

Helicopter geophysical surveying is a common procedure world wide, and both magnetic and radiometric measurements are considered an important exploration tool for many classes of orebodies.

**Magnetic measurements** in a helicopter or fixed wing aircraft are recorded (to an accuracy of 1/10 of a nanotesla) as the aircraft is flying along a pre-determined flight path, normally an orthogonal survey grid of lines and tie lines. At the same time a second magnetometer, called a magnetic base-station, is located in a magnetically quiet area ( no vehicles or powerlines etc.) records what is referred to as the “magnetic diurnal”, which is the varying magnetic field as a function of time. It is beneficial to have the base station in or near the survey area.

The airborne data are processed by subtracting the magnetic variation from the airborne data. The magnetic data are also improved by further correcting the data using the tie-line data intersection points to produce a (more or less) smooth, internally corrected map. However, maps may still be effectively noisy and, optionally, further micro-leveling correction can be made after the data has been gridded. This process removes small noise variations along the traverses that may arise between the tie lines.

**Radiometric surveying** and compilation is a complex procedure, normally done in two stages. The data is collected (with various calibration information) and processed in a preliminary fashion. The field processing involves checking the validity of all the data and making preliminary maps. At this stage, the radiometric data are mapped in units of counts per second (cps).

A final stage of processing, involves the final processing involves merging the calibration with the preliminary data to produce radiometric units in *concentrations* of potassium, uranium and thorium. (This processing has not as yet been completed on the present data.)

The corrections include applying sensor stripping ratios, altitude attenuation coefficients, temperature and pressure corrections, radon contamination corrections, aircraft and skyshine factors. These corrections are described in the **International Atomic Energy Agency document IAEA-IECDOC-1363 “Guidelines for Radioelement Mapping using Gamma Ray Spectrometry Data.”, July 2003**