Abstract:

My Master thesis is focused on a tracer dilution technique in the well using automatic conductivity logging probes LTC Levelogger (Solinst co. Canada). The main aim of my thesis was to test the application conductivity meters LTC to track the movement of fluids in wells. Different set up were used moving probes with unmodified sensor slit, moving probes with modified sensor slit, probes measuring at fixed points, combined moving and fixed points probes and results were compared. 15 wells in quaternary and 11 wells in Bohemian Cretaceous Basin were measured, some of them repeatedly. The comparison of results indicate that the highest apparent flow velocity have probes with unmodified sensor slit. On the other hand fixed point probes indicate flow velocity, which is 40 - 50% lower at the same wells. The combination of the stable positioned probe LTC and the moving probe LTC has about 40% higher flow velocity than the rate of steady probe LTC placed in the well. The results also indicate that extremely slow velocity values (below approximately 0.02 m/day) can be measured only with LTC probes at fixed points. Modified probe slit was tested in the laboratory in plexi-glass tube using fluorescein and NaCl tracers. Unfortunately the modified geometry of measuring slit does not show distinctively better results than original shape of measuring slit.