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Behavior of Clay effect on Electrical Parameter of Reservoir Rock Using Global Hydraulic Elements (GHEs) Approach

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Abstract : The main objective of this study is to estimate which type of clay minerals that more effect on saturation exponent using Global Hydraulic Elements (GHEs) approach to estimating the distribution of saturation exponent factor. Two wells and seven core samples have been selected from various (GHEs) for detailed study. There are many factors affecting saturation exponent such as wettability, grain pattern pressure of certain authigenic clays, which may promote oil wet characteristics of history of fluid displacement. The saturation exponent is related to the texture and affected by wettability and clay minerals. Capillary pressure (mercury injection) has been used to confirm GHEs which are selected to define rock types; the porous plate method is used to derive the saturation exponent in the laboratory. The petrography is very important in order to study the mineralogy and texture. In this study the results showing excellent relation between saturation exponent and the type of clay minerals which was observed that the Global Hydraulic Elements GHE-2 and GHE-5 which are containing Chlorite is more affect on saturation exponent comparing with the other GHE's.

Keywords : GHEs, wettability, global hydraulic elements, petrography
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