

# Hydrocarbon generation potential of the Lower Palaeozoic, Western Iraqi Desert.

*AL-AMERI, T. K. and BABAN, D. H. Department of Geology College of Sciences, University of Baghdad, P. O. Box 47062, Jadiriya, Iraq*

Two hundred and twenty samples of cores and cuttings collected from the Khabour and Akkas Formations in Akkas-1, Khleisya-1 and KH5/6 boreholes were analyzed for palynological and organic geochemical studies. They revealed abundant acritarch assemblages and a few spores and chitinozoa with variable other organic matter types.

On the basis of acritarchs with tentative elections of chitinozoa and spores, the stratigraphic section are subdivided into Ordovician Khabour and Silurian Akkas Formations. This section was deposited in marine environments extending from outer to inner neritic with local upwelling currents and lagoons especially in boreholes Akkas-1, KH5/1 and KH5/6.

Maturation assessment are on the basis of Thermal Alteration Indices (TAI) of the acritarchs *Diexallophasis denticulata*-*Orthosphaeridium ternatus* and *Baltisphaeridium constrictum*, organic matter types on Bujak's graphical model, Thompson's kerogen type-B and the total organic carbon (TOC) upto 1.0% to interpret hydrocarbon generation potential.

The location of each level in the diagrams have indicated source potential for wet gas and condensates from depths 2750-3000 meters and dry gas from depths of 3570-3650 meters for borehole Akkas-1 only, while higher up from the Silurian few oil could generated from the lower Silurian Akkas formation in borehole; Akkas-1 and KH5/6 with immature organic matter in borehole Kleisya-1. These potential source rocks are extended southwest towards Jordon and southwest Iraqi Desert.