AUSTRALIAN DEVELOPMENT NO LIABILITY

ANNUAL REPORT

PROSPECTING AUTHORITY 1947

ENDING 14/5/69

FOR

DIRECTOR OF MINES & WATER RESOURCES

DARWIN.
# CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1.</td>
</tr>
<tr>
<td>EXPENDITURE</td>
<td>1.</td>
</tr>
<tr>
<td>EXPLORATION AIMS</td>
<td></td>
</tr>
<tr>
<td>Surveying</td>
<td>1.</td>
</tr>
<tr>
<td>Geophysics</td>
<td>1. &amp; 2.</td>
</tr>
<tr>
<td>Geology</td>
<td>2.</td>
</tr>
<tr>
<td>Costeaming</td>
<td>2.</td>
</tr>
<tr>
<td>Plan Preparation</td>
<td>2. &amp; 3.</td>
</tr>
<tr>
<td>Conclusion</td>
<td>3.</td>
</tr>
<tr>
<td>APPENDIX</td>
<td></td>
</tr>
<tr>
<td>Cost Summary</td>
<td>4.</td>
</tr>
<tr>
<td>Exploration Summary</td>
<td>4.</td>
</tr>
<tr>
<td>PLATES</td>
<td></td>
</tr>
<tr>
<td>(1) Locality Map</td>
<td></td>
</tr>
<tr>
<td>(2) Control Plan EL-GP-319</td>
<td></td>
</tr>
<tr>
<td>(3) Baseline and Reconnaissance Magnetometry (1) EL-GP-318</td>
<td></td>
</tr>
<tr>
<td>(4) Baseline and Reconnaissance Magnetometry (2) EL-GP-320</td>
<td></td>
</tr>
</tbody>
</table>

**DISTRIBUTION LIST**

Northern Territory Administration (2) /
Managing Director, Australian Development N.L.
General Manager
Consulting Geologist
Geoloty Office File
Introduction:

The Prospecting Authority 1947, located 10 miles south east of Tennant Creek (see plate 1) covers an area of 35 square miles east and west of the Noble's Nob mine. Originally granted as P.A. 1253, the area was allowed to lapse and was regranted on P.A. 1947 from 15/5/68.

This report summarises work done in the area from 15/5/68 to 4/3/69, and estimates exploration and expenditure for the remainder of the period of tenure to 14/5/69. Extension of the Authority is sought for a further period of 12 months under separate cover.

Expenditure:

Total expenditure to date has been $62,683 of which $13,986 has been spent during the period under review. This has been divided evenly between costeasing in areas of no outcrops west of Noble's Nob and contract surveying and reconnaissance magnetometry between the Rising Sun and New Hope mines east of Noble's Nob.

Present Company policy is to carry out some deep drilling on favourable targets, and pending completion of the current deep drilling programme at Noble's Nob, a deep target will be drilled east of the Rising Sun mine to a planned depth of 2600 feet. Estimated expenditure is $26,000. A further $3,000 will be spent on other work elsewhere in the Authority up to 14/5/69.

Exploration Aims:

Prior to 1968, prospecting on P.A. 1947 has been on a piecemeal basis, with no concerted effort being made to examine the entire area systematically. However, with the publication of B.M.R. Record No. 1967/39, Tennant Creek Detailed Aeromagnetic Survey by W.A. Finney, in which the ground now covered by P.A. 1947 was examined in greater detail than previously, the incentive was given for the accelerated programme of the past 12 months, the aim of which was complete ground coverage and interpretation of all aeromagnetic anomalies preparatory to drilling. This programme is almost complete. The following is a resume of this work.

Surveying:

The main baseline, commencing at the Rising Sun mine and running due east for a distance of 54,347 feet to the eastern boundary of the Authority, was cleared, rehabilitated, and permanently marked by contract surveyors. In addition, 250,000 line feet of reconnaissance traverses were laid out over selected areas. Traverse lines were spaced between 150 and 500 feet apart and were permanently marked at 100 foot intervals.

Geophysics:

300,000 line feet of reconnaissance magnetometry traverses were completed by staff of Australian Development No Liability, under the direction of our consultant geophysicist over all the major aeromagnetic anomalies as indicated by Finney. Eight anomalies were verified on the ground. All data is being processed by our consultant who has already indicated a target on line 7300W, which will be drilled shortly, and several shallow targets.
Geophysics (Contd.)

In addition, all available information on previous ground magnetometer surveys has been submitted to our consultant for re-appraisal. It is expected that additional targets will be indicated as a result of this work.

Geology:

In conjunction with reconnaissance magnetometry traversing, areas of interest were geologically mapped on a scale of 1" = 200 feet. To date, six of the nine areas covered by magnetic survey have been mapped and the remaining three areas will be completed during the current period of tenure. In addition, costeans west of Noble's Nob have been mapped. Plans are in preparation. As surveys of the western part of P.A. 1947 are unreliable, mapping has been hindered pending re-survey.

To date, valuable information regarding potential of anomalies has been obtained through geological mapping. However, as much of the area is of poor outcrop, further information must be obtained by bedrock auger drilling particularly on the anomalies north of the main porphyry contact. Previously, deep costeaging was used for the same purpose with only limited success.

Upon completion of the indexed series of plans covering the entire Authority, a composite geological map of the area will be prepared.

Costeaging:

In the western portion of the Authority, where outcrop is restricted, 600 feet of deep costeans were cut with a bulldozer in selected areas.

Further costeaging on the Authority is not anticipated and will be replaced by shallow auger drilling on a grid system.

Water Resources and Access:

A survey of the water resources of parts of the Authority was made by Mr. T. Laws, a Hydrologist of the Mines and Water Resources Branch. Several fores sites were proposed. Drilling at one site commenced but is temporarily halted.

A small dam was sunk in the hills east of the Rising Sun mine to provide water for planned drilling on P.A. 1947 and adjacent areas.

Road maintenance has been carried out as necessary and a by-pass road constructed around an area of deep bulldust, as well as access tracks to the dam site.

Plan Preparation:

A master system of plans covering the whole Authority and adjacent areas is in preparation. Systematic prospecting will be assisted and an improved understanding of the structure of the area gained as a result of this programme.
Three plans and a sketch map showing the location of P.A. 1947 are presented with this report. Map No. EL-GP-319 is the control plan of the Authority and adjacent areas, and shows all magnetometry and surveys on the eastern portion of the area. Preparation of a plan of the western portion is delayed pending satisfactory re-surveying. Maps No. EL-GP-318 and 320 show all magnetic traverses and surveying during the current period of tenure.

Conclusions:

Emphasis has been placed in the past year on completing all the ground-work necessary for full examination of the Authority. This is almost complete for the eastern portion. Eight major anomalies have been verified, but further magnetometry will be required in some cases before resolution is obtained. Drilling will commence on the first anomaly resolved and will be completed before the renewal date of the Authority.

Geological mapping is current over most of the interesting areas and a detailed appraisal of the Authority in terms of geological and geophysical data will commence shortly, followed by:

1. Shallow auger drilling to give subsurface and geochemical information.

2. Diamond drilling of selected anomalies.

Prospecting Authority 1947 is a prime exploration area for Australian Development N.L. and recommendation is made for its renewal for a further 12 months.

G. C. WOLFF.

SUPERVISING GEOLOGIST.


GCG: JS:
2/4
APPENDIX

1. **Cost Summary:**

   - Contract Surveying: $2,434
   - Magnetometry: 3,100
   - Costeans: 3,964
   - Surveying, geological mapping and associated services: 4,488
   - **Total Cost:** $13,986

   - Expenditure to date: $62,683
   - Estimated additional expenditure to 14/5/69: $29,000

2. **Exploration Summary:**

   - Surveying: 304,347 line feet
   - Magnetometry: 300,000 line feet
   - Costeans: 600 feet
   - Mapping:
     - (1) Costeans: 2,000 feet
     - (2) Selected Areas: 6 sq. miles