

## **A GEOLOGICAL MODEL OF THE SOUTHWEST SECTOR OF AXIOS BASIN AS DEDUCED BY THE INTERPRETATION OF SEISMIC REFLECTION LINES**

**M. Loukoyannakis\*, G. Tsokas\*\*, D. Mountrakis\*\*\***

*\*ΔΕΠ - EKY, Kifisias 199, 15124 Marousi, Athens*

*\*\*Dept. of Geophysics, University of Thessaloniki, 54006 Thessaloniki*

*\*\*\*Dept. of Geology, University of Thessaloniki, 54006 Thessaloniki*

The southern sector of Axios basin, specifically the area South of Koufalia and Pella and Eastwards of Alexandria, is studied by the exploitation of seismic reflection lines. These lines were shot on behalf of a regional oil exploration project by D.E.P.-E.K.Y. (Public petroleum corporation of Greece).

The used seismic lines were initially interpreted in order to obtain a time model. By means of an inversion technique based on ray tracing theory, the time models were converted to depth ones. In case of «stack» sections the normal incidence rays were considered. If the sections were subjected to migration, inversion was based on «image rays». Velocity calibration was mainly accomplished on the data of a deep borehole at the Loudias river area which was drilled for commercial purposes.

The results of the present study along with the corresponding of other research activity in the area were combined to produce an isodepth map of the alpine basement and the overlain post-tectonic sediments.

## **GEOPHYSICAL IMPLICATIONS IN ENVIRONMENTAL GEOLOGY FOR DEVELOPMENT OF THE EASTERN NILE DELTA, A.R. EGYPT**

**Mahmoud M. El-Gamili\*, Abd El-Radi Ch. Hassanien\*\*,  
Ahmed El-Said El-Mahmoudi\***

*\*Dept. of Geology, Faculty of Science, El-Mansoura University,  
El-Mansoura, A.R. Egypt*

*\*\*National Research Institute of Astronomy and Geophysics, Helwan, Egypt*

The geoelectric investigation through about 180 vertical electric sounding (maximum AB = 200 m) in El-Sharkiya Province, Eastern Nile Delta, gave facinating results about the vertical and lateral changes in the lithofacies of the Holocene-Pleistocene sequence in this region as well correlated with the available bore holes.

The Pleistocene sandy formation that constitutes the main aquifer in the Nile Delta is found to have irregular surface. Its Paleotopographic features contain shallow «NE» ridges (depth range from 0.8 to 8 m). Some of the irregularities are very shallow forming buried gizera sands out cropping in the south forming «Turtle-backs». Many of the archaeological