

Deposition of the Late Cretaceous Moghal Kot Formation on a fault-controlled slope setting, Sulaiman Foldbelt, Pakistan

Muhammad Afzal Kakar¹, Abdul Salam Khan¹ and Akhtar Muhammad Kassi²

¹Centre of Excellence in Mineralogy, University of Balochistan, Quetta

²Department of Geology, University of Balochistan, Quetta

The Late Cretaceous, Moghal Kot Formation is well exposed in the Sulaiman Fold-belt of western Pakistan. It is 50-650m thick and is dominated by mudstones, shales and marls with subordinate thin to medium-bedded quartzose sandstones, deposited on the western continental margin of the Indian Plate during the Late Cretaceous (Late Campanian to Maastrichtian). Detailed sedimentary logs of five measured section in the study area, provide data for facies analysis, dispersal patterns and environmental interpretations.

Four facies, recognized within the Moghal Kot Formation include; Slump, and debris flow facies, Laminated mudstones facies, Bioturbated mudstones/shales, and marls facies, Lenticular, and erosive sandstones facies and laterally continuous thin-bedded sandstones facies. The facies can be grouped into two main facies associations; (slope facies association and lower shelf delta /prodelta facies association). All of these facies were deposited by turbidity flows.

The vertical and lateral distribution of facies within the Late Cretaceous succession (Moghal Kot, Fort Munro and Pab formations) reveals overall upwards-shallowing and also demonstrates a transition from fluvio-deltaic, inner shelf to fault controlled slope setting. The abundance of slumped units in the lower part of the Moghal Kot Formation suggests that the slope was unstable and active (more likely fault- controlled). Palaeoflow was predominantly towards the W and NW from the uplifted Indian basement to the east.