DEPOSITIONAL SETTING OF COAL DEPOSITS IN THE WHITEHORSE TROUGH, YUKON TERRITORY, CANADA

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Upper Triassic to mid-Cretaceous strata of the Whitehorse trough developed in response to the collision of an active island-arc terrain with the North American craton. Up to 3 km of volcanic and volcaniclastic strata, with minor limestone, accumulated in predominantly marine shelf and slope environments in a fore-arc basin well offshore of the North American craton. Minor coals are found in this setting in association with rare sandstones and conglomerates of fan delta origin. The overlying 2.9 km of Jurassic to Early Cretaceous volcaniclastic strata of the Laberge Group are predominantly of deep-water marine origin. Thick sequences on the western margin of the trough represent alluvial fan, fan-delta and submarine fan deposits shed off the island arc. Coals in Lower to Middle Jurassic strata are associated with fan delta deposits developed within a narrow coastal plan setting. Closure of the forearc basin in the Upper Jurassic led to development of a broader coastal plain, with more extensive coal deposits in association with high constructive elongate delta and strandline deposits. The overlying 1.3 km of chert pebble conglomerate of the Upper Jurassic-Lower Cretaceous Tantalus Formation formed in response to the final stages of closure and uplift of the trough. Most of the conglomerates are deposits of Scott type braided streams although local development of ? sinusoidal cross-stratification up to 12.8 m thick may indicate local deposition in coarse-grained meandering streams. Coal deposits are present locally in the finer grained parts of the sequence between the main conglomerate horizons. These coals developed in association with high constructive stream deposits and are thick only where tectonically thickened in the axial zones of drag folds.

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