MC 38

1990 ANNUAL REPORT

CHEKO PROSPECT

NORTHERN TERRITORY

CENTRAL PACIFIC MINERALS N.L.

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### FIGURES

1. Locality Plan

2-5. Cross Section PH1 to PH4
1. INTRODUCTION

The Cheko Prospect is situated some 50km northeast of Alice Springs, Northern Territory on the Gardens Station. In 1969, as a result of geochemical stream sediment reconnaissance, copper, lead and zinc mineralization was discovered. Forty "Cobra" drill samples were collected, induced polarisation surveys, geological mapping prior to a four-hole percussion drill programme being completed. Grades of 7.8% zinc and 8.5 g/t silver over a 1.5m interval (PH2) were the best obtained.

2. TENURE

The area is held by virtue of MC 38 (formerly MC 463H) and is 33 hectares. This was granted to Central Pacific Minerals N.L. on 22nd March, 1984. The area was initially held as part of AP 1721.

3. GEOLOGICAL SETTING

The Cheko Prospect is near the north-eastern margin of the Upper Proterozoic to Late Palaeozoic, Amadeus Basin and comprises a small area of complicated medium-grade metamorphics (Archaean Arunta Complex) slightly south of the hinge area of the Winnecke Nappe. The mineralization consists of a series of quartz-haematite and quartz-magnetite rocks, having anomalous base metal geochemistry. These iron-rich rocks form part of a discontinuous horizon which can be traced for over 15 miles from Rankin's Copper Prospect. Generally, the rocks consist of (crystalline basement rocks) gneiss, schist, amphibolite, marble and calc-silicates. The metamorphic grade is as high as the almandine amphibolite facies. Small pegmatite and microdiorite intrusions are common but no large igneous intrusions are present.

4. PREVIOUS WORK

(i) Prospect Geology

The mineralization at the surface is represented by gossanous ironstones in quartz-haematite and quartz-magnetite "reefs". Most of the reefs and gossans are small and lenticular, concordant with schistosity and occur at or near the amphibolite/quartz-feldspathic gneiss contact. Other quartz-haematite rocks, usually without a gossanous structure, occur enclosed within the amphibolite or quartz-feldspathic gneiss.
The lead-zinc mineralization is regarded as probably stratigraphically controlled and occurs in gossanous haematite-actinolite rocks marginal to garnetiferous quartzite. The actinolite rocks presumably are replacements of former calcareous lenses. The garnet quartzite is intensely recrystallised; no quartz grain boundaries can be discerned and the quartzite superficially resembles a garnetiferous quartz vein. In several places decomposed amphibole and pyrite occur in the quartzite.

This relatively simple control is complicated by extremely complex and tight folding, particularly in the north-east. The similarity of the control and the presence of similar gneisses and amphibolite strongly suggests that the Gheko Prospect is a stratigraphic equivalent of the Rankin's Prospect mineralization.

(ii) Structural Analysis

The origin of the ironstones is uncertain, but the occurrence of a form of folded layering within them and because they are restricted to a fairly constant horizon, makes it likely that they have undergone deformation and metamorphism with the country rocks. Assuming strain is large, the form of any body will almost certainly reflect the geometry of the country rocks. Hence the bodies of quartz-haematite or quartz-magnetite and gossan are probably lenticular in shape, with the longest dimension parallel to lineation, (i.e. parallel to the direction 85 degrees to 307 degrees) and the shortest dimension normal to schistosity. It seems unlikely that their maximum elongation could be to the east, unless complicated by later deformation.

Small scale structures have been used to classify areas as "high grade" or "retrograde" on the basis of schistosity and lineation.

In a "high grade" area schistosity and foliation are parallel in all gneiss outcrops except in the hinges of small folds, where schistosity forms an axial plane structure to folds defined by foliation. Such folds are usually asymmetrical, similar and isoclinal in style. Schistosity is absent from the amphibolites, but folds of identical style are common. A lineation in both the gneisses and amphibolites is defined by mineral streaking, and lies parallel to fold axes defined in foliation.

In a "retrograde" area, a well-developed, fine foliation defined by 1-2mm thick layers, occurs parallel to a retrograde schistosity in the chlorite and mica schists of the retrograde schist-zones. No folds are observed. A rare, down-dip lineation lies in the "retrograde" schistosity.
(iii) Drilling Results

Several zones of sulphides were encountered in the percussion drilling. The sulphides recorded were principally pyrite and chalcopyrite but the presence of sphalerite and galena is presumed from the assays which reached 7.8% zinc and 8.5 g/t silver (PH2 135-140 feet) and 1.42% lead and 37 g/t silver (PH3 135-140 feet). No noteworthy amounts of other elements were found although cobalt, bismuth, silver, cadmium, vanadium, tungsten and molybdenum checks were done. Copper reached 0.5% (PH2).

(a) Percussion Hole No. 1

A moderate zone of sulphide mineralization was intersected between 100 and 115 feet. This zone occurs within the amphibolite and contains abundant pyrite with a trace of chalcopyrite. This hole may have terminated before passing completely through the quartz-hematite zones, and was terminated due to loss of sample return.

(b) Percussion Hole No. 2

Three main zones of sulphide mineralization were intersected within the amphibolite layers. The first zone occurred at 115 to 120 feet, the second at 130 to 135 feet and the third at 140 to 145 feet. The mineralization was mainly pyrite with traces of chalcopyrite. This mineralization occurs in minor quantities throughout a wide zone from 115 feet to 145 feet. The hole was terminated due to a high water flow rate resulting in loss of sample return.

(c) Percussion Hole No. 3

Two zones of mineralization were intersected between 70 to 80 feet and 130 to 140 feet. The mineralization was mainly pyrite and occurred within the amphibolite bands.

(d) Percussion Hole No. 4

Three major zones of sulphide mineralization were intersected. These zones occurred between 125 to 135 feet, 160 to 170 feet and 185 to 200 feet. The last of the three zones contained varying amounts of sulphide. The main type of mineralization was mainly pyrite with a trace of chalcopyrite. Recovery was poor for several samples due to water.

5. 1990 PROGRAMME

The prospect was again reviewed in 1990. However, the small size of the resource and the lack of significant price-rise incentive remain problems and it has been concluded that the property should continue, on a care-and-maintenance basis.
6. REFERENCES


McPhar Geophysics, 1970 Report on the Induced Polarisation and Resistivity Survey on Several Areas in A to P 1721, Northern Territory, Australia, for Central Pacific Minerals N.L.
