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Prospectivity of the High Plateaus Basin (Morocco)

The results of exploration well Sidi Belkacem-1, drilled in the year 2000, shed new light on one of the little explored basins of the Oran Meseta (Morocco, Algeria).

The prospective sequence consists of Triassic continental sandstones and conglomerates, deposited in a halfgraben setting, which developed as a consequence of Triassic rifting under the influence of the North Atlantic and Neo-Tethys opening. Reservoir development is erratic, controlled by alluvial fans and associated braided rivers. The reservoir sequence is coeval with the prolific so-called TAGI sands (Trias Argillo-Grèseux Inférieur), developed in other rift basins elsewhere in Tunisia and Algeria.

Reservoirs are capped by a thick sequence of Late Triassic and Early Jurassic salt, intercalated with a conspicuous basalt layer, which can be correlated throughout the CAMP (Central Atlantic Magmatic Province), as far as North America.

The source of the hydrocarbons is either marine Carboniferous organic-rich shale, preserved in broad synclines within the Hercynian basement, visible on the widely spaced 2D seismic, or is derived from the inferred world-class Silurian source rock, which extends from the Middle East throughout Northern Africa.

The principal challenge facing future exploration, appraisal and development is subsurface imaging of the complex pre-salt sequence. The acquisition of 3D seismic is being considered.