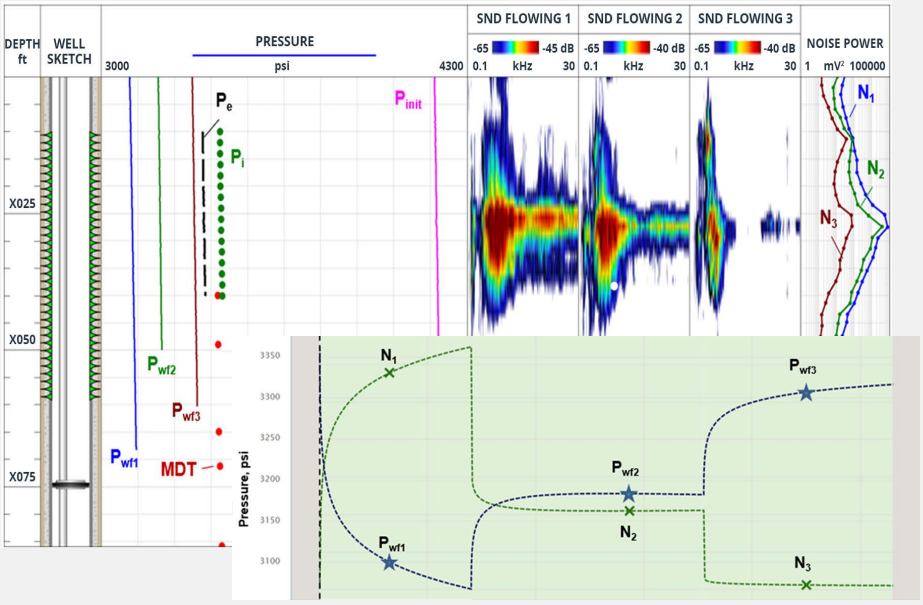
Challenge

An operator in the Middle East wanted to evaluate the formation pressure of several layers separately, including the short string producing layer in a dual-string completion well. The well was chosen to verify the formation pressure obtained from recently acquired MDT survey data.

Solution

TGT was selected to conduct a spectral formation pressure [SPEC-FP] survey in the in fill dual-string producer from inside the long string i.e., without contact between inflow fluid and tool sensors, and without shutting in the well.

The logging procedure was planned using the available pressure build-up data to ensure that measurements were taken under radial flow conditions. The formation pressure, P_e, and the formation pressure recorded before putting the well into production, P_i, were calculated. P_i was found to be in close agreement with the MDT data acquired several months beforehand.



Outcome

The operator used the formation pressures determined by the SPEC-FP survey for 3D modelling and optimising well production from the various reservoirs.

Spectral technology delivered reservoir pressures from inside a dual-string completion, leading to better production.

Layer formation pressure was derived from a SPEC-FP survey. The core of this technology is an empirical correlation between the reservoir-related 'noise power' and the product of the linear fluid flow velocity over the reservoir and the applied pressure gradient.

*TGT patented or patent-pending technology / © TGT Oilfield Services 2017 / CS-0109