

## **Inorganic geochemical analysis of fine-grained rocks from the Carboniferous of Maritimes Basin Complex in New Brunswick: Preliminary data analysis**

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The Carboniferous Maritimes Basin Complex is host to the only known commercially producing onshore petroleum system in Atlantic Canada. In New Brunswick, strata are divided into six lithostratigraphic groups: Horton, Sussex, Windsor, Mabou, Cumberland, and Pictou. However, various complications such as restricted outcrop exposure, lithologically similar fine-grained strata, absence of radiometrically datable materials, and reworking of rare microfossils throughout the succession often render it difficult to identify potential intervals of economic importance. Chemostratigraphic methods recently have become more widely accepted as invaluable tools in the differentiation of other stratigraphic successions with similar complications. Accordingly, samples are being collected from fine-grained strata in outcrop and borehole from each of the Carboniferous groups at different locations around New Brunswick for bulk geochemical analysis using ICP-MS. The data is being statistically analyzed to determine if unique major, minor, or trace elemental composition characterize any or each of the stratigraphic units. To date, 51 samples from the Horton Group; exclusively in the Albert Formation, have been assessed to determine the elemental variability present within this one unit. Future work of this project will extend collection of samples into the entire lithostratigraphic column, which could possibly result in a chemostratigraphic characterization of the Carboniferous rocks of the basin.