THIRD YEAR
RELINQUISHMENT REPORT FOR
EXPLORATION LICENCE 6307

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MINES AND ENERGY

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SUMMARY

No exploration work was conducted on the relinquished portions of EL6307. Re-assessment of previous geochemical, geophysical and geological data revealed little potential for shear hosted and/or "Granites" style Au mineralisation within these areas.
INTRODUCTION

The Barrow Creek Project encompasses three exploration licences originally granted to Yuendumu Mining Company (YMC) and now forming part of a joint venture with Poseidon Gold Limited (PGL) and Poseidon Exploration. EL6307 forms part of this group of tenements and was granted in November 1988.

On the third anniversary date (November 1991) of the licence, portions of EL6307 were relinquished.

This report describes the exploration conducted by PGL as managers of the joint venture on the surrendered portions between November 1990 and the third anniversary date.
2.0 LOCATION AND ACCESS

EL6307 is located approximately 200km south of Tennant Creek and 30km north of the small service centre of Barrow Creek, refer Figure 1. Access is via a station track which intersects the Stuart Highway some 6km south of the Taylor Creek bridge.

3.0 CLIMATE

The climate is hot in summer (mean daily temperatures range from 25 deg C to 38 deg C) and mild in winter (10 deg C to 24 deg C). Temperatures exceeding 40 deg C are common during summer.

4.0 PHYSIOGRAPHY

The two most dominant features within the area are the Crawford and Osborne Ranges. These consist of peneplaned ridges of orthoquartzite within the tightly synclinally folded Hatches Creek Group. Within the licence area the main ranges form a number of smaller ridges separated by flat valleys following the regional strike. Small isolated iron-rich sediment pinnacles comprise the Lower Hatches Creek Group along the flanks of the orthoquartzite ridges.

Vegetation is specific in areas of underlying intrusives. The granites are characterised by low lying, but thickly vegetated grasses, Tricolia (spinifex) and small (1m high) porcupine scrub. Conversely the mica schist and schistose sandstone units predominantly host a thick vegetative cover of ti-tree and mulga that can be used as a marker plant for future prospecting. Bearing this in mind, the latter units appear to be more extensive than the regional geological mapping indicates.
5.0 REGIONAL GEOLOGY

The oldest rocks exposed are the Archaean Arunta Complex which consist of biotite schist, mica schist, gneiss and amphibolite.

Unconformably overlying the Archaean basement are the Lower Proterozoic Hatches Creek Group sediments. This sequence has been sub-divided into two distinct units, the Lower Hatches Creek and the Upper Hatches Creek.

The Lower Hatches Creek unit is a pelitic sequence that outcrops as ferruginous pinnacles up to 30 metres high. This sub-group is conformably overlain by psammitic rocks of the Upper Hatches Creek unit. These outcrop as prominent orthoquartzite and quartz sandstone ridges as exemplified by the Osborne and Crawford Ranges.

Prior to folding, the Lower Hatches Creek unit was intruded by basic to intermediate sills or laccoliths. These have been identified in the field as metadolerites and metadacites.

After the deposition of the Hatches Creek Group sediments, regional deformation commenced during the Middle to Upper Lower Proterozoic. The sediments were isoclinally folded along a NW axis. Intermediate to acid intrusives were emplaced while folding was in progress.

Igneous activity continued for some time after the orogeny with the intrusion of granites and pegmatites. This was followed by a phase of shearing and faulting exemplified by sheared quartz veins and granite-schist contacts.

A long period of erosion followed with the subsequent deposition of Tertiary sediments which consist of ferruginous sandstone and calcrite with chert nodules.
6.0 HISTORY AND PREVIOUS WORK

The area under investigation shows little evidence of past exploration or prospecting activity. Only the Petricks Prospect comprising a series of shallow prospecting pits exposing weakly mineralised sheeted quartz veining occurs within the project area. Elsewhere, numerous small workings occur in the granites and amphibolites to the south and south-east of the exploration licence, where Sn, mica, W, Ta and Cu have been previously extracted by prospectors.

Kewanee Australia Pty. Ltd. conducted a broad exploration programme between 1970-1974 within the Crawford-Osborne Range area. Interpretation of geophysical, geochemical and geological data defined a number of potential base metal targets. These were subsequently followed up by a combination of percussion, diamond and RAB drilling techniques. A low grade Cu-Ni resource (Prospect D) of moderate tonnage was outlined but considered too low grade to warrant further investigation and a decision was made to relinquish the ground in late 1973.

Limited exploration was conducted by Australis Mining Co. Pty. Ltd. in 1969 within the Crawford Range area. Emphasis was on the base metal potential within the pegmatites, granites and metadolerites. Overall, results were disappointing and no additional work was undertaken.
7.0 WORK UNDERTAKEN BETWEEN 16.11.90 AND 15.11.90

A work programme including infill soil sampling, photogeological interpretation, ground magnetometry, reverse circulation drilling and downhole geochemical sampling was completed over EL6307. A number of low order anomalies were generated but are not located within the relinquished portions.