

## **Microfacies and depositional environments of the Kawagarh limestone, Dhamtaur-Harnoi section, Abbottabad, Pakistan**

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The Kawagarh Limestone of the Cretaceous age is exposed along Abbottabad-Nathiagali Road. A section of the formation along Dhamtaur-Harnoi is measured, logged and sampled for the identification of textural constituents and faunal components for the interpretation of depositional environments. The formation is 45 m thick having lower contact with the Lumshiwai and upper contact with the Hangu Formation. It is medium to thick-bedded with local brecciated horizons and fossiliferous with predominance of planktonic forams while other bioclasts include echinoderms, ostracodes and algae.

Based on constituent composition and textures, three microfacies are recognized. These microfacies are: 1) Planktic foram Wackestone Microfacies, 2) Burrowed planktic foram Wackestone Microfacies and 3) Planktic foram Packstone Microfacies. The microfacies interpretation shows that the Kawagarh Limestone represents deposition in a low energy setting on the shelf. The lack of land-derived clastic input and preponderance of planktic foraminifers indicate deeper, mid-outer shelf environments of deposition. Sea level fluctuations of the shelf are reflected by the cyclic nature of vertical facies changes. The Kawagarh Limestone displays a number of diagenetic fabric dominated by the presence of burial related pressure dissolution, stylolitization, spar-filled fractures, and secondary dolomitization.