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Underwater exploration of Lake Erie produces pumped-up profits

Resting on the bottom at the eastern end of Lake Erie on the Canadian side, is a vast network of natural gas well-heads and connecting pipe, silently draining the only tapped gas field in a North American inland waterway. On the surface, a drilling barge and an operations (or frac) barge belonging to Pembina Resources Limited of Calgary, constantly shift around, drilling, testing, connecting and capping wells in a search for more gas.

Working in the five-month summer season that Lake Erie permits, about 40 holes a year have been drilled since the company started underwater exploration in 1980. While several companies are draining gas from well-heads already in place, Pembina Resources is the only one drilling for new gas.

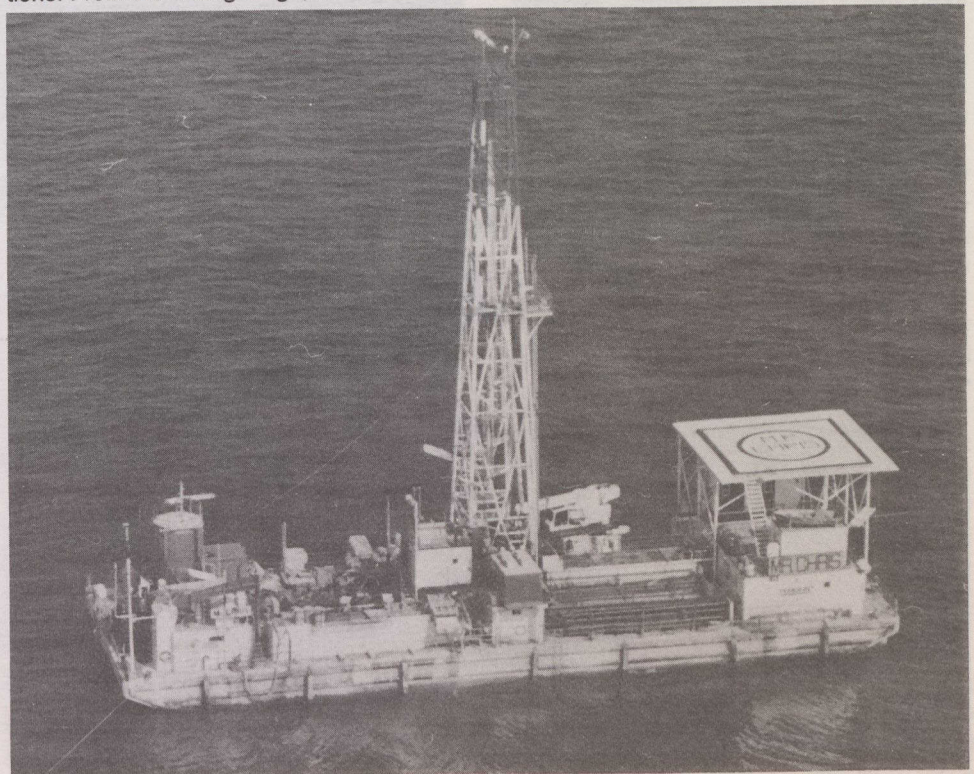
Geologists in the company have had a great deal of success in their drilling operations. From the drilling barge, the *Mr. Chris*,

a profitable gas reservoir has been hit with one of every two holes. The huge semi-submersible rigs working the continental shelf in the Gulf of Mexico, the North Sea and Sable Island score with about one of every three holes drilled, says Pembina's Ontario operations manager, Louis Goulet.

Each of the 166 well-heads now being drained by Pembina costs about \$300 000 to drill, test and connect with the lake-bottom pipe network. The 400 kilometres of pipe drain into two shore compressor stations, one near Port Maitland, Ontario, where the gas is sold to Consumers Gas Ltd. and Port Dover, Ontario, where it is sold to Union Gas Ltd.

Drilling process

The offshore exploration process first involves drilling down to the gas reservoir identified by geologists. If gas is located, the size of the "pay zone" and gas pressure



Pembina Resources Ltd.'s drilling rig, Mr. Chris, on Lake Erie.



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