

GEOCHEMISTRY OF THE BUDE AND BIDEFORD FORMATIONS, DEVON

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The depositional relationship of the Bude and Bideford formations is not fully understood, therefore a geochemical study was undertaken to help elucidate it. Twenty one samples were collected from mudstones and siltstones from the Bude and Bideford (including Westward Ho!) formations and were analysed for major and trace (including REEs) elements as determined by ICP-AES and ICP-MS. Major and trace element results, in general do not suggest any differences between the geochemistry of the two formations. However, for REEs, two non-overlapping fields can be drawn showing the distribution of La_N/Sm_N against Gd_N/Yb_N . The Bideford Formation shows a comparative enrichment in LREEs and depletion in HREEs as would be expected for sediments with more Archaean crustal input. The Bude Formation sediments all fall into a field comparable with the Westphalian of South Wales, whereas the Bideford Formation sediments do not, indicating that they may not be depositionally related.

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