



## Nunavut: The Untapped Petroleum Frontier

Gordon MacKay\*

Minerals and Petroleum Resources, Government of Nunavut, Iqaluit, Nunavut, Canada  
gmackay@gov.nu.ca

and

Peter Frampton

Minerals and Petroleum Resources, Government of Nunavut, Iqaluit, Nunavut, Canada

### Abstract

Starting in the early 1960's there was a rush into Canada's Arctic Islands in search of petroleum in the sedimentary basins. Early geological mapping identified great potential and industry and the Canadian Government were eager to test that potential. Exploration led to 21 registered significant discoveries of which only SDL 074 Bent Horn gas discovery was developed. These discoveries were funded by the investment of over 100 companies. Investments were from less than 0.01 percent to 100 percent of each SDL. Since the end of the Petroleum Incentive Program there has been no further exploration or development in spite of the rising cost of crude oil and natural gas. The stagnation of development was caused by depressed prices, high cost environment, technology gaps, and the confusing mire of company interests in each of the SDL sections both geographically and stratigraphically. This investment structure was due to wildcat investing from any capital source Panarctic Oil could muster. The SDL investment stratigraphic sections are more numerous than the single to few wells which were drilled to determine the petroleum potential of each discovery.

Resources of the Arctic include billions of cubic meters of gas and millions of cubic meters of oil based on discoveries from 195 wells. The Cisco discovery in 1981 was calculated to have 48.7 million cubic meters of Oil and 4.4 billion cubic meters of Natural Gas. Drake Point natural gas discovery in 1969 was calculated to have 98.5 billion cubic meters of Natural Gas. In total the 21 significant discoveries represent a known reserve of 118 million cubic feet of Oil and 303 billion cubic feet of Natural Gas. Well density in the Sverdrup is less than one well for every 1000 square kilometers of prospective geology.

Present economics are positive as the price of petroleum is much greater than cost of development and transport. Modern technology of icebreaking oil and LNG tankers makes transport out of the Arctic feasible, economic, and safe. Canada's arctic petroleum resources are located closer to North American Markets than some offshore resources currently being produced. Drake is located on Melville Island and Cisco approximately 20 km offshore Loughheed Island in Byam Martin Channel. Much closer to land than the Hibernia, Terra Nova and Husky oil developed discoveries in iceberg infested waters hundred's of kilometers offshore of Newfoundland. Cisco offshore discovery is in relatively calm frozen sea as opposed to the dangerous wave and climate conditions of the Atlantic Ocean in winter. The end of Arctic



petroleum development in the 1980's was due to the drop in petroleum prices. Market value of natural gas and oil is much higher today. Other positive news include modern technologies of double hulled ice breaking tankers; liquefied natural gas transport and knowledge of Arctic working conditions make development of Arctic petroleum a bright prospect.