

Gas Potential Of Organic-Rich Shale In The Fort St John Group, Northeastern British Columbia.

Gareth Chalmers* and R.M. Bustin
Earth and Ocean Sciences, University of British Columbia,
6339 Stores Road, Vancouver, BC V6T 1Z4
gchalmer@eos.ubc.ca

ABSTRACT

The Lower Cretaceous Moosebar Formation is a fine-grained succession of variably organic-rich strata up to 100 metres thick that locally includes coarsening and thickening up sequences of silt and very fine-grained sandstone. The Moosebar was deposited over much of north-eastern British Columbia. as part of a regressive-transgressive succession with facies changes controlled by the oscillation of the shoreline within the study area.

The thickness and lateral extent of the organic-rich intervals together with locally coarser-grained facies make the Moosebar a prime gas shale prospect. Preliminary results from Rock-Eval and CNS show the total organic carbon (TOC) content varies mainly between 0.1 and 4% by weight and is dominated by type III kerogen. The gas storage capacity determined by adsorption isotherm analyses is highly variable but organic-rich intervals with sorption capacities in excessive 2 cc/g of rock do occur. Significant free gas porosity also locally exists. The porosity available to free gas is characterised by Hg porosimetry. Detailed analyses of a 150 m thick core (6-30-80-13W6) that contains the Gates, Moosebar and Gething Formations provides the opportunity to access the variability in organic matter composition, abundance and sorption capacity through marine to shoreline facies.

To the north, the Buckingham Formation, a stratigraphically equivalent more basinal facies of the Moosebar, also contains organic-rich facies which are currently being accessed.