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Ontario Geological Survey 2016. Airborne magnetic and gravimetric surveys, shaded colour image of the second vertical derivative of the residual magnetic field and Keating correlation coefficients, Pays Plat Lake area; Ontario Geological Survey, Map 60 478, scale 1:20 000.

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**SURVEY SPECIFICATIONS**

- **Declination** = 45°
- **Initial sample interval**: 128 readings per second
- **Final sample interval**: 2 readings per second
- **Sensitivity**: 0.005 nT
- **Type**: Britten-Norman BN2B-21 Islander
- **False easting**: 500 000 m
- **Central meridian**: 87°W (UTM zone 16N)
- **Datum**: NAD83
- **Projection**: Universal Transverse Mercator
- **Control line direction**: north-south
- **Traverse line spacing**: 100 m
- **Nominal aircraft terrain clearance**: 80 m
- **Type**: Geometrics Ltd. G-822A cesium split beam
- **Navigation acquisition**: SGDAS
- **Barometric altimeter**: Honeywell Sensotec digital barometric pressure sensor
- **GPS sample interval**: 10 readings per second
- **GPS receiver**: NovAtel® OEMV®

**KEATING CORRELATION COEFFICIENTS**

- Keating correlation coefficients for the second vertical derivative of the magnetic field strength are shown.

The magnetic declination, for centre of the map area, was approximately 5°45′W in 2016.

Magnetic field strength was 56 882 nT at 380 m above ground level. The magnetic field was computed directly from the gridded magnetic intensity data, based on the identification of roughly 0.5 km scale and wavelength features of the magnetic field and significantly narrower wavelength features of the residual magnetic field. The second vertical derivative of the magnetic field and Keating correlation coefficients were computed from the residual magnetic field. Possible sources of magnetic anomalies due to kimberlite pipes have been identified from the residual magnetic field anomalies. These sources correspond to reversely magnetized sources. It is important to be aware that other magnetic sources may correlate well with the residual magnetic field. Possible kimberlite targets have been identified from the residual magnetic field, second vertical derivative, and Keating correlation coefficients. It is recommended that reference be made to the International Geomagnetic Reference Field (IGRF).

**LEGEND**

- (nT/m²)
- Shaded colour image of the second vertical derivative of the magnetic field
- EW
- Negative correlation

**SOURCES OF INFORMATION**

- Map 60 478, scale 1:20 000. Data acquisition and data compilation by Sander Geophysics Ltd., Toronto, Ontario.
- Data reprocessing and map production by Scott Hogg and Associates Ltd., Toronto, Ontario.
- Base map information derived from the Land Information Ontario area; Ontario Geological Survey, Geophysical Data Set 1249.
- Overburden thickness: 3.0 m (average)
- Cylinder length: infinite

**DATA ACQUISITION**

- The second vertical derivative of the magnetic field is the rate of change in the magnetic intensity data, based on the identification of roughly 0.5 km scale and wavelength features of the magnetic field and significantly narrower wavelength features of the residual magnetic field. The second vertical derivative of the residual magnetic field and Keating correlation coefficients were computed from the residual magnetic field.

**GEOLOGICAL INFORMATION**

- Users of OGS products are encouraged to contact those Aboriginal communities whose traditional territories may be affected by the survey.

**DATA PROCESSED**

- Surveys, magnetic and gravimetric data, grid and profile data (ASCII and Geosoft® formats) and vector data, Pays Plat Lake area; Ontario Geological Survey, Geophysical Data Set 1249.