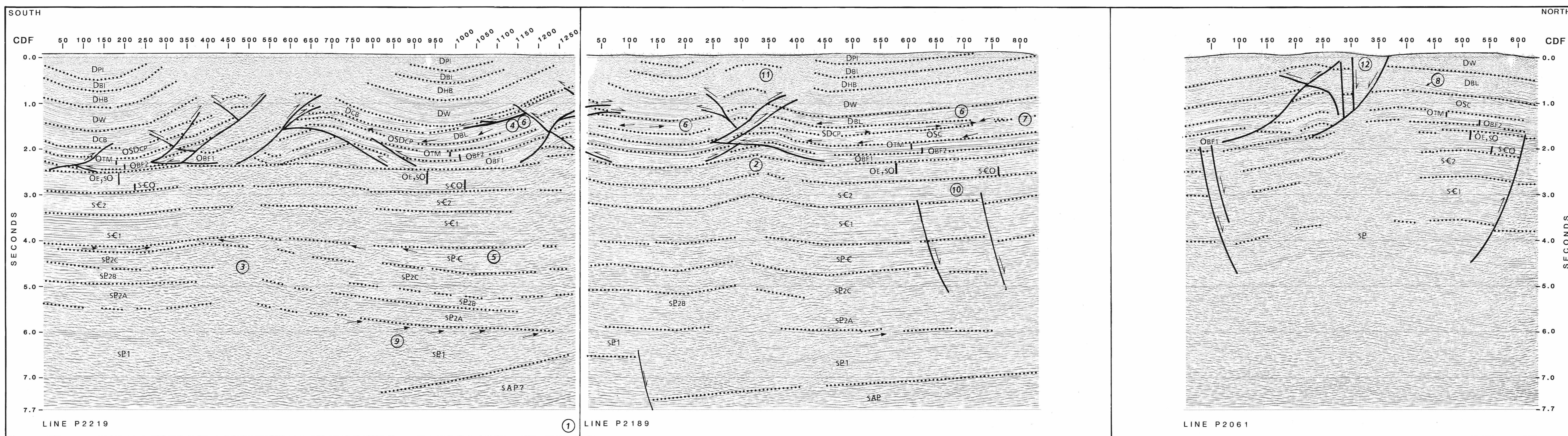
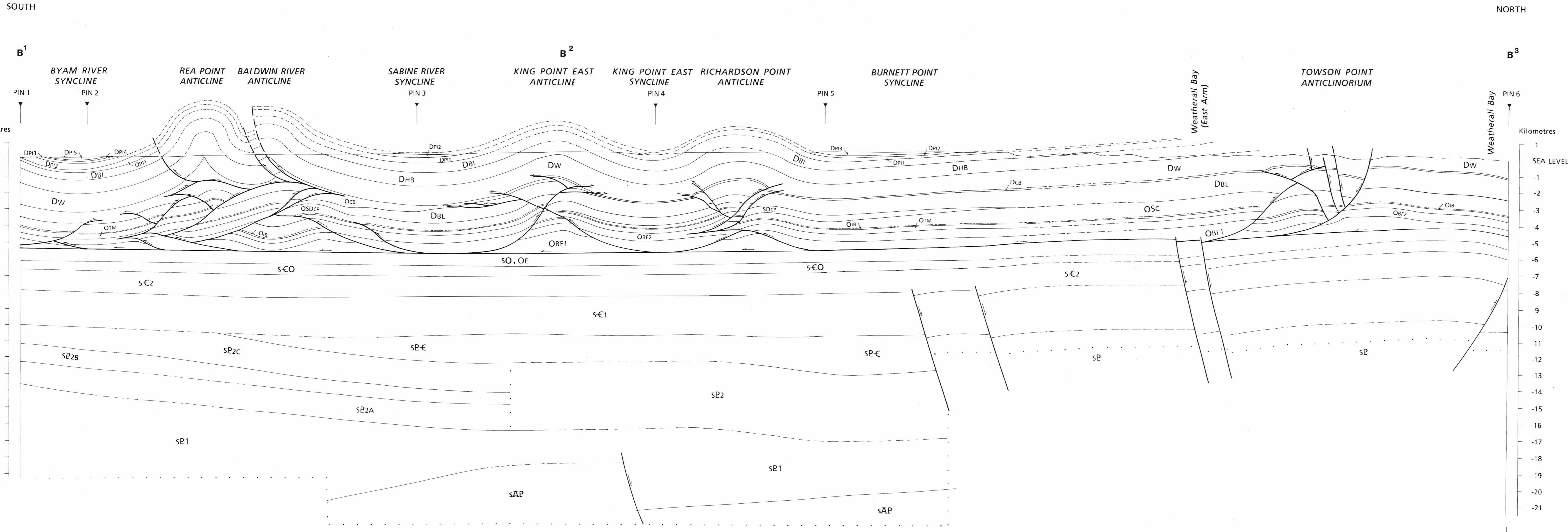


INTERPRETED SEISMIC DATA

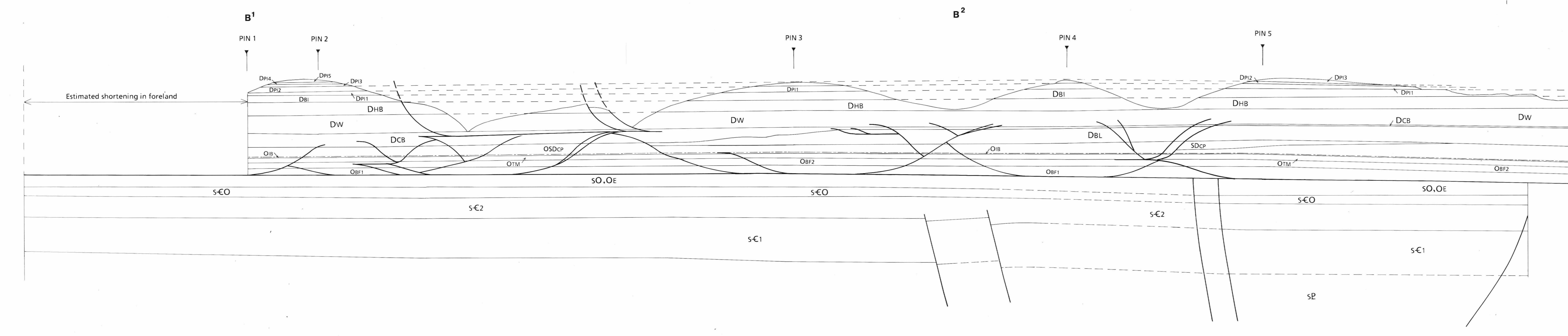


- NOTES TO ACCOMPANY SECTION B**  
(Seismic lines P2219, P2189, and P2061)
- Acquisition and Processing**
- Lines P2219 and P2189 do not intersect. Physical splice is made at closest points of the two surveys. The splice point on P2189 (CDF 25) is 9 km east and along strike from the splice point on P2219 (CDF 1284). Offset of surveys has resulted in some mismatch of deeper reflectors.
  - The apparent relief on and below the Eleanor River (OI) and unit IO interval and centred on CDF 325, line P2189, is interpreted as residual velocity pull-up, complicated by over migration hyperbolae deeper in the section.
  - Correlation of Proterozoic reflections between CDF 250 and 800, line P2219, must take into account up to 200 ms of velocity pull-up and the masking effects of over migration hyperbolae.
- Seismic Stratigraphic Features**
- A chaotic internal reflection configuration with an irregular upper bounding reflector typifies the southern limit of the Blue Fiord (Dbl) between CDF 350 and 1150, line P2219. The Blue Fiord thins and passes laterally to the south into a condensed interval with parallel continuous internal reflections. In these areas the thinned Blue Fiord section is overlain by a greatly thickened Cape De Bray (OBI) interval. North of CDF 1150, the equivalent section of the Blue Fiord is also characterized by continuous parallel reflections but the overlying Cape De Bray unit is thin.
  - An excellent example of the Proterozoic and Cambrian seismic units and all the Ordovician to Devonian seismic stratigraphy is documented on line P2219 between CDF 800 and 1200.
  - Cliniform reflectors with downlap and apparent toplap relations are observed at three locations in the medial Blue Fiord (Dbl) interval. These features testify to the overall progradational character of the unit.
  - Weak cliniform reflectors with downlap and apparent toplap patterns occur in unit OSC on line P2189 (CDF 350 to 750). A strong upper reflection with basal onlap patterns marks the transgressive base of overlying unit SDc.
  - The reflection at 500 to 750 ms beneath CDF 375 to 500, line P2061, may be a pegleg multiple of the top Dbl primary reflection.
- Structural Features**
- A possibly unique example of an apparent structural discordance between units SB2A and SB1 occurs at 5700 to 6000 ms, CDF 750 to 1250, line P2219.
  - Features near CDF 610 and 735, line P2189, can be interpreted as growth faults active during deposition of unit SC2. Change in unit thickness may also have been caused by lateral movement on the faults.
  - A good example of a pop-up structure is observed beneath CDF 325, line P2189.
  - Kinematic data from surface geology in the Blue Fiord (Dbl) interval of the poorly imaged structure beneath CDF 275 to 375, line P2061, indicate the existence of both thrusts and sinistral strike slip faults.
- Depth Conversion**
- Dbl: 3.1 km s<sup>-1</sup> (south) - 3.6 km s<sup>-1</sup> (north)  
 Dbl: 4.2 km s<sup>-1</sup>  
 Dw: 4.0 km s<sup>-1</sup> (south) - 4.2 km s<sup>-1</sup> (north)  
 Dca: 3.9 km s<sup>-1</sup>  
 OSC: 5.0 km s<sup>-1</sup> (south) - 5.5 km s<sup>-1</sup> (north)  
 OBI, OSC, SB2B: 6.1 km s<sup>-1</sup> (south) - 5.0 km s<sup>-1</sup> (north)  
 OBI: 5.3 km s<sup>-1</sup>  
 SB2C: 5.7 km s<sup>-1</sup>  
 below SB2C: 6.2 km s<sup>-1</sup>
- Method of Cross-section Construction and Restoration**
- Bed length measurement and balancing of the contacts above OBI1, OBI2, OBI, OSC and OSDc between pairs of adjacent pin lines.
- Bed length measurement of the contacts above OI and Dbl (or Dca), where Dbl is absent north of pin line 5).
- Area measurement and restoration of OBI1, Dca, Dw, Dbl, Dbl, Dbl. This method assumes that horizontal shortening of units OBI1 and Dca-Dbl is the same as that expressed by bed lengths of contacts above OBI1-OSDc.
- Results**
- Section length: 91.1 km  
 Bed length of OBI (this section): 105.8 km  
 Shortening of OBI (this section): 105.8 - 91.1 = 14.7 km (14.0%)  
 Estimated shortening in foreland\*: 13.6 km  
 Total shortening of OBI from foreland: 14.7 + 13.6 = 28.3 km (10.4%)
- Bed length of OI (this section): 91.1 km  
 Shortening of OI (this section): <0.1 km  
 Estimated shortening in foreland\*: nil  
 Total shortening of OI from foreland: <0.1 km
- Deformed state bed length of Dw: 97.2 km  
 Apparent shortening of Dw (this section): 97.2 - 91.1 = 6.1 km (6.2%)  
 Estimated apparent shortening in foreland\*: 7.9 km  
 Total apparent shortening of Dw from foreland: 6.1 + 7.9 = 14.0 km (5.4%)
- Range of assumed tectonic thickening of Dw-Dbl (approximate): 3 - 19%
- \*Foreland shortening is carried over to this section along the axial trace of Byam River Syncline from pin line 5 on Section C.

DEFORMED STATE CROSS-SECTION



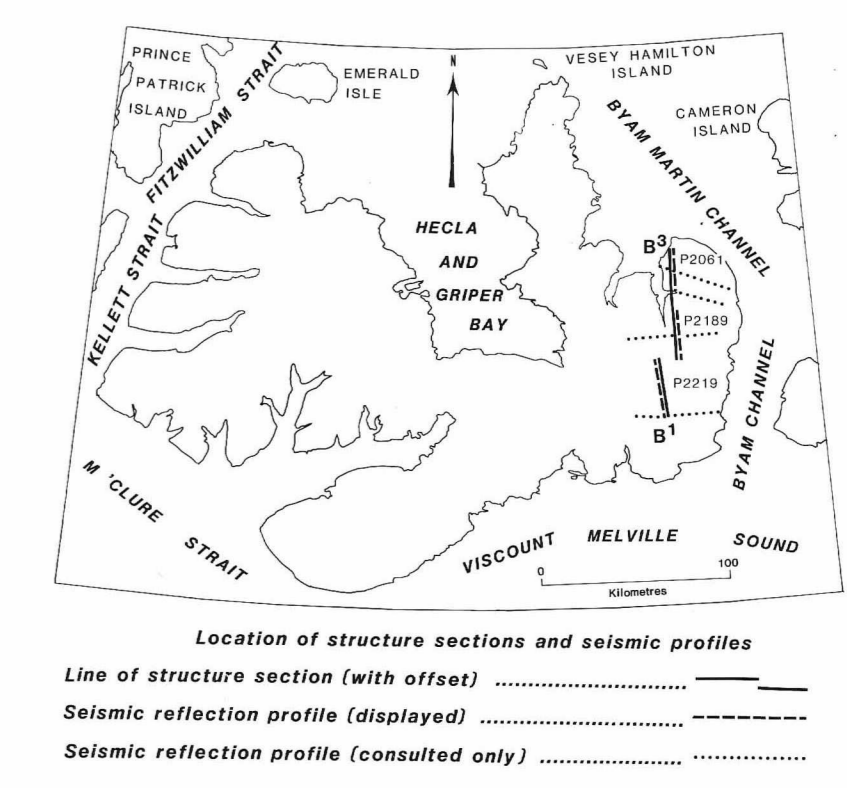
RESTORED STATE CROSS-SECTION



SECTION B  
**HEADWATERS OF BYAM RIVER TO  
 DOMETT POINT ON WEATHERALL BAY,  
 MELVILLE ISLAND**  
 Scale 1:125,000

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 GEOLOGICAL SURVEY  
 COMMISSION GEOLOGIQUE  
 OTTAWA

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Location of structure sections and seismic profiles  
 Line of structure section (with offset)  
 Seismic reflection profile (displayed)  
 Seismic reflection profile (consulted only)

