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The Mt Read Volcanics Project—Gravity Sub-project

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Abstract

Seven thousand eight hundred and twenty three (7823) gravity stations were acquired in an area between Nye Bay and Wynyard in the period October 1985 to January 1989. Where access permitted the station density was one per square kilometre over the Mt Read Volcanics and one per four square kilometres in the fringe areas. The Mt Lyell area was covered in more detail.

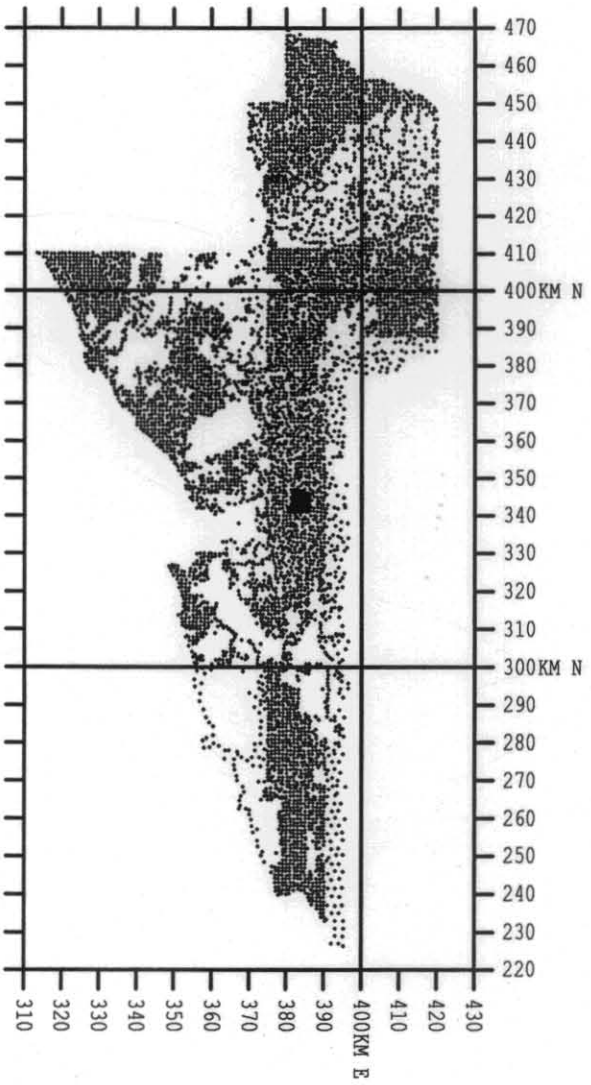
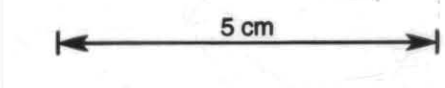


Figure 1. Gravity station locations, Mt Read Project.



INTRODUCTION

The geological component of the Mt Read Volcanics Project was designed to provide:

(i) a structural interpretation of the Mt Read Volcanics and their environment of formation, and

(ii) an evaluation of the geophysical responses of known mineralisation and geological environments.

To this end a number of geophysical surveys, including aeromagnetics and gravity, were completed.

Previous Department of Mines regional gravity surveys at Strahan (Ocean Beach) and Zeehan, and detailed gravity surveys at Que River and Hellyer, had shown the gravity techniques to be effective, and a major acquisition program commenced. Using both ground and helicopter access a regional coverage was to be obtained over the Mt Read Volcanics and other prospective rocks at a station density of one per square kilometre in the region from Nye Bay to Wynyard, and extending over some 40 to 50 km in width. In addition surveys of Mt Lyell and Rosebery were planned on a 250 m grid.

RESULTS

Figure 1 shows the gravity station coverage achieved during the Mt Read Volcanics Project. The regional data were acquired with a position error of less than 35 m and a height error of less than 2.5 m, while the positioning of the detailed survey is better than 5 m horizontally and 0.2 m in elevation. The Mt Lyell survey was completed satisfactorily but the Rosebery survey was pre-empted by Electrolytic Zinc Company work. The basic data may be purchased from the Department of Mines.

Publications available include:

Gravity Interpretation—West and North-west Tasmania, by D. E. Leaman, 1986.

Mineralisation Signature Study: Geophysics—Gravity and Magnetics, by D. E. Leaman, 1987.

Precambrian and Lower Palaeozoic Structural Relationships of West and North-west Tasmania, by D. E. Leaman, 1988

MANTLE88—Regional Gravity Field, Tasmania, by D. E. Leaman, 1988

Bouguer gravity map

Residual gravity anomaly map

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