Conodont Biostratigraphy in Two Wells of the Beaverhill Lake Group, Upper Middle to lower Upper Devonian, Central Alberta

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An integrated study of conodont biostratigraphy with transgressive-regressive sequence stratigraphy has related genetic successions of the Beaverhill Lake Group over a widespread area of central Alberta. The study area spans from the eastern shelf through an intervening basin, to the western shelf. This paper reports on the conodont biostratigraphy of basinal successions (Waterways Formation) from two wells, 32 km apart, near the western shelf, within a sequence-stratigraphic framework.

In the area of the two wells in central Alberta, the Waterways Formation consists of up to approximately 150 m of interstratified basinal limestones and calcareous shales. The entire Waterways succession is divided into nine genetic units which have been correlated throughout the basin. These genetic successions are assignable to six conodont zones: in ascending order, the Upper *subterminus* Fauna (approximately equivalent to the Upper *disparilis* Subzone), the *norrisi* Zone, and Montagne Noire (MN) zones 1 to 4. This suggests that there was continuous sedimentation through the Givetian-Frasnian (Middle-Late Devonian) boundary. *Palmatolepis transitans* makes a late entry within MN Zone 4. The base of MN 4 was determined by the first occurrence of a new species of *Ancyrodella*, that has been demonstrated to be restricted to that zone through graphic correlation (Klapper, pers. comm., 2000).

The correlations made independently from physical sequence stratigraphy and conodont biostratigraphy corroborate each other.