

## **Fernie Formation Rock Creek Member in British Columbia**

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The Rock Creek Member (Fernie Formation) of Middle Jurassic (Bajocian) age in British Columbia describes a sequence of siltstones and quartzitic sandstones stratigraphically placed between black Poker Chip Shale and the dark Upper Fernie Shale. It was deposited at the northeastern edge of an eastward thinning wedge of Jurassic sediment. Uplift and erosion during the Columbian orogeny limits its extent northeast of the Peace River Block. Its distribution and quality also appears to be influenced by structural features such as the Fox Creek Escarpment and reactivation of deep-seated block faults along the Peace River Arch. Wherever the sand quality is poor, or non-existent, the Rock Creek becomes indistinguishable from the upper part of the Fernie Formation. Relatively clean sand, with a distinctive log signature, appears to be deposited in two or three separate linear trends possibly representative of sub-tidal shoals flowing down from a sloping Jurassic shelf.

Previous work points to uncertainty as to the age equivalency of the Rock Creek in British Columbia to sandstones in a similar stratigraphic position mapped throughout central and southern Alberta. Its distribution and quality in British Columbia suggests a more distal source than for the similar sand found in central Alberta. The thickest and cleanest Rock Creek sands occur largely in the same areas currently being exploited for Triassic shale gas. Thick Rock Creek sands may present possible attractive economic enhancements when juxtaposed with organic rich Fernie shales.