GEOHAZARDS, LITHOLOGY AND SHALLOW SEISMOSTRATIGRAPHY OF THE MORESBY TROUGH/MIDDLE BANK AREA, QUEEN CHARLOTTE SOUND, BRITISH COLUMBIA

PROJECT 840033

POTENTIAL GEOLOGIC HAZARDS TO DEVELOPMENT: SEA FLOOR AND SHALLOW SUB-BOTTOM OF QUEEN CHARLOTTE SOUND, B.C.

Cordilleran and Pacific Margin Division
Geological Survey of Canada

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ABSTRACT

High resolution seismic profiles supplemented by acoustic reflectivity data and limited core and grab sampling have revealed potential hazards to hydrocarbon exploration and development in northern Queen Charlotte Sound,B.C. A mud unit is present on the western side of Moresby Trough at depths between 380 and 390 metres and also in the deepest part of the trough where it appears to contain shallow biogenic gas. Two to five metre high sandwaves on the northwestern margin of Middle Bank at depths between 140 and 250m suggest the bank surface can be highly mobile. Channels up to 80m deep have been incised into the northwestern flank of the bank. Steep (10–15°) sediment fans at the base of these channels suggest that they are or have been conduits for sediment flows or turbidity currents. The heads of the channels are also potential sites of instability.

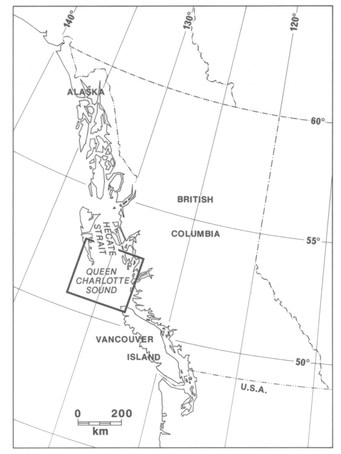

FIGURE 1 – LOCATION OF QUEEN CHARLOTTE SOUND

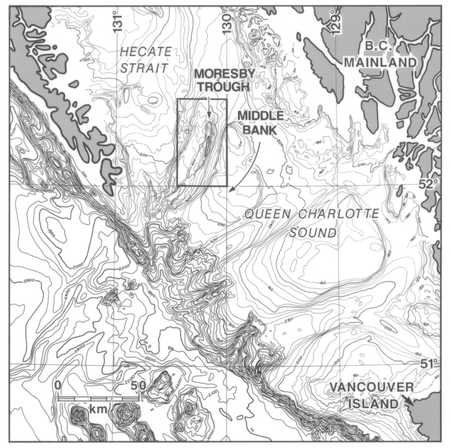

FIGURE 2 – LOCATION OF STUDY AREA IN QUEEN CHARLOTTE SOUND

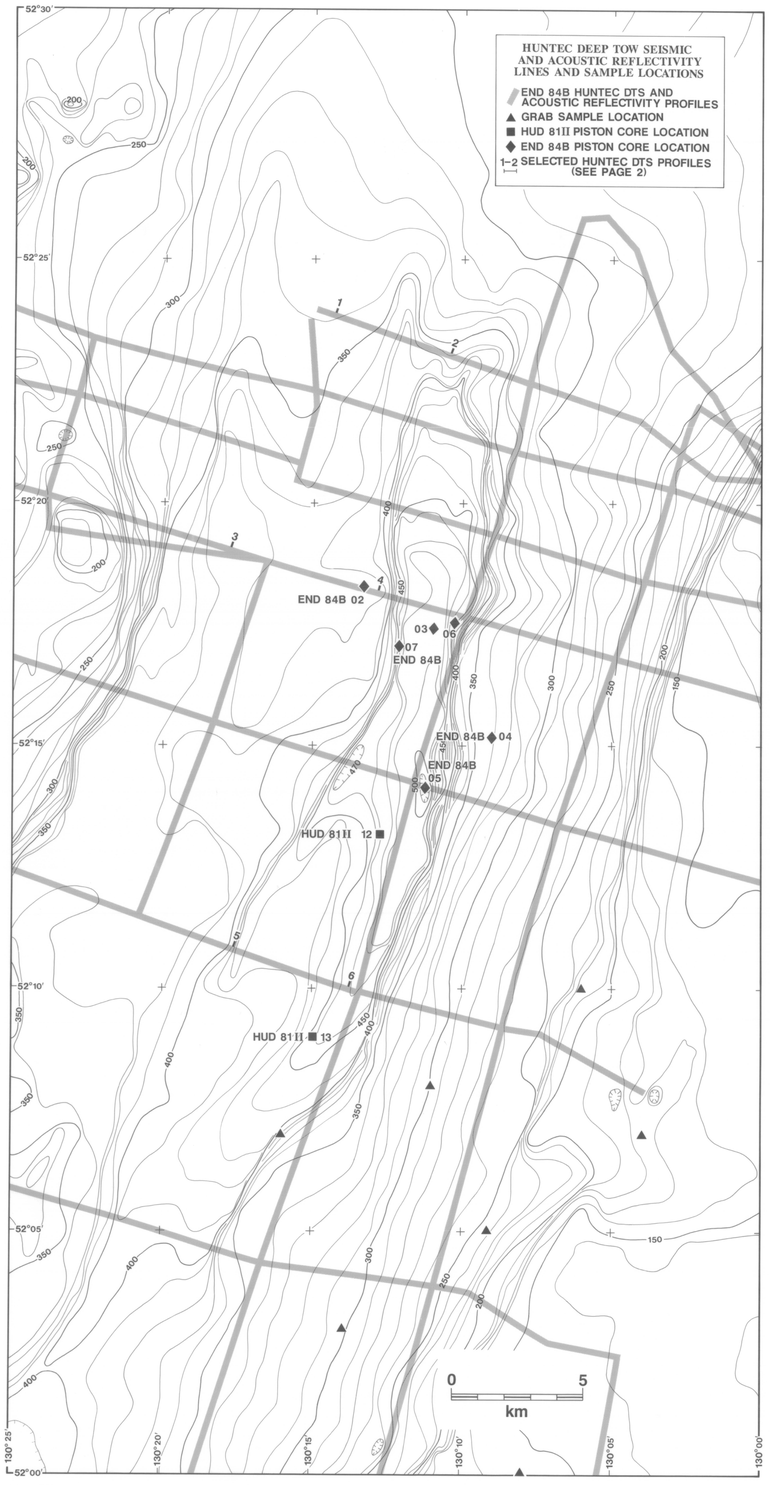

FIGURE 3

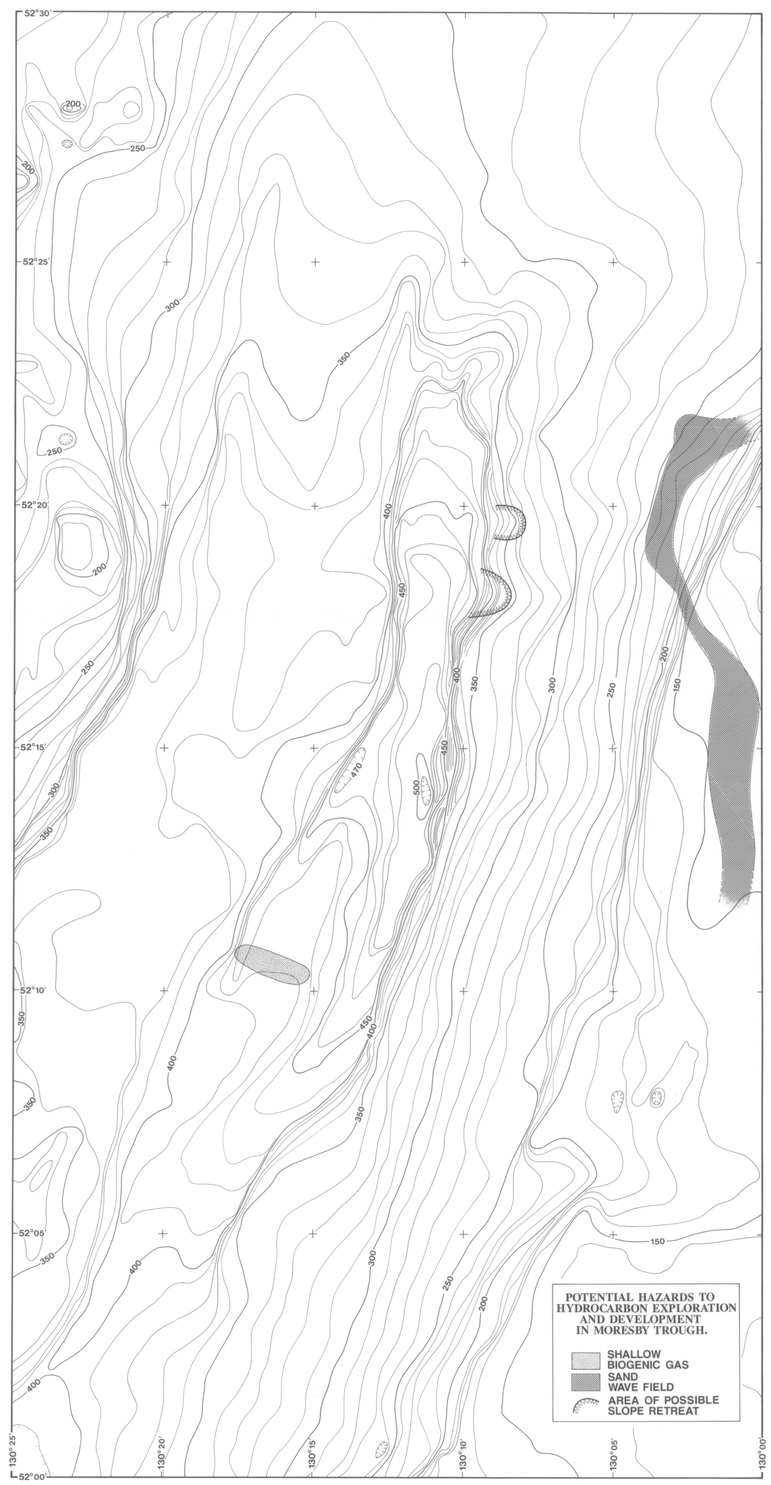

FIGURE 4

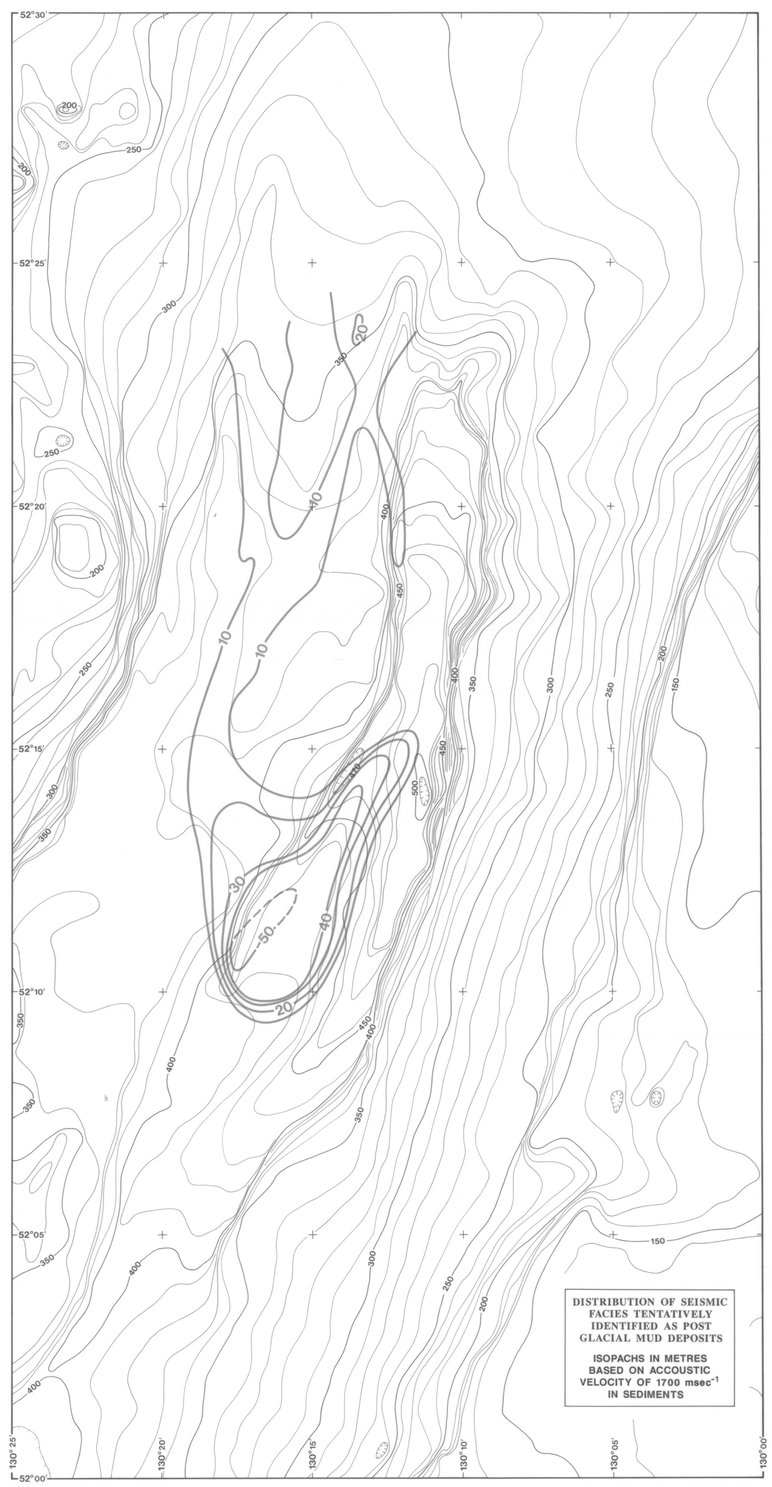

FIGURE 5

SHEET 1 OF 2

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