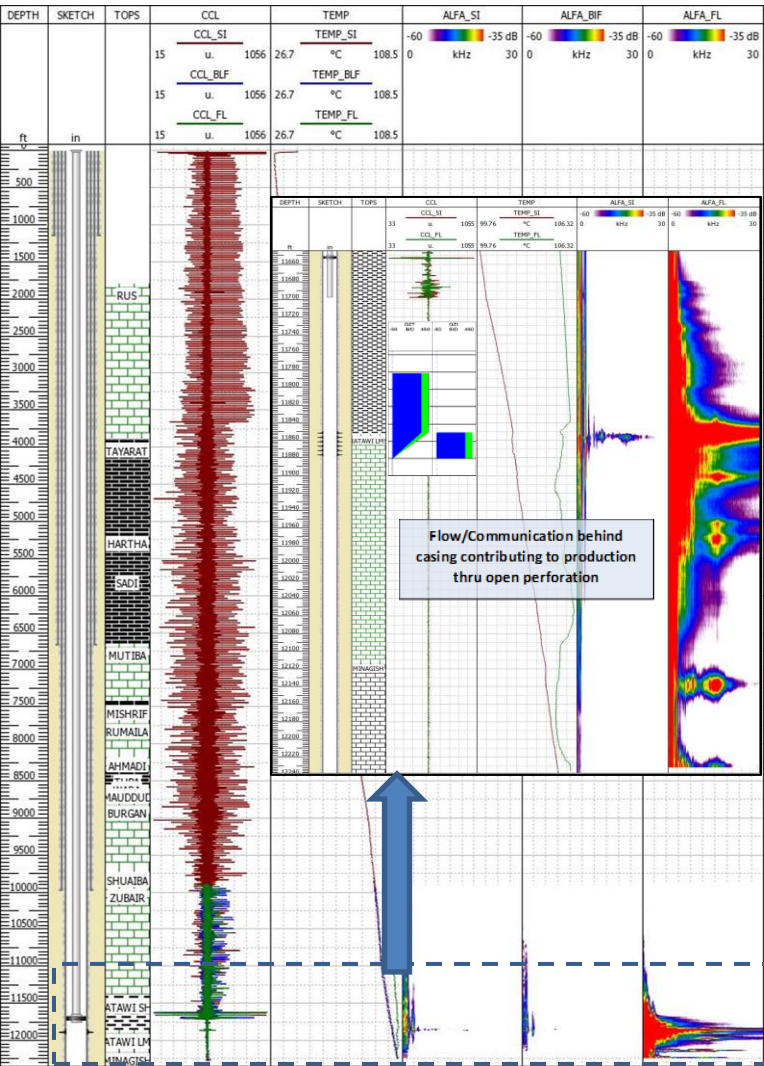


PLT+ALFA Combination to Identify Reason Behind High WC%



Challenge

- A Middle East operator had a challenge to identify the reason behind the high water-cut of 83%. According to OH data and saturation logs, were all showing irreducible water saturation of 5-10%.
- The Hydro-Dynamic model shows no injection water breakthrough across this pay zone.
- The request was to evaluate the reservoir flow and find the source of HIGH WC for possible Water shut-off action.

Solution

A team of GoWell personnel with wide expertise and knowledge regarding formation evaluation and reservoir characterization proposed to run ALFA tool (Acoustic Leak Flow Analyzer) to be combined with PLT. The capabilities of this passive tool will aid to identify / Monitor fluid flow behind casing at the reservoir scale with DOI of 3-5m.

Results

- The active fluid movement suggested by frequency noise recorded in the range of 3-8 KHz and TEMP gradient change from non-perforation zone in the formation are flow/communication behind casing thru poor cement. The direction is from bottom to top and water produced commingled thru open perforations.
- ALFA recorded intense formation noise at the reservoir scale across formation in the entire frequency range of (0 – 28 KHz) identified by warming temperature perturbation and change in temperature gradient indicating production intervals.

