عنوان مقاله:

Implementing Direct and Indirect Wireline Methods in Determination of Total Organic Carbon: A Case Study from a West African Hydrocarbon Field

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خلاصه مقاله:

Since the development bloom in unconventional reservoirs in North America, total organic carbon (TOC) has become a more essential parameter, as the indicator of the efficiency of these reservoirs. In this paper, by using conventional well logs and NMR log data, the TOC content of an unconventional reservoir in West Africa is estimated. Passy's, Issler's, and Schmoker's methods were used as indirect wireline methods to estimate TOC content, along the well paths. Afterward, NMR log data, as a direct method, was used to provide more precise calculations of TOC. Both methods showed almost similar trends, with the NMR method indicating lower values for the TOC. Then, an adjusted Schmoker equation was proposed, which showed the best fit between NMR and conventional well logs results. By using the equation, the TOC content was calculated in three other wells, where NMR data were unavailable. The results were then used to prepare a 3D model of the TOC distribution, within the reservoir.

کلمات کلیدی:

NMR, TOC, unconventional reservoirs, Well Logs, West African