

Permeable Facies Estimation Using Magnetic Resonance Distribution Times Calibrated with Core Data in Oil Base Mud at North of Monagas-Venezuela.

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North Monagas area which is located in Eastern Venezuela has probably the highest hydrocarbon potential in Venezuela. Daily production has an average of 1 million barrels of oil.

The productivity of the zone comes mainly from the sandy bodies of the tertiary Naricual Formation and from the cretaceous San Juan Formation. The reservoirs are approximately 1500 feet thick at depths of 14,000 to 19,000 feet. Because of the depth, the rocks are extremely compacted and porosities are in a range of 8 to 15 %. The permeability distribution, which has a high degree of variation, controls the production of the area.

This paper presents a scheme of methodology for the calibration of permeability results obtained from the processing of the Magnetic Resonance Log with core data (permeability, capillary pressures).

Based on the distribution of bin times, and following the calibration with the core, the estimation of permeable facies in wells without core data and in wells without Magnetic Resonance can be accomplished.

The importance of the present work lies in the generation of a permeability model in a reservoir in which this property plays a role of great importance.