

DESCRIPTIVE NOTES FOR VERTICAL GRADIENT MAPS

This map has been compiled from digitally-recorded high-sensitivity aeromagnetic data obtained by two self-orienting cesium vapour magnetometers installed in twin tail booms mounted on the GSC Beechcraft 380 aircraft. The magnetometers are vertically separated by a distance of 2.05 metres with each measuring the total magnetic field to a resolution of 0.005 gammas.

Flight altitude was 150 m above ground at 300 m average flight line spacing. Double control lines were flown at an average spacing of 7.5 kilometres.

The vertical gradient values, which approximate closely to the first vertical derivative of the earth's total field, are obtained by dividing the difference between the total field readings of the two magnetometers by their vertical separation.

The vertical gradient data was filtered with a digital operator to remove instrument noise. The vertical gradient data from the control lines was not used in the compilation of the map. The data was edited, compiled, levelled and gradient values for contouring interpolated onto a square grid (0.25 cm grid spacing at 1:25,000 map scale) by automatic computer processes. The final data grid was contoured and plotted at 1:20,000 scale using the automatic contouring program and digital plotter facilities of Dataplotting Services Ltd. The survey data used to compile this map is available in digital form from the Geological Survey of Canada on a cost recovery basis.

Airborne survey and digital compilation was carried out by Resource Geophysics and Geochemistry Division, Geological Survey of Canada. The survey operations took place in May and June 1981 using Beechcraft Queenair 65-380 aircraft C-7420.

This was a shared-cost project of the Manitoba Energy and Mines Division and the Geological Survey of Canada.

#### MAGNETIC CONTOUR LINES

- +5 gammas/metre.....
- +1 gammas/metre.....
- +0.25 gammas/metre.....
- 5 gammas/metre.....
- 1 gammas/metre.....
- 0.25 gammas/metre.....
- (1 gamma = 1 nanotesla in SI units)
- Flight lines.....
- Flight altitude: 150 m above ground level

GEOLOGICAL SURVEY OF CANADA  
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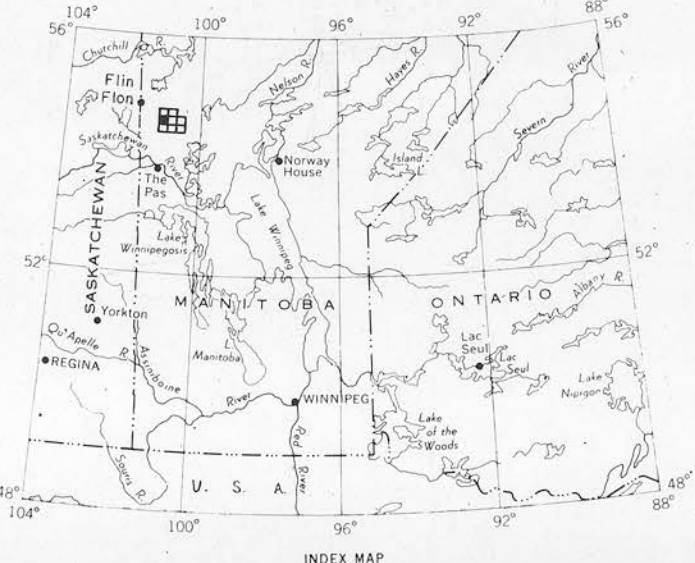
### 63 K/11a,b MANITOBA VERTICAL GRADIENT

Scale 1:20 000 Échelle

Metres 600 0 600 1200 1800 Mètres

Feet 2000 0 2000 4000 Pieds

Universal Transverse Mercator Projection Projection transversale universelle de Mercator  
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