

An Evaluation of the Unconventional Oil Resource Potential of the Bakken Formation in Saskatchewan and North Dakota

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Canadian Discovery Ltd. has applied a volumetric method to calculate the unconventional oil-in-place in the Bakken Formation in SE Saskatchewan and North Dakota. This process began with a detailed stratigraphic model to identify the distribution of the various Bakken reservoirs. The development of a basin-wide hydrogeological/petroleum systems model is used to infer thermal maturity, source rock thickness and oil migration pathways. Subsequently, a petrophysical model was developed to identify porosity, fluid saturations and net reservoir thickness within the Bakken reservoir facies. These components were mapped and integrated to define Bakken play types in specific geographic areas. The play types broadly fall into three groups: Overpressured (unconventional), Transitional (conventional and unconventional), and Migrated (conventional and unconventional). The sum of the volumetric calculations for all the unconventional play types in Saskatchewan and North Dakota provides an accurate estimate of the original oil-in-place and provides an effective means of assessing risk.

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