ANNUAL REPORT ON EL 3013
28TH OCTOBER 1981
TO
27TH OCTOBER 1982
OPEN FILE

BY
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## PLANS

- TF 2886  Location and Access
- TF 2767  Plan of Exploration Licence

## OPEN FILE
1. INTRODUCTION

This is the first annual report for EL 3013, covering the twelve months from when the exploration licence was granted to Attutra Exploration Company Pty. Ltd., on the 28th October 1981 to the 27th October 1982. During the period under review a joint venture agreement was reached between Peko-Wallsend Operations Ltd. and Petrocarb Exploration N.L., The parent company of Attutra Exploration Company Pty. Ltd. EL 3013 forms part of the exploration tenure that was included within the "Joint Venture Agreement-Exploration". Tenure maintenance and reporting are now the responsibility of Geopeko, the mineral exploration division of Peko-Wallsend Operations Ltd. The EL covers an area of 60 Blocks (193km\(^2\)) on the Illogwa Creek (1:250,000) sheet, SF53-15, and on the Quartz 1:100,000 sheet, 5951.

2. PHYSIOGRAPHY AND GEOLOGY

The licence area is relatively flat lying with heights above sea-level of between 400m in the south-east and 480m in the north west. This is reflected in the dendritic drainage pattern with the creeks flowing south eastward. These form a tributary of the Huckitta Creek. The vegetation away from the water courses is composed of open grassland with small trees and large shrubs. Along the water course there are larger eucalypts and the vegetation is considerably more dense. Climatically the area has short cool winters and long hot summers with summer temperatures exceeding 40° C. The annual rainfall is less than 250mm with poor reliability. The rain falls in storms primarily between November and March. Rock outcrop is restricted to the south-west corner (i.e. south west of the old Indiana road) and to the north-east corner where there are a series of small flat topped hills. Outside these two areas outcrop is very limited with large areas on the eastern half of the EL being covered by wind blown sand.
Geologically the area is composed of Lower Proterozoic, Harts Range Group composed of quartz-muscovite-biotite and garnet gneisses, quartz-rich meta-sediments and calc-silicates. Pegmatites are abundant they are generally coarse grained, composed primarily of quartz and plagioclase, and vary in width from less than one metre up to 15 m. Locally there are sub-cropping ultramafic rocks capped by siliceous laterites. Overlying the Harts Range Group are isolated patches of Tertiary laterites and very extensive unconsolidated sediments of Cainozoic and Quaternary age.

3. EXPLORATION PHILOSOPHY

Attutra applied for EL 3013 because of the Hammer Hill nickeliferous laterite occurrence, however, the presence of calc-silicates in the Harts Range Group provide a target for the calc-silicate and skarn hosted scheelite and molybdenite mineralisation of the Molyhil type. The recent geological mapping by the BMR and the N.T. Geological Survey will form the basis of geological information, which combined with geophysical and geochemical techniques will contribute to an integrated exploration programme.

4. EXPLORATION HISTORY

In 1896 Brown visited the area and noted the presence of veins of opalline quartz, chalcedony, iron oxide and some chrysoprase. 80 years later in early 1970's Howland and Miller working on AP 2568 for Arcadia Minerals assessed the mineral potential of the area. Miller (1970) recommended further exploration over the areas containing the ultramafic rocks. The area was flown as part of a low-level airborne magnetic survey in 1971, which showed a number of anomalies derived from ultramafic rocks.

In recent years the area has been covered by a number of major exploration companies, although their findings are yet to be placed on open file.
5. WORK UNDERTAKEN

The major part of the work undertaken to date is a literature search of previous exploration activity. This was undertaken at the Department of Mines and Energy in Alice Springs and Darwin. The search was not restricted to the licence area but covered the eastern half of the Arunta Block. A brief summary of findings are included in section 4 of this report.

6. EXPENDITURE

EL 3013 forms part of a regional exploration programme and expenditure therefore has been allocated on an **aerial basis**:

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<tbody>
<tr>
<td>Expenditure to 31.10.82</td>
<td>$33,287</td>
</tr>
<tr>
<td>Covenant for the first licence year</td>
<td>$12,500</td>
</tr>
</tbody>
</table>

7. PROPOSED EXPLORATION PROGRAMME

As mentioned above EL 3013 forms part of the tenure held on behalf of the Peko-Petrocarb joint venture. Geopeko, as agents for the joint venture, are undertaking a regional exploration search for calc-silicate and skarn hosted scheelite-molybdenite mineralisation. Geological exploration is restricted due to lack of outcrop, however, this being the case future exploration will rely heavily on geophysics, in the form of magnetic surveys etc. with the aid of follow-up geochemistry and percussion drilling.

8. PROPOSED EXPENDITURE

The proposed expenditure for the following years are:-

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>2</td>
<td>15,000</td>
</tr>
<tr>
<td>3</td>
<td>20,000</td>
</tr>
<tr>
<td>4</td>
<td>30,000</td>
</tr>
<tr>
<td>5</td>
<td>40,000</td>
</tr>
<tr>
<td>6</td>
<td>50,000</td>
</tr>
</tbody>
</table>

Should significant mineralisation be found, then it would be expected that expenditures from Year 4 onwards would be greatly increased, and figures of up to several hundred thousand dollars could be expected.
REFERENCES (relating to EL 3013)

BARRACLOUGH, D., Hammer Hill Nickeliferous Laterite Prospect
Northern Territory Geological Survey. No. GS78/9 1978

BROWN, H.Y.L., Reports on the Arltunga Gold Field and Harts

HOWLAND, D.B., Report on Northern Territory Field Trip 14th
October - 14th November 1971

MILLER, P.G., Assessment of Exploration AP 2568, Harts Range
Area, N.T. Arcadia Minerals Ltd. William Johnson
and Associates Pty. Ltd. (unpub. company report) 1971