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Ichnology and Sequence Stratigraphy of Wave-Dominated Prograding Delta, Bhuj Formation (Cretaceous), Khatrod Hill Range, Mainland Kachchh, Western India

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Abstract

Bhuj Formation, well exposed in the Khatrod (Katrol) hill range, southeast of Bhuj, comprises ~395 m thick clastic sequence ranging in age from Berriasian to Albian. The lower part of the sequence is shaly which gradually show intercalation with sandstone and finally become arenaceous at the top. Studied sequence is divided into eight sedimentary facies which are highly bioturbated and consist of well-preserved identifiable trace fossils, which are grouped into eight ichnoassemblages namely, *Asteriacites*, *Chondrites*, *Diplocraterion*, *Gyrochorte*, *Ophiomorpha*, *Rhizocorallium*, *Skolithos* and *Thalassinoides*. The presence of *Gyrochorte*, *Rhizocorallium* and *Thalassinoides* ichnoassemblages marked the change in *bathymetry* and fluctuating energy conditions in wave dominated delta region. Sedimentary facies displayed the coarsening upward sequence; the lower part comprises mainly shales with minor siltstone and fine sandstone while upper part is dominated by thick cross-bedded sandstones. The sedimentological and ichnological data of the Cretaceous of Bhuj Formation depicts the minor fluctuations in sea level that gave rise to three transgressive-regressive cycles in wave dominated deltaic environment.

Keywords: Sequence Stratigraphy, Bhuj Formation, Mesozoic rocks, Khatrod Hill Range, Mainland Kachchh, Gujarat.