

Quebec's New Horizontal Play for Light Oil in the Gaspé Peninsula

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ABSTRACT

The search for commercial quantities of light oil in the Gaspé Peninsula looks promising along trend with the 2014 announced oil discovery in Galt Field by Junex. This discovery required horizontal drilling to maximize the wellbore contact with natural fractures and porosity in the previously uncommercial, Devonian-aged, Forillon Formation. Horizontal drilling is the key to commercial oil production in the Gaspé area. Thousands of acres along trend of the Galt Field discovery require a re-assessment as to horizontal drilling and exploration potential. This presentation will show where new discoveries could be found in central Gaspé Peninsula, based on reprocessed 2D pre-stack PSTM seismic lines, and surface and subsurface integration of geologic data. Mundiregina Resources Canada, reprocessed 2008 2D lines in 2014-2015 and achieved an improvement in data quality. Reprocessed lines now image large thrust anticlines and synclines in central Gaspé. Interpretation of the reprocessed seismic lines will be presented.

The Gaspé area Silurian and Devonian rocks were deformed into an Appalachian-style thrust belt during the Acadian Orogeny. Tectonic forces included syn-sedimentary, listric faulting during the Silurian, and thrusting and strike slip movement during the Middle Devonian. Carbonate and siliciclastic rocks experienced hydrothermal fluids along faults and fractures during structural movement, enhancing porosity, and Ordovician source rocks charged the overlying Silurian and Devonian section.

A key piece of well data for the area is the Mont Alexandre #1 well (2009) which penetrated the Forillon Formation along trend with Galt Field. The key elements of productive Forillon reservoirs, including hydrothermal dolomite in natural fractures, are demonstrated to exist in surface outcrops along trend to Galt Field, and over an extensive area of the Central Gaspé Peninsula. Older wells in the Central Gaspé were shallow, vertical wells. Light oil potential was left undiscovered by abandoning these old wells.