

New Advances in Production Logging in Deviated Multiphase Wells

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Abstract

Using production logging to accurately determine the inflow of oil, gas and water phases is fundamental to developing optimum production strategies and designing remedial workovers. However in highly deviated and horizontal wells conventional production logging tools deliver less than optimal results since they were developed for vertical or near-vertical wells.

Downhole flow regimes in deviated and horizontal wells can be complex and can include stratification, misting and recirculation. Segregation, small changes in well inclination, and the flow regime influence the flow profile. Logging problems typically occur when conventional tools run in deviated and horizontal wells encounter top side bubbly flow, heavy phase recirculation, or stratified layers traveling at different speeds.

A new horizontal and deviated well production logging system has been developed especially for highly deviated and horizontal to near-horizontal wells.

This logging system was recently introduced to the Canadian market. Two recent case studies will be discussed highlighting the advantages and benefits of using this system in complex deviated production analysis.