

2.10.3 Geology

1. Introduction

Geological mapping of the Jukes Pty Grid was undertaken by consultant Dr. C.J. Eastoe during March, 1982. Figure 64 shows his interpretation of the geology and alteration of the area. The following sections are taken from Eastoe's report "Jukes Proprietary Prospect, Report on Geology, Alteration and Mineralisation, for the Mount Lyell Mining and Railway Company Limited".

2. Stratigraphy

The following is an account of minimal detail; refer to Corbett (Econ. Geol., 1981) for fuller descriptions of the rock units and for the regional context.

- (i) The Cambrian-Ordovician Owen Conglomerate and the basal, lenticular Jukes Breccia overlie the Mt. Read Volcanics unconformably.
- (ii) The Eastern Sequence of the Mt. Read Volcanics (considered to be a correlate of the Comstock Tuff in the Queenstown area) consists of lavas, pyroclastics and volcanoclastic sediments. The volcanics are characteristically quartz-phyric in this area. Near Jukes Proprietary, the basal part of the Eastern Sequence consists of volcanoclastic sediments. The very basal layer is a quartz-grit, probably originally a coarse-grained arkosic or tuffaceous sandstone, locally containing pebbles of quartz and Central Sequence lavas. A little higher in the unit (this is visible particularly near line 00, 1200E and eastwards) the grit is succeeded by volcanoclastic conglomerate containing blocks of quartz-phyric volcanic rock in a gritty matrix. The conglomerate appears to occur in lenses. The unconformable contact with the Central Sequence is visible in several places, and does not appear to be faulted. Neptunian dykes may be present near line 200N.
- (iii) The Central Sequence of the Mt. Read Volcanics is represented by lavas showing snowflake devitrification texture throughout. Locally, autobrecciation and flow-banding are visible, and in the western part of the grid columnar jointing is prominent. Phenocrysts are seldom visible in hand specimens.

Intrusive Geology

A sheet of quartz porphyry intrudes the north-central part of the Central Sequence Lavas. The porphyry contains sub-hedral quartz phenocrysts up to 3mm long in a fine grained pink, felsic matrix where unaltered. The sheet is only a few metres wide over most of its length, but swells to about 35m east of King Jukes No. 2 adit.