

Glossifungites Surfaces In The Baldonnel Formation Of Northeast BC: Implications For Productivity, Stratigraphy, And Palaeoenvironmental Analysis.

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ABSTRACT

The Baldonnel Formation (upper Triassic) of northeastern British Columbia is a mixed sequence of siliciclastics and detrital carbonates that serves as a significant hydrocarbon reservoir and exploration target. Despite this economic significance it remains a poorly understood, and largely undescribed, lithostratigraphic unit.

Detailed examination of subsurface Baldonnel cores from within the Township Block of northeast BC and adjacent areas, supplemented by data from correlative Williston Lake Triassic outcrop, reveals that the *Glossifungites* ichnofacies is developed on numerous surfaces throughout the Baldonnel succession. These are most common at the interface between siliciclastic and carbonate units. *Glossifungites* surfaces are characteristic of depositional hiatus, or burial and subsequent exhumation of their host beds. The frequent coincidence of these surfaces with siliciclastic-carbonate transitions indicates the palaeoenvironmental shifts from siliciclastic to carbonate deposition in the Baldonnel were typically associated with a preceding period of non-deposition or minor erosion.

The abundance of *Glossifungites* surfaces in the Baldonnel, including many minor and geographically limited occurrences, limits their utility as stratigraphic markers. Their subtle expression in subsurface cores is a further limiting factor. However, they locally exhibit notable porosity variance relative to adjacent beds, and are commonly present at the base of detrital carbonate beds that are the primary Baldonnel reservoir facies. At the pool and possibly field scale, if these surfaces can be identified, they could provide useful targets for development and/or exploration.