

Seismic Reflection Highlights of New Miocene Deep Aquifers in Eastern Tunisia Basin (North Africa)

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Abstract : Eastern Tunisia is a semi-arid area; located in the northern Africa plate; southern Mediterranean side. It is facing water scarcity, overexploitation, and decreasing of water quality of phreatic water table. Water supply and storage will not respond to the demographic and economic growth and demand. In addition, only 5 109 m³ of rainwater from 35 109 m³ per year renewable rain water supply can be retained and remobilized. To remediate this water deficiency, researches had been focused to near new subsurface deep aquifers resources. Among them, Upper Miocene sandstone deposits of Béglia, Saouaf, and Soma Formations. These sandstones are known for their proven Hydrogeologic and hydrocarbon reservoir characteristics in the Tunisian margin. They represent semi-confined to confined aquifers. This work is based on new integrated approaches of seismic stratigraphy, seismic tectonics, and hydrogeology, to highlight and characterize these reservoirs levels for aquifer exploitation in semi-arid area. As a result, five to six third order sequence deposits had been highlighted. They are composed of multi-layered extended sandstones reservoirs; separated by shales packages. These reservoir deposits represent lowstand and highstand system tracts of these sequences, which represent lowstand and highstand system tracts of these sequences. They constitute important strategic water resources volumes for the region.

Keywords : Tunisia, Hydrogeology, sandstones, basin, seismic, aquifers, modeling

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