

Little Bear Area (Norman Wells): Hydrocarbon Prospects Northwest Territories

James R. (Jim) Taylor*, Kenneth I. Mitchell and Gary Winter
Canadian Forest Oil Ltd. 600, 800 – 6th Ave. S.W. Calgary, AB T2P 3G3
jrtaylor@forestoil.ca

ABSTRACT

The Little Bear area is located 55km southeast of Norman Wells. Exploration Licences (EL) 412 and 421 are prospective for both gas and oil. The Enbridge oil pipeline to Zama, Alberta is located just east of EL 421. The same pipeline right-of-way is planned for the Mackenzie Valley natural gas pipeline. Modern 2D seismic was shot in the late 1990s and a number of stacked potential hydrocarbon traps have been mapped. New information on geochemistry, timing of hydrocarbon migration and basin interpretation contained in several GSC published and open file reports tend to enhance prospectivity.

A drill ready, multi-zone, shallow (600m), exploratory oil play in the Cretaceous Slater River Formation sandstones has potential and nearby pipeline access. A deeper (3500m) sub-salt Cambrian deltaic sandstone updip pinch out on the Keele Arch has the potential for very large (TCF+) natural gas reserves. The Cambrian has established gas discoveries in the Colville area northeast of Norman Wells. The Cambrian section at Little Bear is much thicker and the structural timing as a pre-Laramide “early structure” means that it could be a timely (in more than one sense) exploration target in advance of the Mackenzie valley gas pipeline construction. Secondary gas potential is present in the Devonian Hume and Arnica Carbonates and in the sub-Cambrian Proterozoic Dolomites.