

Synthesis of Hydrocarbon Systems and Conceptual Plays for the Intracratonic Hudson Bay Basin, Arctic Canada

Denis Lavoie¹, Nicolas Pinet¹, Mathieu Duchesne¹, Virginia Brake¹, Esther Asselin¹, Shunxin Zhang², Jim Dietrich³, Kezhen Hu³, Jennifer Galloway³, Julito Reyes³, Derek Armstrong⁴, Michelle Nicolas⁵, Pierre Keating⁶, Vincent Decker⁷ and Barry Kohn⁸

¹ *Geological Survey of Canada – Quebec office, Quebec City, QC*

² *Canada-Nunavut Geoscience Office, Iqaluit, NU*

³ *Geological Survey of Canada – Calgary office, Calgary, AB*

⁴ *Ontario Geological Survey, Sudbury, ON*

⁵ *Manitoba Geological Survey, Winnipeg, MA*

⁶ *Geological Survey of Canada, Ottawa, ON*

⁷ *Canada Centre of Remote Sensing, Ottawa, ON*

⁸ *University of Melbourne, Melbourne, Australia*

Abstract

The Phanerozoic Hudson Bay Basin is the least studied sedimentary basin in Canada despite the fact that it is one of the largest sedimentary accumulations in North America. Of all these basins, the Hudson Bay Basin is the only intracratonic basin in North America completely encircled by the Precambrian craton (Fig. 1) and the mechanism responsible for its formation is yet to be fully understood. As part of the 2008-2013 Geo-mapping for Energy and Minerals (GEM) program, the Geological Survey of Canada and its partners initiated a research project aimed at generating a better understanding of the geological evolution of the basin that will lead to a modern appraisal of its hydrocarbon potential. Reevaluation of historical geoscience information and new data are being synthesized. The integration of geoscience information will shed new light on the evolution of this basin and lead to the proposition of conceptual hydrocarbon plays in this oil-prone basin.