

Observations on Recent Exploration Success in Canada's Arctic Frontier Regions

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Abstract

Exploration is a wonderful combination of science, imagination and detective work. Frontier Basins, unlike mature basins, are almost always challenged by unavailable, poor or partial subsurface datasets. Well and seismic databases can be 10 to 40 years old with few wells drilled on a specific play types when the new concepts are forged in the explorationists mind.

Exploration for hydrocarbons in Mackenzie Basin began in earnest in the 1960's with large discoveries in excellent reservoirs on the Mackenzie Delta and then later offshore in the Beaufort Sea. The hydrocarbons were found in Mid-Tertiary-aged sandstone reservoirs, deposited by the paleo-Mackenzie River which flowed into an ice-free Arctic Ocean. This exploration phase ended in early 1980s due to low commodity prices and lack of pipelines. A new round of exploration in the 2000 timeframe brought new data acquisition and ideas lead to a couple significant discoveries.

A case history of recent exploration success within the Canadian Arctic will show the potential of the Canadian Arctic for high impact discoveries in both conventional and unconventional resources in an area where old data and new technologies combined with an exploration mindset lead to the discovery of a new gas field.