

**PROTOCOL FOR SAMPLING IN REGIONAL GEOCHEMICAL SURVEYS:
LESSONS FROM PILOT PROJECTS**

Megan Lech and Patrice de Caritat

November 2007

PREFACE AND EXECUTIVE SUMMARY

This report outlines the sampling protocol for regional geochemical surveys in Australia. It was developed during the course of several pilot projects conducted in New South Wales, Victoria and South Australia from 2003 to 2007. The pilot studies were purposely conducted in regions of varying climate, relief, drainage definition and regolith to ensure the developing methodology would suit many parts of Australia. Up to six grain-size fractions, various depth ranges as well as complete soil profiles were sampled. Partial leaches (including Mobile Metal Ions®), heavy mineral fractions, and other sampling media (e.g., soil, groundwater, and vegetation) were tested during the pilot projects.

The regional geochemical pilot projects aim to:

1. Help develop a suitable geochemical sampling methodology that can be adapted for other regional geochemical studies across Australia (this document),
2. Provide internally consistent background geochemical data and suitable maps for various test regions, and
3. Enhance global attractiveness to mineral exploration, and improve our resource management and environmental protection in Australia.

This report details the:

1. Methodology underpinning the determination of the theoretical sampling points using terrain and hydrological analysis; and
2. Protocols necessary for standardised site selection, sample collection and site documentation.

Patrice de Caritat

Project Leader