

AAPG HEDBERG CONFERENCE
“*Paleozoic and Triassic Petroleum Systems in North Africa*”
February 18-20, 2003, Algiers, Algeria

PETROLEUM SYSTEM IN AHNET AND TIMIMOUN BASINS

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The Ahnet and Timimoun basins are located in the Central Algerian Sahara, in the junction zone between the western African shield and the Panafrican shield in the East. The sedimentary column thickness in these basins could be over 5,000 meters. It is essentially composed of constituted Paleozoic clastic sediments. Petroleum exploration in this area started in the 50's. It led to important gas field discoveries such as Krechba and Teguentour.Reg.

The petroleum system is well developed in this part of the Algerian Sahara. It is characterized by the existence of:

- 1. Source rocks:** the shaly or lime–shale deposits are present in the Ordovician, Silurian, Middle to upper Devonian and Carboniferous. The geochemical characterization of these deposits, based on Rock Eval pyrolysis analysis, fission track and thermal history studies indicate that the Ahnet and Timimoun basins include good, thick and mature source rocks.
- 2. Reservoirs:** they are represented by the sandy Cambro–Ordovician, Lower Devonian and Strunian–Tournaisian sediments. Their distribution and characterization are based on well data, core analysis, well log interpretation and well testing results.
- 3. Traps:** the Timimoun and mainly Ahnet basins are characterized by an intense deformation. The structures are very often reverse fault-sealed.
- 4. Hydrocarbon preservation conditions:** it requires good hydrodynamic, hydrochemical and thermal conditions. Over almost all the Ahnet and Timimoun basins the hydrodynamic conditions and hydrochemical characteristics are good and assist the hydrocarbon preservation.
- 5. The petroleum system working:** based on results of the wells drilled thus far, an active petroleum system exists in both basins.

Prospect Potential: the different geologic, geochemical and hydrogeologic data delineates prospective zones in these basins and the exploration risk potential for each.