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## The Montney-Doig fine-grained source-reservoir system – A basin perspective

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### Summary

The Montney-Doig succession in the Western Canada Sedimentary Basin is the host of both conventional and unconventional petroleum accumulations. Conventional oil and gas trapped in proximal deposits and turbiditic reservoirs have been produced for decades. In recent years, tight organic-lean and organic-rich fine-grained sediments from the distal part of the basin have become the most active unconventional play in Canada. The present-day distribution of hydrocarbons within the Montney-Doig system results from the interplay of the stratigraphic architecture that controls the spatial distribution of facies heterogeneity and organic matter, with the structural evolution of the basin that controls the burial history and timing of fluid migrations. Integrating these different elements at basin scale would help better define play concepts and reduce the exploration risk of this complex petroleum system. In this paper, we will present an analysis of the basin-wide sedimentary architecture of the Montney-Doig formations based on sequence stratigraphy concepts and propose a workflow that integrates this information into the basin analysis by coupling stratigraphic modeling and basin modeling.