Depositional Facies and Environments in the Lower Triassic Ma'in Formation, Dead Sea Area, Jordan

Received on 26/7/89 Accepted for Publication on 5/12/90

I.M. Makhlouf*, B.R. Turner and A.M. Abed
National Resources Authority University of New Castle University of Jordan
Upon Tyne, UK

Abstract

The Lower Triassic Ma’in Formation is exposed along the northeastern margin of the Dead Sea in central Jordan. It consists of a 55m-thick sequence of clastic sediments, which is confined between the underlying Permo-Triassic fluviatile Umm Irna Formation and the overlying, shallow marine Dardur Formation. Two members are recognised within the Ma’in Formation.

The lower, sandy and shaly Himara member is deep maroon and highly bioturbated. This member is thought to have been deposited on a tidal flat. The depositional model proposed is one of a microtidal to mesotidal coastline, with a palaeotidal range of 0.45 m to 2.35 m. The coastline is inferred to have been interacting with a braided fluvial plain, which is fed in quartzitic sediments from the southeast (Arabo-Nubian Shield).

The upper, more sandy Nimra member is cream in colour, more fossiliferous, and more calcareous. The proposed depositional model is that of a shallow subtidal shelf receiving clastic sediments by way of river mouths extending seawards as subtidal channels.