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Hydrocarbon Potential of Petroleum System, Oued Mya Basin, Algeria

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The Paleozoic sediments are well represented in the Oued Mya basin. A single petroleum system has been defined in the area. It consists primarily of:

- the Silurian age major source rock (hot shale)
- the silicoclastic Triassic primary target hydrocarbon reservoirs. It is composed of the lower clastic member (série inférieur) and the upper member (T1+T2), formed by isolated or coalescent sand bodies including a continental channel deposit.
- the evaporitic Triassic and Jurassic section, an excellent regional seal for the reservoir below.

On the structural side, and the general geodynamic environment controlled sedimentation of the clastic Triassic in the Oued Mya intracratonic basin. The major distension faults are oriented NNE-SSW (thickness and facies variation) in the basin.

Deposits can be assumed as meandering stream deposits system expressed as stratal sand bodies and channels.

A geochemistry study of some wells suggests a timing of generation and expulsion of oil from the source rock.

This is shown by statistical processing, and the conversion for the initial states of geochemistry parameters results in several maps including: Silurian isopach, maturity, potential and expulsion efficiency and isogeneration maps of oil and gas are done.

The lost hydrocarbon volume has been estimated during the migration and already discovered. We had evaluated the remainder to discover, and using the paleostructural evolution of the area, demonstrate possible pathways and the exploration zones still to be explored.