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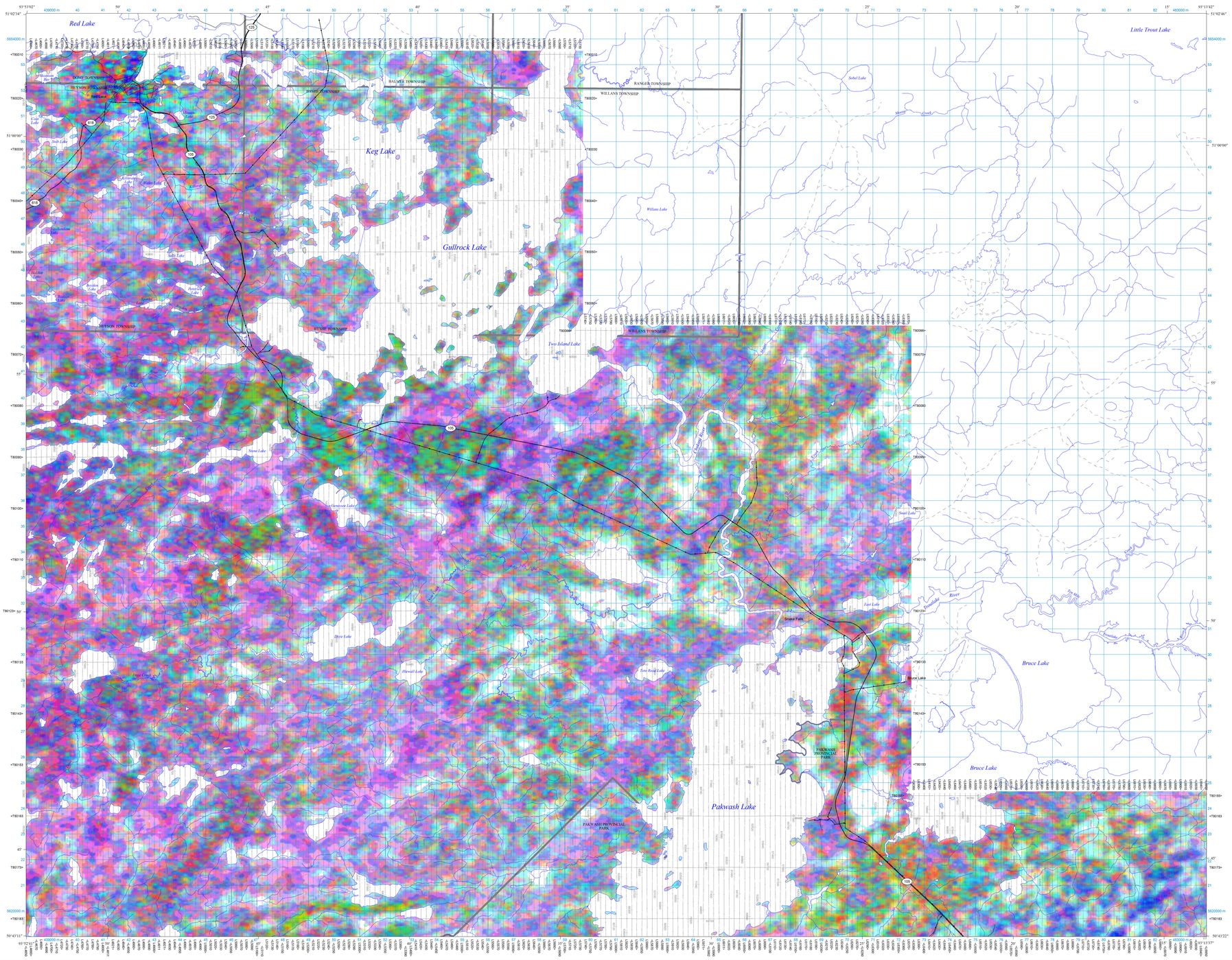


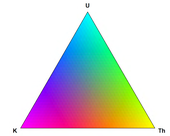
LEGEND

FLIGHT LINE INFORMATION

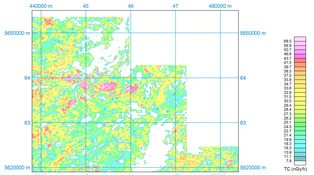
Line number ← Line direction

← Fiducial

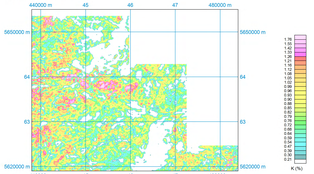
TERNARY RADIOELEMENT IMAGE



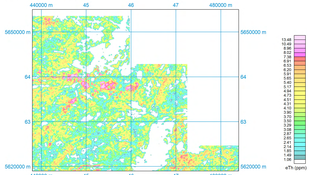
TOTAL COUNT (natural air absorbed dose rate, nGy per hour)



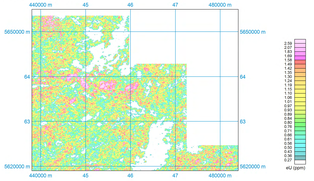
K (potassium concentration, %)



eTh (equivalent thorium, ppm)



eU (equivalent uranium, ppm)



DESCRIPTIVE NOTES

INTRODUCTION

The data comprising this map are derived from the results of an airborne magnetic gradiometer and gamma-ray spectrometric survey flown by Goldak Airborne Surveys. The survey was flown using 2 Piper PA-31 Navajo aircraft and 1 Cessna 208 Caravan aircraft. The aircraft were equipped with 3 Geometrics magnetic sensors, a Radiation Solutions gamma-ray spectrometer, GPS navigation system and a digital data acquisition system.

TERNARY RADIOELEMENT MAP

The ternary radioelement image was prepared by modulating the brightness of each of the primary colours of the colour spectrum using the normalized radioelement counts of potassium (K), equivalent thorium (eTh) and equivalent uranium (eU), respectively. Colour intensity of each component was then scaled by a nonlinear quantization of the component sum to obtain discrete brightness levels. Brighter areas display zones of higher total count. The total count tends to outline unit boundaries and structure.

The gamma-ray spectrometer response represents radioactivity emanating from the upper 30 cm of the earth's surface. The surface concentrations are influenced by varying amounts of outcrop, overburden, vegetation cover, soil moisture and surface water.

SURVEY PARAMETERS

AIRCRAFT
Type: Cessna 208 Caravan, Piper PA-31
Registration: C-GLDX, C-GJBB, C-GJBG

MAGNETOMETER
Type: Geometrics G-822A cesium-vapour
Sensitivity: 0.005 nT
Noise level: 0.05 nT
Sample interval: 10 readings per second
Sensor location:
Piper PA-31 - wingtips (transverse separation: 14.8 m)
- tail stinger (longitudinal separation: 8.8 m)
Cessna 208 - wingtips (transverse separation: 18.3 m)
- tail stinger (longitudinal separation: 11.2 m)

Compensation:
Piper PA-31 - RMS Instruments AADCII
Cessna 208 - RMS Instruments DAARC500
Data acquisition: Goldak Exploration Technologies GEDAS

GAMMA-RAY SPECTROMETER SYSTEM
Type: Radiation Solutions RS-501, Radiation Solutions RSX-5
Downward-looking crystal volume: 33.6 L
Upward-looking crystal volume: 8.4 L
Number of channels: 1024
Sample interval: 1 reading per second
Sensor location: Rear cabin
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
GPS receiver: Novatel OEMV ProPak V3
GPS sample interval: 1 reading per second
Radar altimeter: Thomson CFS ERT-160
Radar sample interval: 10 readings per second
Barometric altimeter: Setra 270
Barometric sample interval: 10 readings per second
Video flight path camera: Panasonic GP-KR222
Navigation-acquisition: Goldak Exploration Technologies GEDAS

BASE STATION
Type: GEM Systems GSM19W
Magnetometer sample interval: 1 reading per second
GPS sample interval: 1 reading per second

SURVEY SPECIFICATIONS
Survey date: July 14 to September 23, 2016
Nominal mean terrain clearance: 100 m
Nominal airspeed: 200 km/h
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

Users of OGS products are encouraged to contact those Aboriginal communities whose traditional territories may be located in the mineral exploration area to discuss their project.

Ontario

Ontario Geological Survey

MAP 82 872

AIRBORNE MAGNETIC GRADIOMETER AND GAMMA-RAY SPECTROMETRIC SURVEYS

Ternary radioelement image

SEPARATION LAKE AREA

Scale 1:50 000

1 km 0 1 2 km

NTS References: 52 K/13, 14

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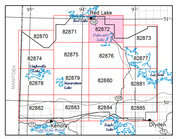

Location map 1 cm equals 25 km

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 0°22'W in 2017.

CREDITS

Data acquisition, data compilation and map production by Goldak Airborne Surveys, Saskatoon, Saskatchewan.

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; Separation Lake area; Ontario Geological Survey, Geophysical Data Set 1083a.

Ontario Geological Survey 2017. Ontario airborne geophysical surveys, magnetic gradiometer and gamma-ray spectrometric data, grid and profile data (Geosoft® format) and vector data, Separation Lake area; Ontario Geological Survey, Geophysical Data Set 1083b.

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.

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