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### New frontiers for petroleum exploration in the deep water of Atlantic Canada

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WISHART, HUGH

*EnCana Corporation, Suite 1800, 855 2nd Street SW,  
PO Box 2850, Calgary, AB T2P 2S5*

EnCana is one of the largest acreage holders in offshore Nova Scotia with interests in 15 exploration licences totalling more than 2.4 million net acres. In addition, EnCana has a 100% interest in the Deep Panuke discovery, on which regulatory approval is expected during 2003. EnCana is the largest landholder in offshore Newfoundland with nearly 2.8 million net acres in 10 exploration licences in 4 different sedimentary basins. The combination of this acreage makes EnCana the largest offshore acreage holder in Atlantic Canada with a total of 5.2 million net acres under licence. Although EnCana has significant interests in the shallow waters of both provinces, the majority of this acreage lies in water deeper than 500 m. The exploration licences cover two primary basins, the Scotian Slope in Nova Scotia and the Flemish Pass basin in Newfoundland.

The Scotian Slope and Flemish Pass represent two very different “deep water” basins. The Scotian Slope is the deep water portion of the Scotian Basin, a large passive margin basin under Atlantic Canada’s continental shelf and slope that encompasses a corridor 100 to 150 km wide by 900 km long on the southern margin of the province of Nova Scotia. The Scotian Slope is expected to be a gas province, as is the Sable Sub-basin. It exhibits play types and depositional systems typically associated with exploration in areas like the deep-water Gulf of Mexico and West Africa. On the Scotian Slope, reservoir sediments were transported into the deep water in front of the major Jurassic to early Cretaceous aged Sable delta during periods of shelf instability and lowstand events. These reservoirs were eventually deposited in areas of accommodation on the slope or on the basin floor in submarine channels, lobes and fans. Halokinetic movement of the Jurassic-aged Argo salt not only created much of this accommodation but also created various structures associated with halokinetic swells, walls, ridges and domes as well as minibasin and subsalt exploration prospects. Hydrocarbons will be derived from Jurassic to Cretaceous-aged pro-delta and slope gas prone source rocks. On the other hand, the Flemish Pass basin is an intra-cratonic rift basin, similar to the neighbouring Jeanne d’Arc basin. It is 45 km wide and 170 km. long, making it much smaller than the Scotian Basin. The target reservoirs are the same Jurassic to Cretaceous-aged clastics as those on the Scotian Slope but in the Flemish Pass they are interpreted to predominantly be shallow-marine to marginal-marine sandstones. The mapped play types in the Flemish Pass are structural closures in the form of rift-related horsts and tilted fault blocks and stratigraphic plays in the form of sub-crop pinchouts. The Flemish Pass basin contains the same oil-prone Kimmeridgian source rock as the Jeanne d’Arc basin, which is interpreted to be mature over much of the basin.

Significant exploration work commitments have been bid by the oil industry in both provinces in the deep water. Numerous exploration wells are planned over the next few years, including the Mizzen and Tuckamore wells in the Flemish Pass, operated by Petro-Canada and in which EnCana is a 33.33% interest holder. Examples of prospectivity will be presented from a variety of locations in both basins using seismic and schematic representations.