

Comparison of Conventional Density and NMR Porosity with Core Porosity from Montney and Doig Phosphate in the Monias Area, N.E., British Columbia, Canada

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Abstract

The Montney Formation and Doig Phosphate Member are being exploited as unconventional tight gas plays in northeast British Columbia. Both units are characterized by low porosity, varying from 2% to 6%. A large amount of the recovered gas is thought to be from this pore space, not from adsorbed gas. To determine where the best recoveries occur from these units, it is necessary to identify zones with effective porosity. Core analysis provides the best clues, but it is expensive to acquire and usually yields coarse sampling. Standard density porosity measurements are commonly used, but correlation with core is often erroneous. This discrepancy can be explained after establishing the lithology of the Montney and Doig Phosphate. Both units, especially the Doig Phosphate, contain exotic components that significantly impact porosity calculations derived from conventional density logs.