

STRATIGRAPHY AND PETROLEUM POTENTIAL  
OF THE SWIFT FORMATION, SOUTHERN  
ALBERTA AND NORTH-CENTRAL MONTANA

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Marine strata of the Upper Jurassic Swift Formation underlie a large area of the Western Interior Plains of the United States and pinch out to an erosional edge in southern Alberta. Two informal members can be distinguished over the study area in southern Alberta and northern Montana: a basal glauconitic shale member; and an upper 'ribbon sand' member, composed of interbedded sandstones, siltstones, and shales. Lithotypes in the ribbon sand range from mudstones with lenticular silt beds to flaser-bedded sandstones.

An initial marine transgression resulted in deposition of the basal shale. This was followed by gradual regression and episodic, storm-influenced deposition of the "ribbon sand" member in shallow marine bar and interbar facies. Erosion during the latest Jurassic and earliest Cretaceous, particularly valley cutting, determined the present configuration of the Swift.

Although potential reservoir strata are widespread in the Swift, poor predictability of sand bodies and trapping mechanisms, and a high probability of discovering currently uneconomic gas accumulations have made the Swift a low-priority target for hydrocarbon exploration.