CONTINENT - OCEAN TRANSECT B1: INTERMONTANE BELT (SKEENA MOUNTAINS) TO INSULAR BELT (QUEEN CHARLOTTE ISLANDS).

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This display illustrates the geological architecture,tectonic style and geophysical expression of the northern Canadian Pacific continental margin in the vicinity of the modern triple junction between the Pacific,America and Juan de Fuca Plates. In addition to active transform and convergent tectonics, the region embraces the junctions between allochthonous, or suspect terranes. The tectonic history, distribution and suture between two of these terranes, Wrangellia and the Alexander Terrane, is partly based upon interpretations of geophysical data beneath water-covered areas and, as such, is somewhat conjectural.

The sources of information for the display are published and unpublished maps, reports and data files of the Geological Survey of Canada, Earth Physics Branch, Departments of Geology and of Geophysics and Astronomy, both at the University of British Columbia, and the Geological Branch of the British Columbia Ministry of Energy Mines and Petroleum Resources. Unpublished geophysical and subsurface sample information has been provided by Chevron Standard Ltd. and Shell Canada Resources Ltd.

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The display is presented on two sheets:

Sheet 1

Figure 1. Location map: Distribution of tectonostratigraphic terranes and generalized modern plate tectonic regime. The black line shows the locus of cross-sections.

Figure 2. Geological Map: Colour = age of protolith. Shows location of geological and geophysical cross-sections and profiles, exploratory well locations and terrane boundaries. Scale = 1 to 1,000,000. See NOTES.

Figure 3. Gravity Map: Bouguer anomaly over land areas, free air anomaly over marine areas. Shows location of geological and geophysical cross-sections and profiles. Contour interval = 10 milligals. Reference IGSN 71, GRS 67. Scale = 1 to 1,000,000.

Figure 4. Magnetic Anomaly Map: Shows location of geological and geophysical cross-sections and profiles. Contour interval = 100 nT. Reference = IGRF 1975 . Scale = 1 to 1,000,000.

Figure 5. Heat Flow and Bathymetry: Heat Flow in mWm^{-2} and bathymetry in meters. Scale = 1 to 3.6×10^6

Figure 6. Seismicity: Epicentre locations, magnitude and two fault plane solutions. Scale = 1 to 3.6×10^6.

Figure 7. Tectonic Flow Diagram: Colour = Tectonic environment. Explanatory notes below diagram. Shows time of accretion of suspect terranes (Wrangellia, Alexander Terrane, Stikinia and Cache Creek Terrane). See NOTES.

Legend: Left hand vertical column coloured according to age of protolith; top horizontal row coloured according to tectonic environment of protolith.

Sheet 2

Figure 8. Geophysical profiles and gravity crustal model: Geophysical profiles : Gravity - observed and calculated, Magnetics and Heat Flow (from Figure 5). Scale = 1 to 500,000.

Figure 9. Geological Cross-section: Colour = Tectonic Environment. Scale = 1 to 500,000. No vertical exaggeration. Seismic refraction ray-path solution model shown below western end of profile at same scale.

Figure 10. Geological Cross-section: Colour = age of protolith. Scale = 1 to 500,000. No vertical exaggeration.