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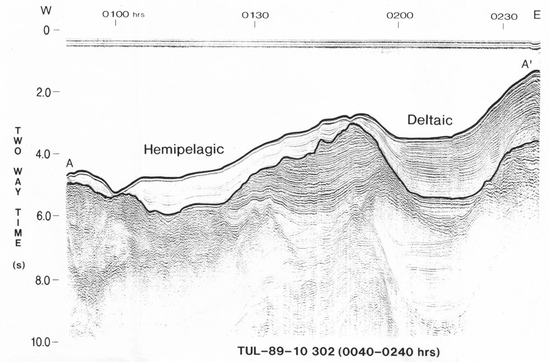
GEOLOGICAL SURVEY OF CANADA
COMMISSION GÉOLOGIQUE DU CANADA

Seismic Stratigraphy of Unconsolidated Sediments in the Central Strait of Georgia: Hornby Island to Roberts Bank

by T.S.Hamilton

Open File 2350



TUL-89-10 302 (0040-0240 hrs)

INTERVAL THICKNESS OF THE ACOUSTICALLY TRANSPARENT FACIES, HOLOCENE TO RECENT DELTAIC DEPOSITS AND HEMIPELAGIC MUDS

This time isopach map of the transparent facies images Mid-Holocene to Recent muds, both hemipelagic and deltaic with a contour interval of 25 ms from 0 to 250 ms. The zero contour or facies edge on this and other isopach maps is a heavy line with tic marks. Isolated thicks are designated "T" while isolated thins are designated "t". The seismic profile is an E-W cross section in two way time from Sturgeon Bank off Point Grey to McCall Bank. The transparent facies, bounded by heavy lines, shows an increasing masking by acoustic gas approaching Sturgeon Bank. Acoustic gas features are the most common in the organic rich sediments of this facies including masks and brightened reflectors. In seismic character, this facies generally has: greatest relief on its base with concordance or baselap, a draping habit, divergent dips upsection, one regionally correlated reflector midway through the sequence and erosional truncation of the uppermost reflectors in shoal areas. The upper truncation on McCall Bank suggests a waning of sedimentation from the North Arm (lobe switching). Velocities in this unit probably range from 1.50 to 1.65 kilometres per second, increasing with depth and towards coarser deltaic facies in the south. Applying a velocity of 1.5 km/s means that the thickness in metres is about 75% of the time isopach, or that in places, there is in excess of 190 metres of sediment. The pronounced features on this map are the three bathyal foredeep accumulations off of the North, Middle and Main Arms of the Fraser River. These piles have a wedge or lens like cross sectional geometry reflecting their slope front position and a Fraser River source. The hemipelagic silt lobes extending to the northwest, delineate trough locations and regional current patterns. Further to the northwest and southeast the transparent facies thins and breaks up. There, the Fraser River silt is absent, and sources are limited to the local reworking of older unconsolidated sediment. This map represents the main volume of fine grained and acoustically transparent or faintly laminated sediments which comprising the upper portion of the Holocene record. It does not include thin veneers of coarse or lag facies in shallow and coastal settings distal to the Fraser River.

Kilometres 5 0 5 10 15

Nautical Miles 5 0 5 10

Statute Miles 5 0 5 10 15

SCALE 1 : 125,000