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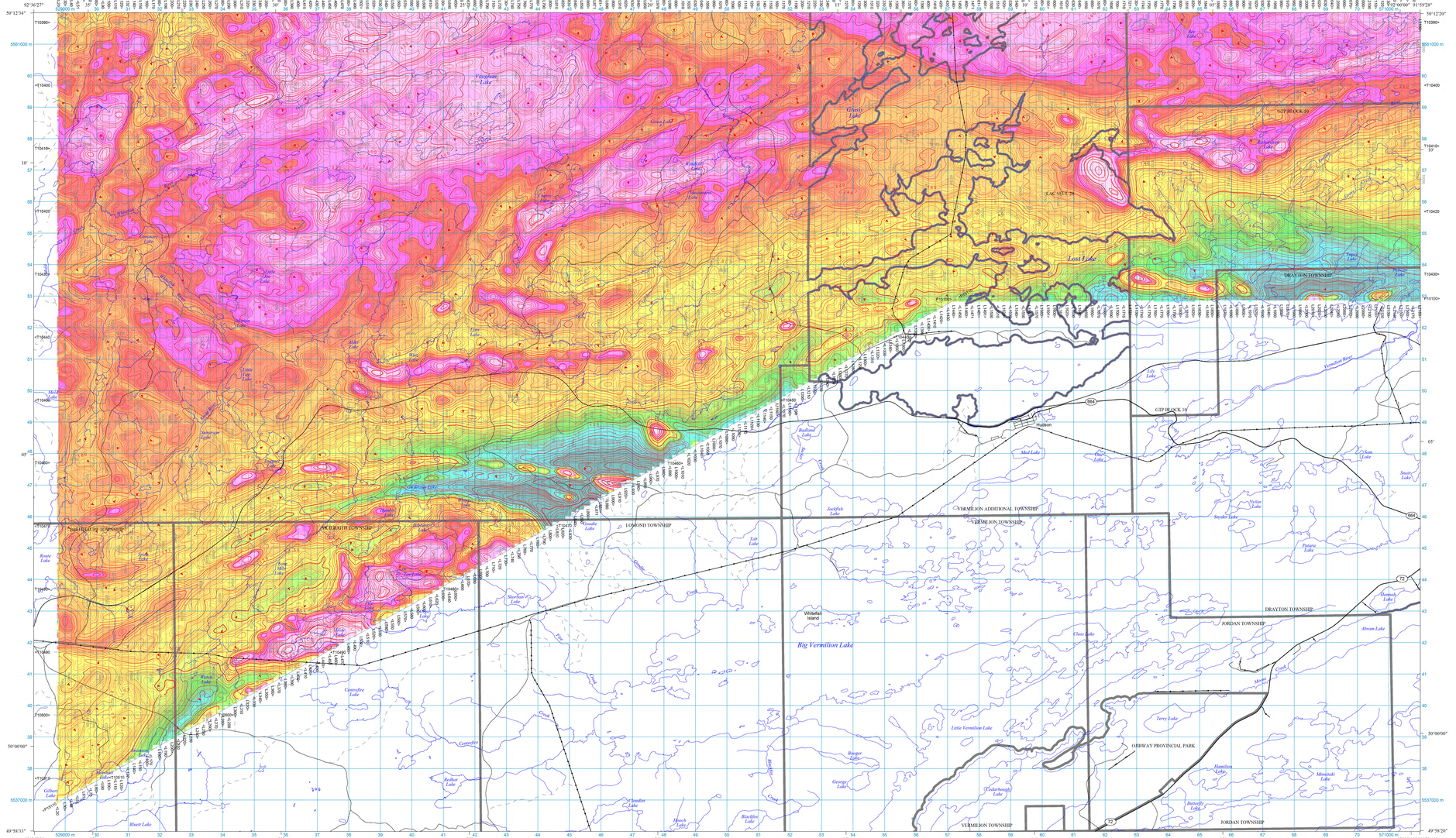

LEGEND

FLIGHT LINE INFORMATION

Line number → 12345 ← Line direction

← Fiducial

MAGNETIC CONTOURS

nanoteslas (nT)

- 5 nT contour
- 20 nT contour
- 100 nT contour
- 500 nT contour
- Magnetic depression

RESIDUAL MAGNETIC FIELD GRID

nanoteslas (nT)

520, 405, 350, 315, 280, 250, 225, 200, 175, 155, 135, 120, 100, 75, 50, 25, 0, -25, -50, -75, -100, -120, -135, -155, -170, -195, -225, -275

DESCRIPTIVE NOTES

INTRODUCTION

The data comprising this map are derived from the results of an airborne magnetic gradiometer and gamma-ray spectrometric survey carried out by Terraquest Ltd. The survey was flown using 1 Piper PA-31 Navajo aircraft and 1 King Air C-90 aircraft. The aircraft were equipped with 3 Scintrex and 1 Geometrics magnetic sensors, Radiation and Pico Envirotec gamma-ray spectrometers, GPS navigation system and digital data acquisition systems.

RESIDUAL MAGNETIC FIELD MAP

The contours of residual magnetic intensity were generated from digitally recorded data. The magnetic data were corrected for diurnal variations, levelled to the control lines and interpolated onto a 40 m regular grid, using a minimum curvature algorithm. A regional correction was applied to level the magnetic field to the Ontario Master Aeromagnetic Grid (Ontario Geological Survey 1999).

Magnetic declination on September 15, 2016, for the centre of the survey area was 1.9°W, magnetic inclination was 75.4° and the magnetic field strength was 57 094 nT at 510 m above WGS84 (calculated using IGRF).

REFERENCES

Ontario Geological Survey 1999. Single master gravity and aeromagnetic data for Ontario; Ontario Geological Survey, Geophysical Data Set 1036.

SURVEY PARAMETERS

AIRCRAFT
- Type: Piper Navajo PA-31-325, Beechcraft King Air C90
- Registration: C-GXKS, C-GCFZ

MAGNETOMETER
- Type: Single cell cesium vapour Scintrex CS-2 and CS-L (C-GXKS); Geometrics G-822A and in tail Scintrex CS-3 (C-GCFZ)
- Sensitivity: 0.005 nT
- Noise level: 0.1 nT
- Sample interval: 10 readings per second
- Sensor locations:
  - Piper PA-31-325 -wingtips (transverse separation: 14.6 m) -tail stinger (longitudinal separation: 9.2 m)
  - King Air C90 -wingtips (transverse separation: 17.63 m) -tail stinger (longitudinal separation: 10.86 m)
- Compensation: RMS DAARCS500 (both aircraft)
- Data acquisition: RMS DAARC500 (both aircraft)

GAMMA-RAY SPECTROMETER SYSTEM
- Type: Radiation Solution RS-500, console RS-501 with crystal detector packs RSX-5 (C-GXKS); Pico Envirotec gamma-ray spectrometer GRSS with crystal detector packs (C-GCFZ)
- Data Acquisition: RMS DAARC (C-GXKS); Laptop (C-GCFZ)
- Downward-looking crystal volume: 33.6 L
- Upward-looking crystal volume: 8.4 L
- Number of channels: 256 (both aircraft)
- Sample interval: 1 reading per second
- Sensor location: near centre of aircraft
- Potassium window: 1370 to 1570 keV
- Uranium window: 1660 to 1860 keV
- Thorium window: 2410 to 2810 keV
- Total count window: 410 to 2810 keV

NAVIGATION SYSTEM
- Survey navigation: Ag-Nav Inc. Guia P151 (both aircraft)
- GPS receiver: Trimble Ag132 (both aircraft)
- GPS sample interval: 10 readings per second
- Radar altimeter: King KRA-10A (both aircraft)
- Radar sample interval: 10 readings per second
- Barometric altimeter: Honeywell PPT0020AWN2VA-C (both aircraft)
- Barometric sample interval: 10 readings per second
- Video flight path camera: Allied Vision Technology, Prosilica GT2450C (C-GXKS); Allied Vision Technology, Manta MG201C (C-GCFZ)
- Navigation-acquisition: RMS DAARC500 (both aircraft)

BASE STATION
- Type: Scintrex CS-2/3 single cell cesium vapour Magnetometer sample interval: 1 reading per second
- GPS sample interval: 1 reading per second

SURVEY SPECIFICATIONS
- Survey date: July 28 to November 2, 2016
- Nominal aircraft terrain clearance: 100 m
- Traverse line spacing: 200 m
- Control line spacing: 2000 m
- Traverse line direction: North-south
- Control line direction: East-west

CO-ORDINATE SYSTEM
- Projection: Universal Transverse Mercator
- Datum: NAD83
- Central meridian: 93°W (UTM zone 15N)
- Central scale factor: 0.9996
- False easting: 500 000 m
- False northing: 0 m

Every possible effort has been made to ensure the accuracy of the information presented on this map; however, the Ministry of Northern Development and Mines does not assume liability for any errors that may occur. Users should verify critical information.

Issued 2017.

Information from this publication may be quoted if credit is given. It is recommended that reference be made in the following form:

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Ontario

Ontario Geological Survey

MAP 82 895

AIRBORNE MAGNETIC GRADIOMETER AND GAMMA-RAY SPECTROMETRIC SURVEYS

Colour-filled contours of the residual magnetic field

LAC SEUL EAST AREA

Scale 1:50 000

1 km 0 1 2 km

NTS References: 52 K/1, 2

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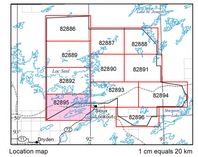

Location map 1 cm equals 20 km

SOURCES OF INFORMATION

Base map information derived from the Land Information Ontario Data Warehouse, Land Information Ontario, Ministry of Natural Resources and Forestry, scale 1:50 000.

Magnetic declination for the centre of the map area was approximately 1°23'W in 2017.

CREDITS

Data acquisition, data compilation and map production by Terraquest Ltd., Markham, Ontario.

Project management and quality assurance by Paterson, Grant and Watson Limited, Toronto, Ontario.

Contract management, base maps and map surrounds by the Ministry of Northern Development and Mines, Sudbury, Ontario.

Corresponding digital data for this survey are available from the following Ontario Geological Survey publication:

Ontario Geological Survey 2017. Ontario airborne geophysical surveys, magnetic gradiometer and gamma-ray spectrometric data (grid and profile data (ASCII format) and vector data, Lac Seul east area, Ontario Geological Survey, Geophysical Data Set 1084a.

Ontario Geological Survey 2017. Ontario airborne geophysical surveys, magnetic gradiometer and gamma-ray spectrometric data, grid and profile data (Geosoft® format) and vector data, Lac Seul east area; Ontario Geological Survey, Geophysical Data Set 1084b.

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