Facies Variability in the basal Colorado Group (Albian - Early Cenomanian), Alberta Foothills: Possible responses to paleotopography.

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ABSTRACT

New investigations of the basal Colorado Group in the Alberta Foothills between Twps. 36 and 44 reveal striking lateral facies and thickness variations. New sections about 2 km W of the Viking locality described by Leckie *et al* (2000a) on Fall Creek reveal that an erosive-based Viking conglomerate up to 4 m thick is locally separated from pebbly SCS Cadotte sandstone by up to 50 cm of dark laminated mudstone yielding foraminifera typical of the *Ammobaculites wenonahae* Zone, characteristic of the middle Albian basal Hasler Formation. Along strike to the NW, the Viking is apparently absent in Lynx Creek, Cripple Creek, Ram River, Bighorn River, Littlehorn Creek, Thistle Creek and Brazeau River. However, the Barons Sandstone described by Leckie *et al* (2000b) from Cripple Creek appears to be traceable through the other sections examined. The Barons sandstone commonly has a thin conglomerate lag at the base and top. Correlation with well-logs suggests equivalence to the Fish Scale Sandstone. The outcrop correlation is supported by the persistent presence of two or more sandier-upward successions above the Barons Sandstone. These successions are highly bioturbated with very large *Zoophycos* and unusually large calcareous concretions. The lithology of the interpreted Barons Sandstone varies dramatically from section to section over only a few kilometres, suggesting the influence of variable bathymetry and/or localised sediment supply. If the Barons/Fish Scale Sandstone is used as a datum, the Harmon-Cadotte-Hasler-Viking succession appears to be preserved within a 30 m deep paleovalley cut into the underlying Mountain Park/Mannville strata.