

Comparative Analysis of Ultimate Natural Gas Resource Potential – Louisiana Gulf Coast, Mackenzie Delta/Beaufort and Scotian Shelf Basins

Gerry E. Reinson*
Reinson Consultants Ltd, Calgary, Alberta

and

Ken Drummond
Drummond Consulting, Calgary, Alberta

ABSTRACT

Comparative analysis of estimates of ultimate natural gas resource potential in the Louisiana Gulf Coast Basin and Shelf, the Mackenzie Delta/Beaufort Basin and the Scotian Basin offshore Nova Scotia, invokes interesting comparisons with respect to geological play types and areas, trapping mechanisms and structural controls. The Louisiana Gulf Coast Basin is similar to the Mackenzie Delta in that both gas provinces occur in prograding fluvial-dominated deltaic sandstone reservoirs, primarily Tertiary in age. The traps are structural, formed through tectonic faulting during anticlinal compression and growth faulting due to sediment loading. Salt piercement also plays a major role in trap formation in the Louisiana Gulf Coast. The gas reservoirs in the Scotian Basin are similar both in depositional mode and structural style to those of the Mackenzie Delta and Gulf Coast regions, but the age of the reservoir sandstones range from late Jurassic to mid-Cretaceous.

With respect to ultimate potential, the Louisiana Gulf Coast province is estimated to contain an additional 30 TCF, the Mackenzie Delta province some 55 TCF and the Scotian Basin in the order of 13 TCF. These estimates point to the huge untapped potential of the Mackenzie Delta region, and probably indicate also that the Scotian Shelf estimate is low and should be re-evaluated. Our revised estimates indicate that much of the future gas supply for the North American continent may come from the Canadian Mackenzie Delta and Eastern Seaboard regions.