

Sequence Stratigraphy and Palaeogeography of the Miocene Deposits in Northwest of Central Iran

Amir Feizi^{1*} and Mahmood Jalali²

1,2-N.I.O.C. Exploration Directorate, 1st Dead End, Seoul St., NE Sheikh Bahaei Sq. P.O. Box 19395-6669, Tehran-IRAN

(E-mail: a.feizi@nioexp.ir)

The study is carried out in the NW Central Iran Zone between Saveh and Takab towns. This area has recently attracted attentions on the hydrocarbon explorations and number of exploration wells drilled (i.e. Alborz, Sarajeh, Aran and Sialk). The Oligo-Miocene is introduced by the Qom Formation as a main reservoir and source rock in Central Iran. The sedimentary succession could be divided into nine stratigraphic members (A to E) around Qom city as type locality section. The succession is composed of carbonate, clastic and evaporitic facies. Towards east and west carbonates and clastics becomes more dominated respectively and the members are hardly definable.

A SE-NW trending regional cross section represents three sub-basins which are separated by highs, suggesting probably a series of Graben and horst or inherited palaeohighs and depressions. The sequence stratigraphy study is carried out based on five NE-SW regional transects which led to recognition of four sedimentary sequences in this time interval. Sequence 1 and 2 (Aquitania) are predominantly deposited in the deepest part of the sub-basins and laterally wedged out. The Burdigalian sediments (sequences 3 and 4) are deeper with respect to the Aquitania and deposited in the entire area, showing major sea level rise. The palaeogeographic and isopach maps made based on sedimentary sequences show lateral and vertical thickness and facies variations throughout the area. Turbiditic facies are deposited in the depressions while carbonate facies laterally move to the east and specially lies on the palaeohighs. This implies that the architecture of the basin strongly controlled by faults. According to the results of this study the palaeotopography of the Oligo-Miocene time are very coinciding to the recent topography.

Key words: *Sequence Stratigraphy, Palaeogeography, Turbiditic facies, palaeohighs, Aquitania, Burdigalian*