

Since plots of porosity versus depths taken collectively, or individually on the basis of palynologic zone, indicate that relatively thin core intervals show very wide ranges of porosity, from poor reservoir conditions to excellent reservoir conditions, and no significant reduction of porosity with depth, it may be concluded that the series of parallel curves generated by the porosity versus permeability cross-plot indicate the presence of individual genetic units, or correlatable groups of genetic units, within which the porosity and permeability vary widely and are related to one another. This relationship may be seen in core descriptions which indicate that permeability is much more sensitive than porosity and is controlled by the amount of clay matrix and calcite or silica cement. Depth is not a significant factor, however, age may be a significant factor as the older sediments were deposited in a low energy environment, therefore, are less mature and more likely to have a significant matrix component.