EL6797 "PLATEAU POINT"
PINE CREEK DISTRICT NT
ANNUAL REPORT TO 20 MAY 1991
YEAR ONE OF TENURE

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N R BURN
JUNE 1991
CONTENTS

1. SUMMARY
2. LOCATION AND TENURE
3. GEOLOGY
   3.1 Regional Geology
   3.2 Local Geology
4. PREVIOUS EXPLORATION
5. 1990/91 WORK PROGRAM
   5.1 Aerial Photography
   5.2 Geophysics
6. CONCLUSIONS AND RECOMMENDATIONS
7. EXPENDITURE
8. REFERENCES
### FIGURES

<table>
<thead>
<tr>
<th>Figure No.</th>
<th>Title</th>
<th>Scale</th>
<th>Drawing No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>REGIONAL TENEMENT LOCATION</td>
<td></td>
<td>2A-B4</td>
</tr>
<tr>
<td>2</td>
<td>EL6797 LOCATION MAP</td>
<td>1:50,000</td>
<td>40A-Ta4</td>
</tr>
<tr>
<td>3</td>
<td>EL6797 GEOLOGY</td>
<td>1:25,000</td>
<td>40A-Gc4</td>
</tr>
</tbody>
</table>

### TABLES

| 1          | EARLY PROTEROZOIC STRATIGRAPHY OF THE PINE CREEK/ADELAIDE RIVER AREA |
1. SUMMARY

This report details the 1990/91 exploration activities completed on EL6797 in Year 1 of tenure, ending 20 May 1991.

The licence, comprising one (1) block, was granted to Dominion Gold Operations Pty Ltd on 21 May 1990 for a period of two (2) years.

Exploration activities during Year 1 consisted of literature review, airborne geophysical interpretation of Government commissioned survey and aerial photography interpretation.

Airesearch Pty Ltd, under contract to Dominion Gold, completed an aerial photography programme (at 1:25,000 scale) in April 1991 which covers this licence.

The Dominion exploration programme, now in progress, includes acquiring of previously flown (1987) Geoterrex airborne data flown for Australian Coal and Gold, interpretation of this data, regional mapping at 1:25,000 scale and stream and soil geochemistry.
2. LOCATION AND TENURE

EL6797 is located 170km south of Darwin, approx. 10km southwest of the Cosmo Howley Mine and is located on the Fenton 1:50,000 (14/5-1) sheet. The tenement lies between latitudes 10°38'S and 13°39'S and longitudes 131°16'E and 131°17'E. See Figs. 1 and 2.

Access is via the Stuart Highway, sealed Dorat and Oolloo roads and Douglas Station tracks. Climatically Plateau Point experiences a wet season (November to April) and a dry season (May to October). Average annual rainfall is 1249mm and the mean temperature is approximately 28°C.

Local relief is generally moderate, ranging from 90 to 110m above sea level, with Plateau Point (256m) approximately 2km to the north.

The licence was granted to Dominion Gold Operations Pty Ltd on 21 May 1990 for two (2) years.
3. GEOLOGY

3.1 Geology

The geology of the Pine Creek Basin has been well documented by the BMR [Wallace et al (1985) Needham, et al (1980)].

The Early Proterozoic sequence was deposited by alternating shallow marine and continental environments in an intracratonic basin setting. Following intrusion by conformable sills, a major period of deformation and regional metamorphism, related to granite intrusion, produced a series of tight, upright folds.

Early Proterozoic stratigraphy of the Pine Creek/Adelaide River area is listed in Table 1.

3.2 Local Geology

Review of previous exploration/mapping programmes by the NTGS and Burmine show the Fenton Granite intruding the Early Proterozoic South Alligator Group sediments i.e. Koolpin Formation and Wildman Siltstone, with hornfelsed Wildman siltstone roof pendants along major NNW trending shear zones. These shear zones, sub-parallel to the Mt. Shoobridge Fault and associated en echelon faults, are characterised by phyllites, quartz blows and contorted pegmatites. See Fig. 3.

A late E–W trending shear episode, e.g. pegmatites, can offset the earlier structures by 200–300m.

Foliation within the sedimentary rafts and granite trend sub-parallel to the regional NW foliation.
<table>
<thead>
<tr>
<th>GROUP</th>
<th>FORMATION</th>
<th>MEMBER</th>
<th>LITHOLOGIES</th>
<th>THICKNESS m</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Zamu Dolerite</td>
<td></td>
<td>Massive, medium to coarse grained. Quartz actinolite, tourmaline</td>
<td></td>
</tr>
<tr>
<td>Finniss River</td>
<td>Burrell Creek</td>
<td></td>
<td>Greywacke, siltstone, mudstone, rare chert iron formation and conglomerate</td>
<td>3000</td>
</tr>
<tr>
<td>South Alligator</td>
<td>Mt Bonnie</td>
<td>Upper</td>
<td>Mudstone, siltstone, chert, iron formation</td>
<td>100–250</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Greywacke, mudstone, siltstone, chert, carbonaceous mudstone, rare conglomerate</td>
<td>50–150</td>
</tr>
<tr>
<td></td>
<td>Gerowie Tuff</td>
<td></td>
<td>Chert, mudstone, siltstone, minor carbonaceous mudstone</td>
<td>200–400</td>
</tr>
<tr>
<td></td>
<td>Koolpin</td>
<td>Upper</td>
<td>Carbonaceous mudstone, mudstone, siltstone</td>
<td>50–150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Middle</td>
<td>Iron formation, mudstone, minor siltstone</td>
<td>130–150</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lower</td>
<td>Micaceous mudstone, siltstone, minor carbonaceous mudstone</td>
<td>0–250</td>
</tr>
<tr>
<td>Mt. Partridge</td>
<td>Wildman Siltstone</td>
<td></td>
<td>Mudstone, phyllite, siltstone, carbonaceous mudstone, sandstone</td>
<td>200–400</td>
</tr>
<tr>
<td></td>
<td>Mundogie Sandstone</td>
<td></td>
<td>Quartzite, arkose, pebble conglomerate, mudstone, siltstone</td>
<td>500</td>
</tr>
</tbody>
</table>
LEGEND
- Creek
- Geological body
- Quartz vein

GEOLOGY
PgF Fenton Granite
Pdz Zamu Dolerite
Psg Gerowie Tuff
Psk Koolpin Formation
Ppw Wildman Siltstone

EL 6797

PROJECT SHOBRIDGE / TOLMER JV.  STATE N.T.
ORIGINATOR N.B  Date 7/91  DRAWN R.L.  Date 7/91
SCALE 1:25000  FIGURE NO. 3  PLAN NO. 40A-Gc4

Dominion Mining Limited
4. PREVIOUS EXPLORATION

Exploration licence 6797 was previously within EL4738 held by W J and E E Fisher and explored under agreement by Burmine Ltd.

The Late Proterozoic sequence is characterised by a complex aeromagnetic signature with a pronounced positive feature in the central northern portion of the area. Outcrop in the vicinity of the magnetic feature is predominantly granite with irregular bodies of Zamu (?) dolerite and metasediment roof pendants. The magnetic target has been examined by W J and E E Fisher by gridding and systematic soil sampling, followed by limited stream sediment and rock chip sampling for gold. Some low order gold anomalies were located during this programme and minor base metals were noted in small pits excavated on a major east–west trending quartz vein.

Prior to the grant of EL4738 the Koolpin Formation along the western margin of the area was reportedly explored by a local prospector under a series of MLA's and, several years prior to that, by field parties from United Uranium looking for base metal mineralization. Numerous gold anomalous samples in the range 0.1 to 2.4 g/t gold were reported from the Koolpin by the prospector.

Work completed by Burmine included geological mapping, geophysical interpretation, bulk leach stream geochemistry (44 samples) and rock chip sampling (43 samples). Bulk leach samples were sieved through a 2mm mesh, approximately 5kg in weight, and collected at a density of approx one sample per 1.5 square km.

Burmine concluded the bulk leach sampling programme outlined two areas of anomalous cyanide extractable gold, both of which occur outside of the present EL6797 area.
5. **1990/1991 WORK PROGRAM**

5.1 **Aerial Photography**

During April 1991, Airesearch Mapping Pty Ltd of Darwin flew the Shoobridge–Fenton tenements held by Dominion and produced sets of 1:25,000 scale air photos. The relevant air photo runs are AM529, Runs 8 (078–080) and 9 (099–101) at 1:25,000 scale.

5.2 **Geophysics**

Interpretation of magnetic and radiometric data for the Tipperary (5170) 1:10,000 Geological Sheet indicates a strong magnetic high feature trending NW, representative of steeply dipping Proterozoic sediments. Previous mapping by NTDME and Burmine indicate these features are probably the faulted metasediment roof pendants within the Fenton Granite.

Acquisition of airborne magnetic and radiometric data previously flown by Geoterrex for Australian Coal and Gold will be used to assist in further interpretation and field exploration programmes. This data is yet to be located as, following relinquishment by Australian Coal and Gold of nearby tenements, the digital data was never submitted to the NTDME.
6. CONCLUSIONS AND RECOMMENDATIONS

During 1990/91, review of literature and government geophysical data has indicated the presence of complex magnetic signature and above background Au anomalies. Follow up field exploration of these features is required to determine the source of these anomalies.

The Dominion exploration programme, now in progress, includes acquisition and interpretation of Geoterrex flown geophysical data, regional mapping at 1:25,000 scale and stream and soil geochemistry. Following Year 1 expenditure of $14,200 against a covenant of $5,000, the Year 2 expenditure is proposed to be a minimum of $5,000.
Expenditure for EL6797, recorded for the 12 months ending 31 May 1991 as given below, is $14,200. Note that as the exploration program is in progress, some recent expenditure items have not been included in these figures. These will be included next year with Year 2 expenditure.

The Year 1 Exploration expenditure exceeds considerably the covenant of $5,000 reflecting the relatively high cost of acquiring airborne geophysical data, is subsequent interpretation by consultants and computerization and drafting of this data. It is not anticipated that Year 2 expenditure will incur such high cost data acquisition.

### EL6797 EXPENDITURE YEAR 1 TO 31 MAY 1991

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Aerial Photography</td>
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<td>Geophysics</td>
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<td>Aircraft Support</td>
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<td>Data Acquisition</td>
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<tr>
<td>Vehicles</td>
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<td>Computing &amp; Drafting</td>
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<td>Office</td>
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<td>Camp Rental</td>
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<td>Freight</td>
<td>32</td>
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<tr>
<td><strong>Total</strong></td>
<td>$14,200</td>
</tr>
</tbody>
</table>
8. REFERENCES

BLUCK, R G (1987)
"Exploration licence 4738, Plateau Point. Field Reconnaissance April–May, 1987."
Bumine Ltd.

KRUSE, P D, WHITEHEAD, B R and MULDER, C A (1990)
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Northern Territory Geological Survey


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