

## Stratigraphy of the Upper Carboniferous Colindale Member of the Port Hood Formation, western Cape Breton Island, Nova Scotia

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The Westphalian A Colindale Member comprises the upper portion of the Port Hood Formation in western Cape Breton Island. The member is exposed at Colindale (type section) in the Port Hood area, and at the Evan's Coal Mine, MacRae's Beach, and Chimney Corner in the St. Rose area. A number of diamond drill cores, drilled as part of a coal resource evaluation, intersected portions of the Colindale Member, providing additional documentation of this stratigraphic unit in both areas.

The Colindale Member is both conformable and transitional with bounding strata. The contact with the underlying Margaree Member of the Port Hood Formation is marked by a transition from a sandstone-dominated succession with red overbank deposits, to a succession dominated by grey, fine grained overbank deposits with fewer abundant channel sandstone bodies. This contact can be seen at Chimney Corner and MacRae's Beach, and occurs within a thin concealed interval in the Colindale type section. The upper contact of the member with the overlying Henry Island Formation is known in cores from two holes drilled on Port Hood Island. There, the member is transitional through intercalation with overlying fine grained, red overbank materials of

the Henry Island Formation. The Colindale Member reaches more than 830 m thick in the St. Rose - Chimney Corner area, and is approximately 620 m thick in the Port Hood region.

Thick intervals of dark grey to black shales, mudstones, and siltstones typify the Colindale Member, with intercalated sandstones as thick channel sandstone bodies, and as thinner beds within the overbank succession. The fine grained grey rocks of the member consist of shales containing abundant bivalves and ostracodes, mudstones characterized by blocky weathering with slickensides and root traces (paleosols), laminated siltstones, and coal seams with associated carbonaceous shales.

Coal seams of present and former economic significance occur in the upper part of the Colindale Member. The No. 5 seam, up to 2.6 m thick, is a useful local datum for correlating strata of the Colindale Member in the St. Rose - Chimney Corner area. The so-called 6-Foot seam in the Port Hood area provides a comparable local datum. The overall similarity of the member in each of these respective outcrop areas suggests that these two relatively thick coal seams may be correlative.