

Direct Detection of Hydrocarbon by Electraflex Method

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This method bears no relations to other electrical prospecting methods such as resistivity, spontaneous, potential, induction, electro-magnetic, induced polarization, telluric, magneto-telluric and electro-magnetotelluric, etc.

The transmitter is a dipole 800 m long, grounded at both extremities. The receiver is a 160 m dipole, also grounded at both extremities. The Electraflex signal is stored by the hydrocarbons as in a capacitor. After switch off the input signal, the capacitor discharges and this discharge is picked up by the instruments. This information is used to plot the areal extent of pools in the sub-surface and may provide a semi-quantitative estimate of their magnitude.

Magnetic, gravity and seismic survey find out the structure of the rocks in the sub-surface and not the hydrocarbons. Electrical transients serve as direct hydrocarbon indicators supplementing seismic and gravity. It ideally suited to deal with stratigraphic traps.

Each geophysical approach provides evidence about the sub-surface from its own perspective. Clearly a combination of the geophysical approaches should compound benefits from each.
