

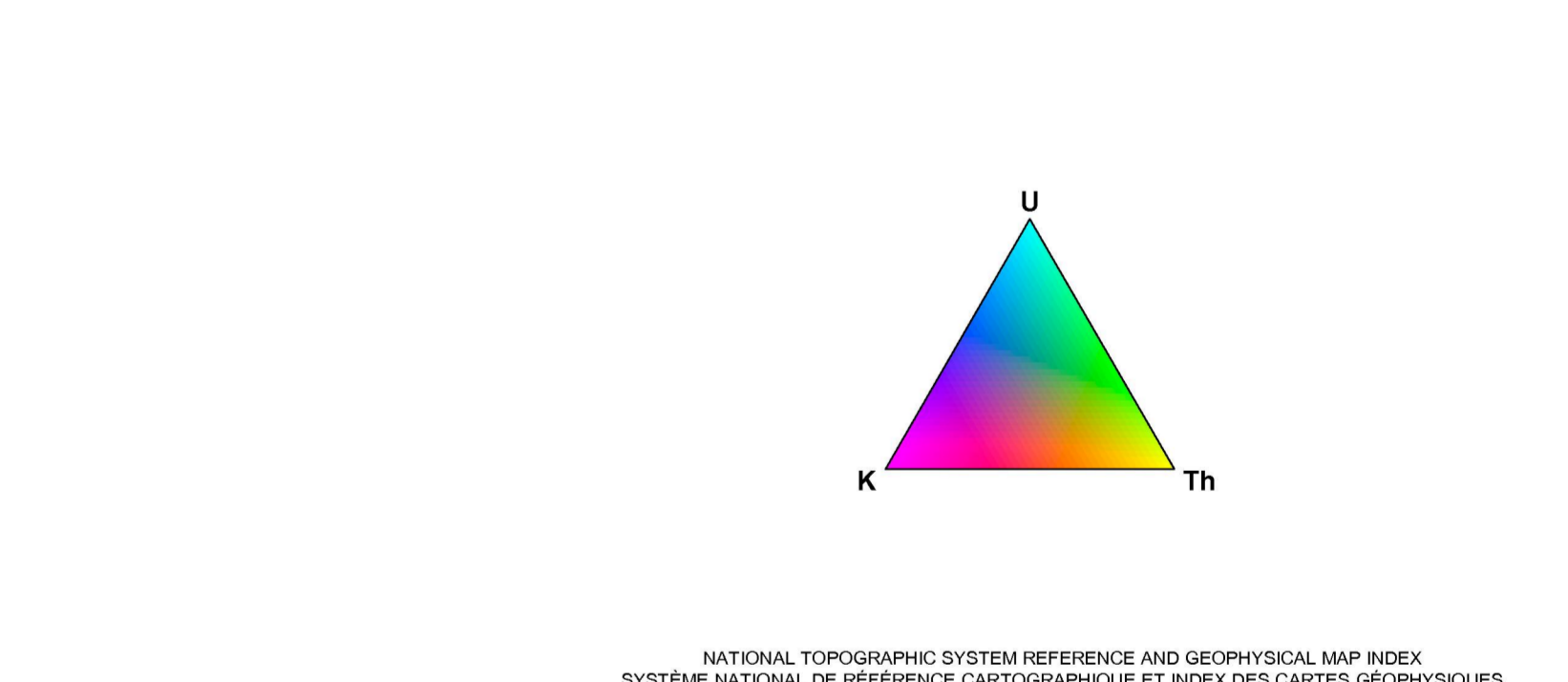
Introduction
A gamma-ray spectrometric and aeromagnetic airborne geophysical survey of the northeast Thelon Basin area, Nunavut, was completed by Geotek Airborne Surveys. The survey was flown from August 26 to September 09, 2009 using three Fiesel PA-31 Navajo aircraft (C-GJBA, C-GJBB, C-GJBG). The nominal traverse and control line spacing were, respectively, 400 m and 2400 m, and the aircraft flew at a nominal terrain clearance of 120 m as depicted between 200 and 270 km/h. Traverse lines were offset 120° with original control lines. The flight path was reconstructed following post-flight differential correction using real-time data recorded by a Global Positioning System. The survey was flown on a pre-determined flight surface to minimize differences in magnetic values at the intersections of control and traverse lines.

Gamma-ray Spectrometric Data
The airborne gamma-ray measurements were made with a Radiation Solutions RS-500 gamma-ray spectrometer using NaI(Tl) crystals. The main detector array consisted of twelve crystals (total volume 50.4 litres). Two crystals (total volume 8.4 litres), shielded by the main array, were used to detect variations in background radon emanation. The system electronics, 1024 channel spectrometers, recorded spectra from the individual NaI(Tl) detectors with no loss of Poisson statistics. Spectral calibration is accomplished by matching the recorded spectra with several natural gamma-ray peaks.

Table 1. Gamma-Ray spectrometer sensitivities for each aircraft.
Table with 4 columns: Element (Potassium, Uranium, Thorium), C-GJBA, C-GJBB, C-GJBG.

Magnetic Data
The magnetic field was sampled 10 times per second using an eight-beam cesium vapour magnetometer (sensitivity = 0.005 nT) rigidly mounted to the aircraft. Differences in magnetic values at the intersections of control and traverse lines were analyzed to obtain a mutually consistent set of flight line data. The leveled values were then interpolated to a 100 m grid. The International Geomagnetic Reference Field (IGRF) defined at the average GPS altitude of 207 m for the year 2009.64 was then removed. Removal of the IGRF leaves the magnetic field of the Earth's core, a residual component related essentially to magnetization within the Earth's crust.

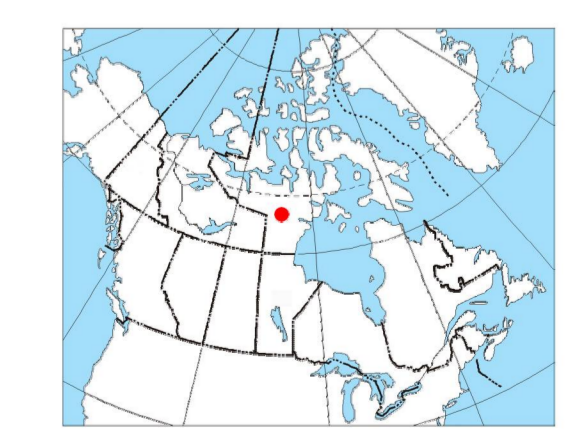
PLANIMETRIC SYMBOLS / SYMBOLES PLANIMÉTRIQUES
Drainage: Dotted line
Flight line: Solid line



Funding for this project was provided through the Strategic Investments in Northern Economic Development (SINED) program of Indian and Northern Affairs Canada and the Geomapping for Energy and Minerals (GEM) program of the Earth Sciences Sector, Natural Resources Canada. Project management and data quality control procedures were carried out by the Geological Survey of Canada, GSC, under the GEM program.

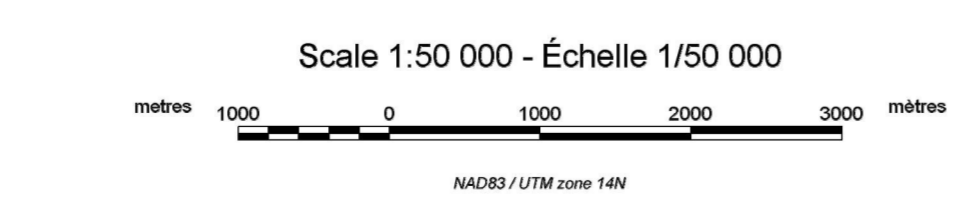
GSC OPEN FILE 6527 / DOSSIER PUBLIC 6527 DE LA CGC
GEOPHYSICAL SERIES / SÉRIE DES CARTES GÉOPHYSIQUES
AIRBORNE GEOPHYSICAL SURVEY OF THE NORTHEAST THELON BASIN, NUNAVUT
LEVÉ GÉOPHYSIQUE AÉROPORTE DE LA PARTIE NORD-EST DU BASSIN DE THELON, NUNAVUT

TERNARY RADIOELEMENT MAP / DIAGRAMME TERNAIRE DES RADIOÉLÉMENTS

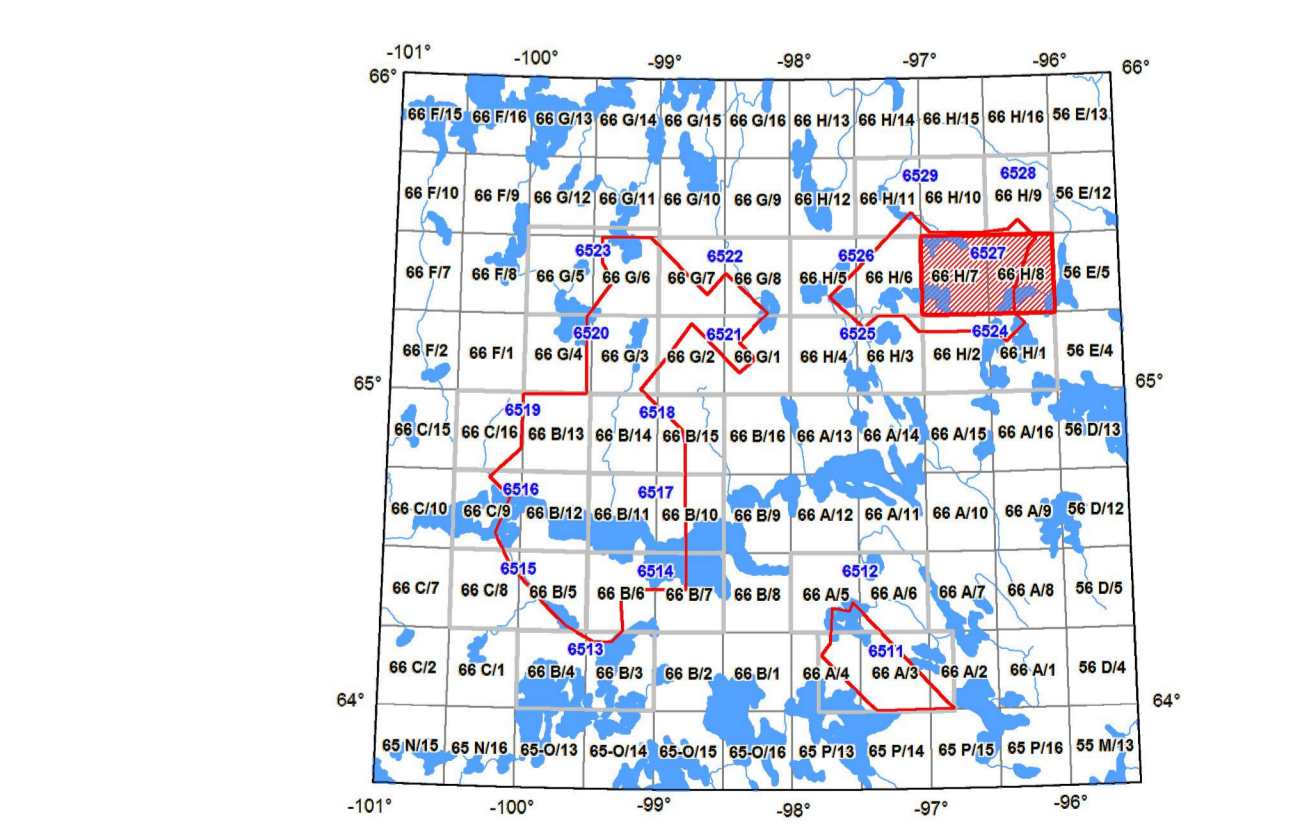


Authors: Harvey, B.J.A., Coyle, M., Buckle, J.L., Carson, J.M. and Hefford, S.W.
Data acquisition, compilation and map production by Geotek Airborne Survey, Saskatoon, Saskatchewan. Contract and project management by the Geological Survey of Canada, Ottawa, Ontario.

Auteurs: Harvey, B.J.A., Coyle, M., Buckle, J.L., Carson, J.M. et Hefford, S.W.
L'acquisition, la compilation des données ainsi que la production des cartes furent effectuées par Geotek Airborne Survey, Saskatoon, Saskatchewan. La gestion et la supervision du projet furent effectuées par la Commission géologique du Canada, Ottawa, Ontario.



MAP SHEET SUMMARY / SOMMAIRE DES FEUILLETS
List of 10 map sheets with their corresponding map/carte titles.



OPEN FILE / DOSSIER PUBLIC 6527
600,000x400,000 or Canada, Commission géologique du Canada, 2011

Recommended citation: Harvey, B.J.A., Coyle, M., Buckle, J.L., Carson, J.M., and Hefford, S.W., 2011. Airborne Geophysical Survey of the Northeast Thelon Basin, Nunavut. Geophysical Series / Série des cartes géophysiques, 6527. Geological Survey of Canada, Ottawa, Ontario.
Nomenclature géographique conseillée: Harvey, B.J.A., Coyle, M., Buckle, J.L., Carson, J.M. et Hefford, S.W., 2011. Levé des cartes géophysiques aéroporté de la partie nord-est du bassin de Thelon, Nunavut. Série des cartes géophysiques, 6527. Commission géologique du Canada, Ottawa, Ontario, 2011.