INFORMATION SHEET

Airborne Geophysical Surveys

Non-ground disturbing technique

Airborne geophysical surveys are used to map large / inaccessible areas quickly and more cost efficiently than ground based geophysical surveys.

All airborne geophysical survey methods are scientific techniques that monitor variations (both naturally occurring and generated through active sources) in key physical or geochemical parameters of the Earth over time.

These key physical or geochemical parameters include conductivity, magnetic susceptibility, rock density, naturally occurring radioactive element concentrations and reflectance.

The geophysical systems and methods used to measure these parameters include electromagnetic, gamma-ray spectrometry, magnetic and gravity.

Survey instruments are carried onboard or towed behind / below airplanes, helicopters, drones or satellites, and can measure the above parameters from tens of metres to tens of kilometres below the surface of the Earth.

Figure 1: Example of a helimagnetic survey in progress

Figure 2: Example of fixed wing SPECTREM plane landing after completing an electromagnetic survey

Airborne geophysical surveys are excellent tools for mapping exposed rock, geological structures, sub-surface conductors, paleochannels and even salinity – a problem that affects large areas of agricultural land in Australia.

The process of collecting airborne geophysical data has little to no impact on the surrounding environment or land use.