
Naturally Fractured Reservoir Characterization Applied to Field Exploitation

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ABSTRACT

Among the challenges of the worldwide oil industry, it is the development of new technologies that help to characterize naturally fractured reservoir in detail. Offshore, Pemex E&P is developing many reservoirs of this kind and currently, and directs its efforts to implement within its workflow integrated methodologies that allow characterization and to exploitation of these reservoirs. This work shows the impact about how the fracture/vug system was characterized and applied into the exploitation plan of naturally fractured carbonate reservoir in the Cantarell asset. Additionally, a new methodology is described to build strong petrophysical models that characterize a porous medium within the matrix, fracture/vug, and connectivity among them. The application of this work allowed evaluation of the rock/reservoir properties in detail, as well as knowing and understanding the fracture/vug/matrix system, using them successfully to position/locate new wells, well repairs, and minimize operational problems that impact on time/costs and avoid the early irruption of water or gas in Ek-Balam, Sihil, and Akal fields of the Cantarell asset.