TITLE
FIRST & FINAL REPORT
EXPLORATION LICENCE 6231
FOUNTAINHEAD AREA
NORTHERN TERRITORY

PERIOD
11 OCTOBER 1988 to
23 JANUARY 1990

TENEMENT
TANAS PTY LTD

HOLDERS
11TH FLOOR

& OPERATORS
28 THE ESPLANADE
PERTH

DATE
MARCH 1990

1:250,000 Pine Creek SF52-8
1:100,000 Batchelor 5171

COPY NO: I
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1. Department of Mines & Energy, NT
2. Tanas Pty Ltd – Perth
Contents

LIST OF DRAWINGS

SUMMARY

1. INTRODUCTION

2. LOCATION AND ACCESS

3. TENURE

4. ENVIRONMENT AND ECOLOGY

5. PREVIOUS PRODUCTION & EXPLORATION

6. REGIONAL GEOLOGY

7. WORK COMPLETED

8. DISCUSSION

REFERENCES
## List of Drawings

<table>
<thead>
<tr>
<th>DRAWING NUMBER</th>
<th>TITLE</th>
<th>SCALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>T2-1</td>
<td>Location Plan</td>
<td>1:500,000</td>
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<tr>
<td>T2-2</td>
<td>Tenement Geology</td>
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</table>
Summary

Exploration Licence 6231 was granted on 11 October 1988 for a period of two years. Exploration carried out involved a literature review and a brief aerial photograph interpretation.

Efforts to secure a joint venture partner for the property were not successful and the tenement was surrendered.
INTRODUCTION

This report outlines the work carried out within Exploration Licence 6231 during the period of tenure. Several significant gold deposits and prospects occur in the area to east of the tenement. Exploration undertaken involved a detailed literature review and a brief aerial photography interpretation using colour aerial photographs.

LOCATION AND ACCESS

The Exploration Licence is located approximately 125 kilometres southeast of Darwin and approximately 15 kilometres north of Hayes Creek.

Access is via the sealed Stuart Highway from Darwin to the Fountainhead mine turnoff. The sealed Fountainhead access road heads to the Fountainhead rail siding and continues northward as an unsealed road to Ban Ban Springs homestead. This road passes approximately 600 metres east of the tenement at a point approximately 6 kilometres north of the Fountainhead siding (Drawing T2-1).

TENURE

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<td>1 block (3km²)</td>
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Exploration Licence 6231 was surrendered 23 January 1990.
4. ENVIRONMENT AND ECOLOGY

This region has a monsoonal climate with an average rainfall of 1,500mm per year, which is precipitated between December and May. From June to September, high temperatures and little rain prevail resulting in high evaporation rates.

The average mean temperature is 27°C. Day temperatures are high throughout the year with maximum summer temperatures in excess of 40°C common.

Prevailing winds are the southeast trade winds for the dry season and the northwest monsoon for the wet season.

Relative humidities average 40% to 75% respectively during these periods. The area is subject to tropical cyclonic effects.

Drainage patterns are generally broad open swales, with ill defined channels. Surface water is not permanent and the drainage systems flow only during the monsoon season. The vegetation consists of predominantly thick wet season grasses and open eucalyptus woodlands.

5. PREVIOUS PRODUCTION AND EXPLORATION

No evidence of previous mining activity has been located within the tenement. Extensive early mining activity occurred at the Fountainhead and Woolwonga mining fields located to the southeast and east of the Exploration Licence. The mining activity of the mainly Chinese itinerants was generally confined to the alluvial material and the shallow oxidised quartz lodes. Total recorded historical production for the Woolwonga and Fountainhead areas was in excess of 538 kilograms of gold.

Mining of the eluvial/alluvial gold resources at Fountainhead recommenced in the early 1980’s, however the current mine owners Zapopan NL ceased operations in late 1989.
Previous exploration activity within the area of the Exploration Licence appears to be very limited. The area was previously held as part of Exploration Licence 4177 held by Peko Wallsend Operations Ltd which was relinquished in March 1988. No reports on work carried out over the area of Exploration Licence 6231 were located. The area is currently the subject of extensive exploration following the discovery of significant hard rock resources at Woolwonga (Dominion Mining) and Glencoe (Magnum Gold).

6. REGIONAL GEOLOGY

Exploration Licence 6231 lies in the central part of the Pine Creek Geosyncline. The geosyncline consists of a succession of Lower Proterozoic basinal metasediments underlain by Archaean granite and gneiss basinal. The metasedimentary rocks consist of mainly shale, siltstone, greywacke, chemical sediments and minor conglomerate with occasional interbedded tuff horizons.

The hardrock mineralisation at the adjacent Fountainhead area is hosted by the sediments of the Burrell Creek Formation. The Burrell Creek Formation is the upper unit of the exposed Lower Proterozoic metasediments and consists of essentially flysch type sediments. The sequence at the Fountainhead mine consists of a thinly bedded shale, siltstone and carbonaceous shale. The gold mineralisation consists of narrow auriferous quartz–sulphide veins which have been emplaced along a major anticlinal crest. The quartz veins are folded around the axis and have developed thickened zones which plunge conformably with the fold structure (Porter 1984).
7. **WORK COMPLETED**

A thorough literature review was undertaken of the area covered by the Exploration Licence. The majority of the early production reports centred on the mining of the rich alluvial and shallow hardrock ore zones at the Woolwonga and Fountainhead gold deposits. No records were located that indicate that any previous mining activity had been undertaken within the boundaries of the current tenement.

An initial assessment of the area’s geology and structure was undertaken using aerial photographs. The majority of the tenement is covered by a thick mantle of soil, laterite and transported alluvium with small areas of black soil developed along the drainages. Small isolated exposures occur in the south western corner of the tenement and are thought to be outcrops of shale and siltstone, possibly related to the Gerowie Tuff unit. Immediately to the southwest of the tenement, isolated outcrops of a ferruginous shale and siltstone are present which possibly form part of the Mt Bonnie Formation.

In view of the extensive soil and alluvial cover over the majority of the tenement area, it was felt that a programme of sampling colluvial surface material was not appropriate. A programme of bedrock sampling either via shallow auger drilling or extensive trenching was considered more likely to produce a more representative result.

Given the ‘grass roots’ nature of the tenement and the added expense of trying to explore through the cover, the decision was taken to seek joint venture participation in the project.
8. DISCUSSION

The extensive soil cover existing over the tenement area has precluded any rapid assessment of the area's potential. Whilst the tenement is not on the major structural trends that host the Woolwonga, Glencoe and Fountainhead deposits, its position with respect to the granite intrusive combined with the inferred bedrock lithologies indicates some inherent potential.

In view of the above, a number of potential joint venture participants were approached. No suitable responses were forthcoming and consequently the decision was taken to surrender the tenement.
References

PORTER D J,
Annual Report for the Fountainhead and Woolwonga group of tenements, Northern Territory for the period 7 January 1982 to 30 June 1983.

1:100,000 Geological Map Commentary, McKinlay River, Northern Territory BMR, NTGS.
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AJH/MM: 208
NORTHERN TERRITORY GEOLOGICAL SURVEY - GEOSYSTEM DATA SHEET

REPORT NO. __________________ SECURITY __________________

REPORT TITLE First and Second Report Exploration Areas
E231, Fountainhead Area, Northern Territory

AUTHOR(S) ____________________ PUBLISHER ____________________

PLACE OF PUBL N __________________ DATE OF PUBL N __________________

DATA TYPE ____________________ PAGES OF TEXT 7 __________________

ACCOMPANIMENTS __________________

DRILL CORE? ____________________ LICENCE NO. E 6231 ____________________

PROJECT YEAR (S) 1 __________________

LICENSEE (S) TANAS Pty LTD __________________

JOINT VENTURE (S) / __________________

OPERATOR (S) TANAS Pty LTD __________________

1:1 000 000 __________________

1: 250 000 Pine Creek SF52-S __________________

1: 100 000 Bachelor 5171 __________________

1: 50 000 Fountainhead __________________

PROSPECT NAME __________________

SITE LOCATION LAT: 13° 25' LONG: 130° 30' __________________

EAST: __________________ NORTH: __________________

TECTONIC UNIT Pine Creek Geosyncline __________________

MAJOR TERM ○ PETROLEUM GEOL. ○ NONMETALLIFEROUS MINERALS ○ METALLIFEROUS MINERALS

MINOR TERMS __________________

DRILLING GEOPHYSICS AERIAL SURVEYS GEOCHEMISTRY GENERAL
○ DIAMOND ○ MAGNETIC ○ STREAM SEDIMENT ○ GEOL. MAPPING __________________
○ PERCUSSION ○ RADIOACTIVITY ○ SOIL ○ PHOTOGEOL OGY __________________
○ AUGER ○ E.M. SURVEYS ○ ROCK CHIP ○ GRIDDING METHODS __________________
○ ROTARY ○ ○ WATER ○ MEASUREMENTS __________________

GROUND ○ G S SURVEY METHOD ○ GEOSYSTEM GEOCHEMISTRY __________________
○ G F SURVEY METHOD ○ DRAINAGE TESTING ○ DRILL CORE ANALYSIS __________________
○ SEISMIC SURVEYS ○ ASSAYING ○ ASSAYING GEOSYSTEM __________________
○ RESISTIVITY SURVEYS ○ GEOCHEMICAL ANOM ○ GEOCHEMICAL ANOM __________________
○ GEOPHYSICAL ANOM ○ GRAVITY ○ GRAVITY __________________

NOTES __________________

ABSTRACT ATTACH __________________

INDEXED BY/DATE ___________ CHECKED BY/DATE ___________