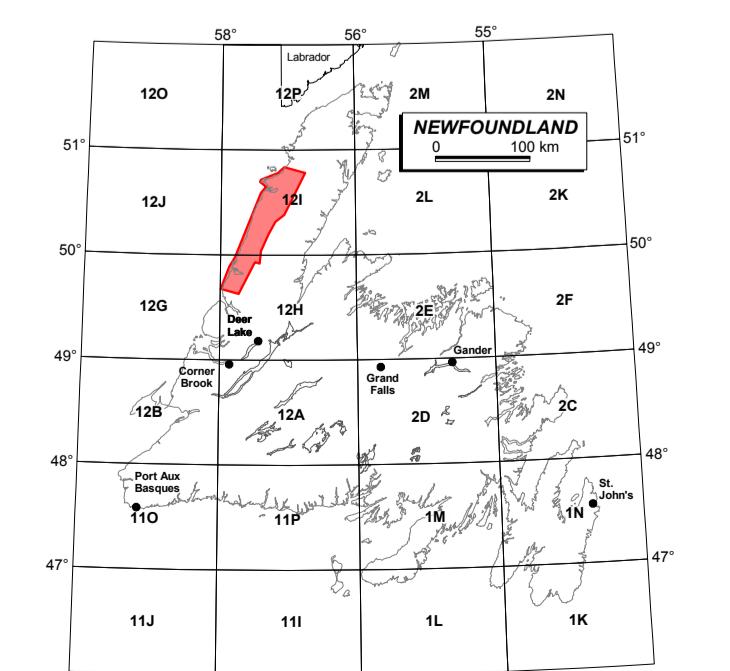


Compilation and map production by
Novatem Inc., Mont-St-Hilaire, Québec.
Contract and project management by the
Newfoundland and Labrador Department of Natural Resources.
Funding for the survey was provided by
Nalcor and the Newfoundland and Labrador
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MAP 2009-76
INDIAN LOOKOUT / PORTLAND CREEK - NTS 12I/03 (west) and 12I/04 (east)

Scale 1: 50 000
kilometres 1000 0 1000 2000 3000 4000 5000 metres
NAD83 / UTM zone 21N
Digital Topographic Data provided by Geomatics Canada, Natural Resources Canada



INDEX MAP

**FIRST VERTICAL DERIVATIVE OF THE
RESIDUAL MAGNETIC FIELD**
Indian Lookout - Portland Creek Map Area

12I/03 (west) and 12I/04 (east)

MAP 2009-76

OPEN FILE NFLD/3076

L.A. Cook and G.J. Kilfoil

First Vertical Derivative of the Residual Magnetic Field

This map was derived from data acquired during an aeromagnetic survey carried out by NOVATEM Inc. The survey was flown during the period October 1st, 2008 to May 16th, 2009, using a Cessna-185 aircraft C-FARU. The aircraft was equipped with two Geometrics cesium vapour magnetometers with a sensitivity of 0.005 nT, installed in wingtip pods. Total field data were sampled at 10 Hz. The survey was conducted at an altitude of 200 m and a ground speed of 200 m and the aircraft flew at a nominal terrain clearance of 50 m. Traverse lines were spaced at 2000 m with orthogonal control lines. The flight path was recovered following post-flight differential corrections to the raw Global Positioning System data and inspection of ground images recorded by a vertical motion camera. The survey was flown over a pre-determined flight surface to minimize differences in magnetic values between the elevations of control and traverse lines. These differences were computer-analyzed to obtain a mutually leveled set of flight-line magnetic data. The leveled values were then interpolated to a 50 m grid.

The first vertical derivative of the residual magnetic field is the rate of change of the magnetic field in the vertical direction. Computation of the first vertical derivative removes long-wavelength features of the magnetic field and significantly improves the resolution of closely spaced and superimposed anomalies. A property of the first vertical derivative maps is the coincidence of zero-value contour with vertical contacts at high magnetic latitudes (Hood, 1965).

Digital versions of this map can be downloaded, at no charge, from the Newfoundland and Labrador Resource Atlas (<http://gis.geosurve.nl.ca/>), and from the Geological Survey of Newfoundland and Labrador On-Line Geoscience (<http://www.nr.gov.nl.ca/mines&en/geosurve/publications/>).

Corresponding digital profile and gridded data for this survey, as well as for airborne surveys flown over adjacent areas, are also available from the Newfoundland and Labrador Resource Atlas.

Printed copies of this map may be obtained from the Geoscience Publication and Information Section, Geological Survey, Department of Natural Resources, Government of Newfoundland and Labrador, P.O. Box 8700, St. John's, NL, Canada, A1B 4J6.

Nalcor: <http://www.nalcorenergy.com/>
Department of Natural Resources: <http://www.nr.gov.nl.ca/nr/>
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Geological Survey: <http://www.nr.gov.nl.ca/mines&en/geosurve/>
E-mail: pub@gov.nl.ca

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1965. Gradient measurements in aeromagnetic surveying. *Geophysics*, vol. 30, p. 891-902.

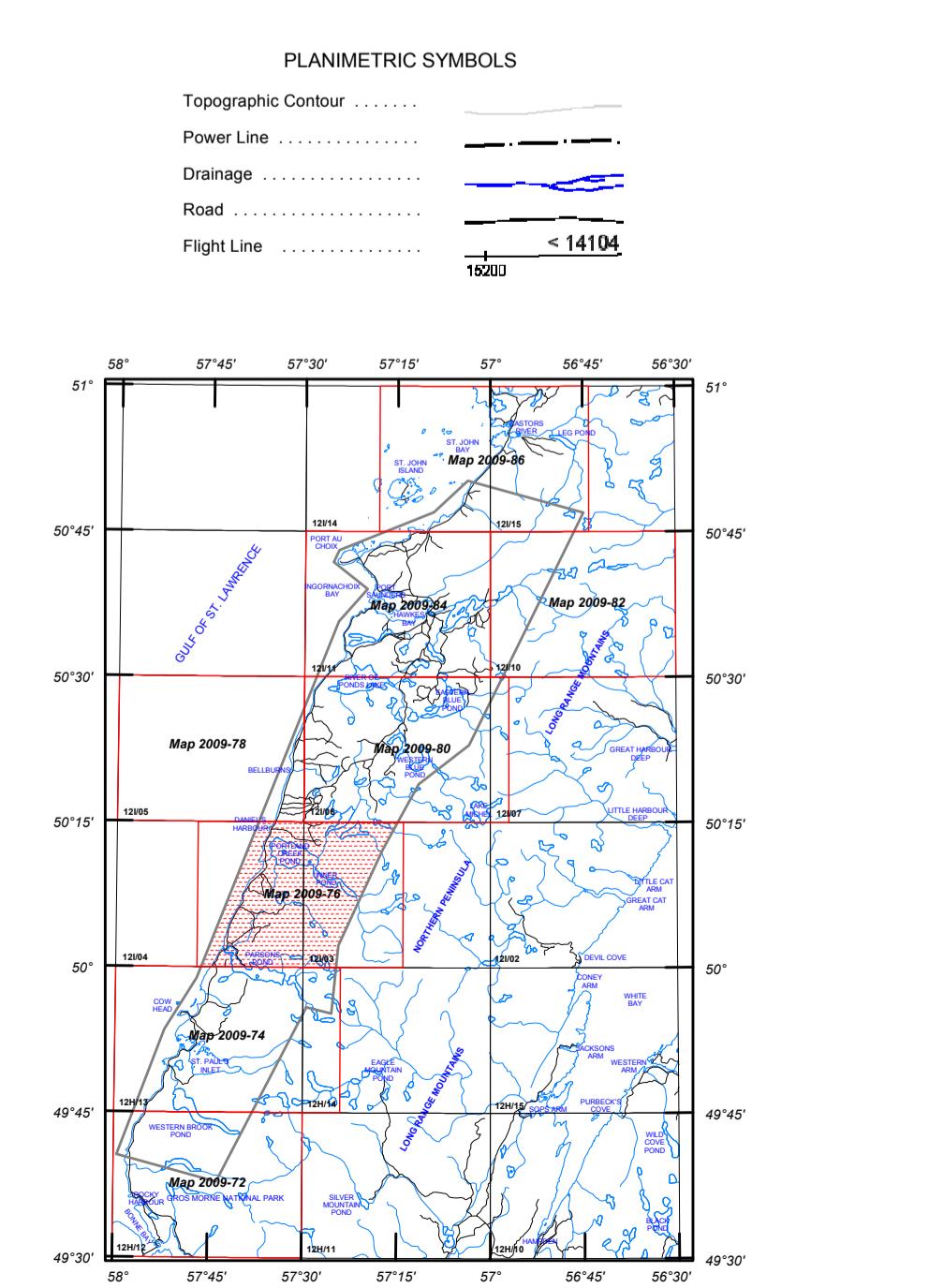
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Maps released as part of Open File Open File NFLD/3076 are (refer to index map below):

Map Area (NTS)	Residual Magnetic Field	First Vertical Derivative of the Residual Mag. Field
Gros Morne (12H/12)	Map 2009-71	Map 2009-74
St. Peter's Inlet (12H/13)	Map 2009-73	Map 2009-74
Indian Lookout - Portland Creek (12I/03 east, 12I/04 west)	Map 2009-75	Map 2009-76
Bellburns (12D/5)	Map 2009-77	Map 2009-78
Bellburns (12D/6)	Map 2009-79	Map 2009-80
Torrent River (12I/10)	Map 2009-81	Map 2009-82
Port au Choix (12I/11)	Map 2009-83	Map 2009-84
St. John Island - Castors River (12I/14 east, 12I/15 west)	Map 2009-85	Map 2009-86

Note
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AEROMAGNETIC SURVEY - GROS MORNE TO PORT AU CHOIX AREA