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Deformations in the metasediments and conglomerates of Tanjung Leman, Johor

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Tanjung Leman, which is underlained by multiply deformed Paleozoic Mersing Beds in unconformable contact with the overlying continental Murau Conglomerates provide an opportunity to study the deformation episodes and history for east coast of Johore as well as to understand the nature of the Murau basin. It was determined that the underlying metasediments have undergone two early ductile deformations overprinted by two distinct episodes of brittle-ductile deformation. The earliest northwest–southeast compression (D_1) produced open upright folds with variably developed north-northwest-striking cleavage. Renewed northwest–southeast compression produced second sets of folds with localized strike-parallel shear zones. Interference between folds is well developed. The general structure of the area is the result of the third episode of deformation (D_3). It gives rise to NNW striking shear zones that deformed the firs two structures into asymmetric sub-vertical folds. The latest episode of deformation (D_4) includes NNE-SSW trending dextral strike-slip faults with subordinate E-W striking sinistral strike-slip faults. The overlying sub-vertical thick-bedded Murau Conglomerates shows clastic dykes, syn-sedimentary listric growth faults, conjugate normal faults and negative flowe structures suggestive of deposition and deformation in a transtensive environment. They are cut by NNE-SSW trending dextral strike-slip faults with subordinate E-W striking sinistral strike-slip faults assigned to the latest episode of deformation (D_4). The deformation provide evidences for early contractional and later dextral transpressional deformation of the Mersing Beds that lead to the development of the Murau basin in a transtensive regime.

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