Characteristics of the Triassic Upper Montney Formation (Unit C), West-Central Area, Alberta

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Abstract

Unconventional hydrocarbon resources include those subsurface oil and gas accumulations that are challenging to recover and estimate relative to conventional resources, either due to poor reservoir quality or unique fluid storage and transport mechanisms. A representative project to illustrate this difficulty is focused on the Lower Triassic of the Montney Formation for unit C (informal name) within the Pouce Coupe South Pool (gas plays within distal fan siltstone-shale intervals), west-central Alberta. Four wells were used in this study N1, N2, N3 and N4.

The objective of this project is to incorporate core data with petrophysical measurements using various well logging tools to delineate the different petrofacies in the studied wells. Non-routine-methods are applied to understand the porosity, probe permeability, and pulse decay permeability that were conducted on ultra-low matrix permeability rock (at variable confining pressure) to establish controls of lithology on stress-dependence of permeability and to improve the fine scale heterogeneity of the reservoir.