

## **Reservoir Characterization of Burrow-Mottled Dolomites: Devonian Wabamun Group, West-Central Alberta, Canada**

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### **Abstract**

Research has shown that bioturbation can significantly alter the permeability and porosity distributions within a reservoir (e.g. Dawson, 1978; Morrow, 1978; Gingras et al., 1999, 2002, 2004, 2007; Pemberton and Gingras, 2005; Spila et al., 2007; Gordon et al., 2010; Tonkin et al., 2010; Baniak et al., 2011; Lemiski et al., 2011). Within calcareous sediment, chemical and physical alteration of the substrate by burrowing organisms can result in fabric-selective dolomitization. In many examples, these dolomitized burrows have been identified as having significantly higher permeabilities relative to the surrounding lime mud matrix (e.g. Ordovician Yeoman/Red Rivers Formations, Williston Basin, Gingras et al. (2004); Mississippian Debolt Formation, northwestern Alberta, Baniak et al. (in review)). The Wabamun Group in the subsurface of west-central Alberta is another example of burrow-associated dolomitization and is the focus of this study. Within this study, a primary focus was on the facies architecture of the carbonate units. From this, a clearer understanding of the controls bioturbation exerts on reservoir quality can be established.