
Reservoir Characterization by Rock/Log Modeling

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ABSTRACT

Typically, geologists and engineers must learn to use a limited data set to establish a drilling strategy that will provide optimum results. While it is understood that the characterization of pore level attributes from rock material provides for an improved understanding of reservoir potential and performance characteristics, many times this material is not available or is too expensive or risky to obtain. Improved interpretation can be achieved by the integration of rock and wireline log data from a selected well(s) and the development of a rock/log model that allows for prediction of the petrophysical rock properties in non-cored wells or intervals from log data only. This approach allows for an improved understanding of effective porosity, permeability and saturation distributions within the reservoir. The application of appropriate cutoff values provides for improved understanding of original oil in place (OOIP) and producibility. The improved characterization and predictability of performance obtained by this approach provides a means of targeting the highest quality development drilling locations, rapidly recognize conformance and formation damage problems, identify bypassed pay intervals and gather an improved assessment of present and future value.