

**The Gulf of St. Lawrence Carboniferous Basin;
The Largest Coalfield of Eastern Canada**

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Two continuous coal zones occurring in a 2500 feet (762 m) thick section of the Upper Carboniferous Pictou Group (Westphalian C and D) have been encountered in five offshore wells drilled for oil and gas in the Gulf of St. Lawrence. They correlate, by means of fossil spores, with thick coals of the Mabou and Inverness coalfields situated at the eastern margin of the Basin. Therefore, the presence of a large submarine coalfield of at least 18,000 square miles (46,620 km²) is

indicated. This compares with an estimated size of 14,000 square miles (36,260 km²) for the Sydney Coal Basin.

Accessibility is provided only by the small onshore parts of the Mabou and Inverness fields, because farther offshore the coals lie too deep to be mined (below 4,000 feet (1219 m)).

Two two near-shore coal exploration wells indicate that at Mabou Mines the younger Inverness coals occur at a mineable depth to at least 5 km from land. A structure contour map of this

area shows a reserve of 125 million tons, in two Inverness equivalent seams that are 8.5 feet (2.6 m) and 4.5 feet (1.4 m) thick. The Mabou coals, however, reach too great a depth close to shore to possess mineable resources.

A structure contour map of the Inverness submarine area, based on mine data and one offshore seismic profile, indicates inferred mineable resources of 160 million tons, in two seams that are 7 feet (2.1 m) and 4.5 feet (1.4 m) thick. A detailed deep-seismic survey will be necessary to substantiate the structure and resource estimates.

Maceral and coal quality percentage diagrams of five column samples of these seams (the 7 Foot and 13 Foot Seams of Inverness Equivalents) show a bright banded coal, high in reactive

macerals, which will produce a weak coke unsuitable for metallurgical purposes. A thermal coal with a rank of H.V. "B" Bituminous (0.64% Ro) is present, averaging 12,000 BTU/lb (6,660 KCAL/KG), 10% ash and 6% sulphur, of which 60-80% is derived from pyrite.

Micro lithotype profiles of the major Mabou and Inverness coals show characteristic successions that can be used for seam identification and proved valuable for structural interpretations.

The time of faulting in the major fracture zone on the eastern margin of the Gulf of St. Lawrence Basin has been deduced from coal rank variations. It occurred in post-Permian, probably Early Triassic time.