Ibtisam Beik et al., Int J Earth Sci Geol. 2018
http://dx.doi.org/10.18689/2642-1569.a1.003

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International Conference on
Geology & Earth Science
May 2-4, 2018 Rome, Italy

# Maastrichtian-Danian Oil Shales from Jordan - Sedimentology and Depositional Environment

**Ibtisam Beik[1]*, Victor Giraldo Gómez[1], Jörg Mutterlose[1]** and **Olaf G. Podlaha[2]**
[1]Ruhr - University Bochum, Germany
[2]Shell Global Solutions International B.V., The Netherlands

Surface and near-surface oil shale occurrences are well known from central and northern Jordan. The successions are mainly composed of bituminous marls with various amounts of quartz, phyllosilicates and apatite. Previous age determinations based on benthic and planktic foraminifera dated the oil shales as late Campanian to early Maastrichtian. Recently, major deep oil shale occurrences have been discovered across the country. The discovery prompted a set of studies aiming to better understand the timing of their deposition and their environmental setting. Calcareous nannofossils revealed ages ranging from Maastrichtian to middle Eocene. Here, we present the results from core logging and petrographic analyses of Maastrichtian-Danian deposits. Two sections (190 m and 125 m) representing oil shales from the Jafr and Azraq-Hamza basins in southeast and central-east Jordan, respectively, were examined. Oil shale deposition is preceded by dolo-mudstones and burrowed phosclastic mudstones indicating a restricted, yet dynamic, inner-ramp environment. Laminated and burrowed foraminiferal mudstones and wackestones dominate the oil shale successions suggesting a calm reducing environment within the mid- to outer-ramp. The Maastrichtian-Paleogene boundary is not recorded; the Danian interval is underlain by unique layers of phosooidal grainstones. This implies sea level regression following the KPg boundary and deposition in a shallower setting. Stable isotope data (δ13Ccarb and δ18Ocarb) from both sections were examined and compared with the TOC record. Major Maastrichtian and Danian carbon excursion events were detected despite the alteration effect caused by organic matter oxidation. Meanwhile, the δ18Ocarb records reveal minor temperature changes during each of the time intervals.

**Biography:**

Ibtisam Beik is a doctorate candidate at the Ruhr - University Bochum, Institute for Geology, Mineralogy and Geophysics, Germany. She received her master's degree in Geology from the University of Jordan. Recently, she published "Microfacies and depositional environment of Late Cretaceous to Early Paleocene oil shales from Jordan", Arabian Journal of Geosciences (July, 2017). Her current research is mainly focused on oil shale deposits from Jordan, their sedimentology, depositional setting and environment.