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The Impact of Pickett's Plot for Developing the Petrophysical Model of Abu Roash Reservoir in Ras Qattara Area, Western

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SUMMARY

The present study deals with Pickett's plot to develop the reservoir petrophysical parameters of Abu Roash Formation in Ras Qattara area, Western Desert, Egypt. These parameters include capillary pressure, pore throat aperture radii, height above the free-water table and bulk volume of water. The method involves the use of log-log plots of the effective porosity vs. resistivity combined with empirical equations for calculating the for-mentioned reservoir characteristics of the considered rock unit.

Plot of $\log R_t$ vs. $\log \Phi$ can be drawn in a straight line with a slope controlled by the cementation factor (m). This plot results in a straight line for intervals with constant capillary pressure and constant pore throat aperture radii, where the capillary pressure at any point on the Pickett's plot is consistent with porosity, permeability and water saturation at that particular point.

The value of R_w is not known in advance, provided that the reservoir contains some water-bearing intervals. However the integration of permeability, capillary pressures and pore-size classes of the pores on a log-log graph of porosity vs. resistivity gives the importance for Pickett's plot to be used in reservoir interpretation.

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