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Late Cretaceous - Early Paleogene bio- and sequence stratigraphy of west- 1
central Sinai, Egypt 2

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ABSTRACT: A sequence biostratigraphic analysis has been done for the Upper Cretaceous- 7
Lower Paleogene sedimentary outcrops at Wadi Raha, Sudr El-Hetan and Wadi El-Giddi 8
areas in west-central Sinai. The sequences are subdivided into four carbonate rock units; from 9
base to top: the Wata, Themed, Sudr and Waseiyit formations. 10

The biostratigraphic analysis of the studied samples led to the identification of two main 11
planktonic foraminiferal zones, three benthic foraminiferal zones with the ammonite zone. 12

Eleven microfacies associations are recorded in the rock units. Nine constitutes a limestone 13
facies with one constitutes a dolostone facies and one a claystone facies. The stratigraphic 14
data, and the facies study support the identification of three major breaks (sequence 15
boundaries) and four depositional sequences. The depositional sequences are subdivided into 16
four supercycles and seven cycles of 3rd order. 17

The oldest break (~90-88.5Ma.) exists at the top of the Wata Formation coincides with the 18
intra Turonian drop in the global sea level with the initiation of the Syrian Arc inversion 19
phase. The second major break (85 - ~75Ma.) coincides with the major inversion phase and 20
the evolution of the doubly plunging anticlines. The third major break (~68 through ~53Ma.) 21
represents the last phase of the Syrian Arc inversion and complete the missing of Paleocene 22
sequences 23

Keywords: Upper Cretaceous, Lower Paleogene, Foraminifera, Sinai, Sequence Stratigraphy, 24

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