The transit times decrease with increasing formation compaction due to burial depth and older geological age. A normal trend can be produced from a plot of clay transit times in normally pressured sections. Geopressured clays will show increasing transit times due to increasing porosity associated with increasing pore pressure.

(b) Resistivity Logs

The resistivity of a rock is the ability of the rock to impede the flow of electric current through rock, and is dependent upon the amount of water, its salinity, and the distribution of the water within the rock's porous network.

Any log producing resistivity curves can be utilized for formation pressure evaluation, but the best logs are the induction and microlog types. A resistivity plot in a normally pressured clay shows an increasing trend with depth caused by compaction that decreases clays porosity which results in less connate water to act as an electrical resistance. The increase in porosity in geopressured clays is reflected by a decrease in resistivity, provided the resistivity of the pore water has not increased.

(c) Other Logs

Other electrical logs, including Spontaneous Potential (SP), Formation Density (FDC), Neutron Logs, have been used for formation pressure plotting.

Quantitative formation pressure evaluation involves the determination of normal trends in normally pressured clay sections, and departure from these trend lines in geopressured clays.

All electrical logs used for formation pressure evaluation should be utilised with the considerations for possible pitfalls and limitations, posed by factors such as borehole conditions, mud salinity, shale hydration, tools calibrations, which are inherent with different logging tools.