ANNUAL REPORT ON THE MINING ACTIVITIES IN
THE CLAIMS MCN 1007 TO MCN 1011,
HOWLEY PROJECT AREA.

1988/9

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for
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# FIGURE

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# ENCLOSURE

| ENCLOSURE 1 | Alluvial Mining Operations, 1988 to 1989, MCN 1007 to 1011, Howley Project Area. |
1 SUMMARY

The Mining Claims 1007, 1008, 1009, 1010 and 1011 cover a northeast trending palaeochannel on the east side of the Howley Ridge near Chinese Howley. The gravels contained in the channel are gold bearing and grade between 0.3 and 0.5 g/LCM. Mining began in MCN 1009 in 1987 and has continued in the claims MCN 1011, 1010 and 1009 in the past year. A total of 260,000 LCM's has been extracted in the 1988/89 programme and stockpiled ready for processing.

The MCN's are located over the same gravel body which is being mined as a single orebody unit. It is therefore difficult to separate the mining activities claim by claim and therefore this report deals with the mining activities in the group of claims. It provides background data on Metana's Howley Alluvial Project Area, gives some details on the gravel body in the MCN's and presents a breakdown of the volumes of gravels mined in each of the claims in 1988/89.
2 INTRODUCTION

The Howley Project Area is situated about 30km southeast of Adelaide River on the Stuart Highway (Fig. 1). It consists of a group of Exploration Leases, Mining Leases and Claims held by Northern Gold N.L.. Metana Minerals have negotiated a production agreement with Northern Gold for the alluvial mining rights. Alluvial mining began in 1986 using a 100 cubic metre per hour plant situated about 1km east of Chinese Howley. Ore was run through the plant which had been mined from mining claims in close proximity to the plant site. In 1987, a second 100 cubic metres per hour plant was added giving an annual mining capacity of 800,000 cubic metres. Exploration for more gravels in the surrounding EL's has continued and mining has been carried out on Mining Claims further from the plant site such as the claims 1007 to 1011. This group of five claims follows a palaeochannel which flowed eastward from the Howley Ridge. This report deals with the mining activity in the MCN's in the year 1988 to 1989.

3 GRAVEL DEPOSITS IN MCN's 1007 to 1011

Initial photo-mapping was based on 1:15,000 colour air photographs and was carried out as part of an overall survey covering the whole Project Area. The photo-mapping focussed on geomorphological features and the mapping was carefully checked in the field and corrected where necessary. The mapping shows a palaeochannel running northeastward through the Mining Claims informally named the 'Pandanus Palaeochannel'. From the mapping and a detailed examination of the gravels in costean exposures and in creek incisions, it has been concluded that the alluvial deposits are poly-cyclic with two main phases of deposition:

i) An early alluvial phase in which a thick layer of coarse, poorly sorted material was deposited. Matrices are clay-rich and the gravels are indurated and compact. Gold occurs throughout the profile but the best results are obtained on or near the floor. Grades of 0.6 LCM have been obtained in this material. Most of the material in the Pandanus Palaeochannel consists of this 'old' material.

ii) A later fluvial phase in which a thinner, better sorted layer of gravels was laid down. These materials are lighter and more rounded than the older gravels, matrices are sandy and the gravels are loosely compacted. Good gold grades are panned from the contact between the upper and lower gravel layers (about 0.3 to 0.6 g/LCM) but higher in the upper gravel layer, the grades drop off.

The extent of the gold bearing gravels and their location in
the group of MCN's under discussion in this report is indicated on Enclosure 1. The gravels are buried under a layer of fine grey silt up to 1 metre thick. The gold bearing gravels are thickest in the upper part of the drainage system at the foot of the Howley Ridge in MCN's 1011, 1010 and to some extent in 1009.

4 MINING ACTIVITIES

Mining in the past year (1988/9) has been carried out mainly in the upper part of the Pandanus Palaeochannel in a part of the old system still being used by the current drainage. Partial mining of the central parts of the palaeodrainage was carried out in 1987 (see previous annual report). The latest mining concentrated on the deeper, high grade parts of the gravel body in the MCN's 1011, 1010 and 1009 (Enclosure 1). The mined gravels have been stockpiled near the plant in ML 1000 to the south ready for processing in the 1989 wet season. A total of 250,000 LCM's have been mined during the 1988/89 programme from the leases in the past year and the breakdown of volumes lease by lease is as follows:

i) **MCN 1011** is located in the headwaters of the Pandanus Palaeochannel system and comprises of a major confluence area at the foot of the steeper slopes northeast of the Howley ridge. A total of 69,662 LCM's were mined from this claim in the past year.

ii) **MCN 1010** is situated on the main trunk of the channel system downslope of MCN 1011. Extensive gravels occur here with considerable depth accompanied by good grades. The volume of gravels removed totalled 121,152 LCM's in the past year.

iii) **MCN 1009** is located further downslope slightly north of the main trend of the palaeochannel. Mining has only just begun in the claim and the gravels are high grade re-worked materials from the older channel upslope. A total of 11134 LCM's have been extracted to date.

iv) As can be seen from Enclosure 1, some of the mining in the programme has been done on ML 1000 to the south of the MCN's. A total volume of 58,052 LCM's has been mined from this lease making up the total of 260,000 LCM's mentioned above.

v) No mining has been carried out on MCN 1008 and 1007 in the past year.