

A high resolution sedimentological assessment : Niton Member of the Fernie Formation, west-central Alberta subsurface

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Abstract

The Niton Member, is a distinctive and regionally mappable, unconformity-bounded, unit in the upper Fernie Formation in the subsurface of west-central Alberta. This member is Late Jurassic (Oxfordian) in age and consists predominantly of glauconitic sublitharenites to quartz arenites with rare shales. It is readily distinguished from the underlying Rock Creek Member (Bajocian) as well as the overlying “Upper Fernie” shale (Oxfordian-Kimmeridgian), and serves as a regional marker in a sequence below the Mannville Group that has long been difficult to interpret. The Niton Member accumulated as a prograding, shallow marine sandbody following a 7 Ma (Late Bajocian to Callovian) hiatus. Concomitant with progradation, the member was overprinted by vadose processes.