ZAPOPAN NO
ACN 009 628 924

EXPLORATION RETENTION
LICENCE 119

YINBERRIE HILLS
MT TODD DISTRICT
NORTHERN TERRITORY

ANNUAL REPORT FOR EXPLORATION
YEAR ENDING 4 OCTOBER 1995
AND SUMMARY OF PREVIOUS
EXPLORATION ACTIVITIES

Author: Nick Burn
Date: September 1995
Reference: 0995-1.025
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1. **INTRODUCTION**

Exploration Retention Licence (ERL) 119 (Yinberrie) was granted to Billiton Australia Gold Pty Ltd (50%) and Zapopan NL (50%) on 2 October 1991 for a period of 3 years. Zapopan NL acquired 100% ownership on 7 April 1992. The licence comprises 4 only graticular blocks for a total area of 13.3 km². The licence has been renewed for a period expiring on 4 October 1999.

ERL 119 is located within the Yinberrie Hills north of Katherine, which is an area of cultural significance to the Jawoyn Aboriginal Community. The area is also a major breeding site for the Gouldian Finch, and it has been recognised that this bird is in danger of becoming extinct in the wild.

Due to the potential disturbance of a small part of the Gouldian Finch breeding habitat, Zapopan has not undertaken field exploration within ERL 119 since 1992. This decision was taken despite the licence having potential for economic gold mineralisation, and despite previous approval by the AAPA for exploratory drilling in the Yinberrie Hills area.

The company has received a suspension from work and expenditure conditions on its Yinberrie Hills titles including ERL 119 (Appendix 1).

2. **LOCATION AND ACCESS**

ERL 119 - Yinberrie is located approximately 45 km northwest of Katherine, and some 4 km west-northwest of the Mt Todd Gold Mine. Access can be gained via 4-wheel drive tracks from the Mt Todd Mine, or by the old disused gravel Edith Falls Road which runs eastward from the Stuart Highway (Figure 1). The historic Yinberrie Wolfram Field lies within and adjacent to the licence.

The region is of moderate and often rugged relief, and the country is well incised by abundant small creeks and drainages. The area is moderately timbered, including significant quantities of Salmon Gums which are the preferred nesting tree of the Gouldian Finch.

3. **REGIONAL GEOLOGY**

The Yinberrie Hills area is located within the south-eastern portion of the Early Proterozoic Pine Creek Geosyncline. Metasediments, granitoids, basic intrusives, acid and intermediate volcanic rocks occur within this geological province (Figure 2).

Within the Mt Todd District, the oldest outcropping rocks are assigned to the Burrell Creek Formation. These rocks consist primarily of interbedded greywackes, siltstones, and shales of turbidite affinity, which are interdispersed with minor volcanics.

Locally, ERL 119 covers part of the old tungsten workings in the Yinberrie Wolfram Field. The area comprises Yinberrie Leucogranite which has intruded and hornfelsed sediments of the Burrell Creek Formation. The Yinberrie Leucogranite is a highly fractionated late stage differentiate of the Early Proterozoic Cullen Batholith. The granite is an extensively greisenised body consisting predominantly of quartz and muscovite. Quartz veins within the Yinberrie Leucogranite have historically been exploited for tungsten, but also contain molybdenum, copper, gold and arsenic.
4. **WORK COMPLETED**

Previous work carried out by the Mt Todd Joint Venture has been detailed in previous Annual Reports for the Mt Todd Project Area and also for ERL 119 and included:

- Stream Sediment Sampling
- Gridding
- Soil Sampling
- Geologic Mapping
- Rock Chip Sampling
- Geophysical surveys; airborne and ground magnetics

This work was successful in discovering the Alfred Prospect, which is situated at the western boundary of ERL 119, and which continues into the adjacent exploration licence EL 7745 (also held by Zapopan).

5. **RESULTS**

5.1 **Stream Sediment geochemistry**

A total of 31 stream sediment samples have been collected from within ERL 119, from generally small creeks and drainages. Approximately 5 kg of material was sieved to -2mm in the field and assayed for gold using the BLEG technique.

A high proportion of the samples returned anomalous results, with a peak gold value produced of 13.9 ppb (see Figure 3). 11 out of 31 samples returned elevated gold assays above a background of approximately 1.0 ppb.

Sampling immediately to the west within EL 7745 also produced elevated results, and defined an anomalous zone of dimensions 2.5 km x 1.0 km.

5.2 **Soil Geochemistry**

A portion of the area containing the anomalous stream sediment geochemistry (named Alfred) was soil sampled in order to locate the source of the gold mineralisation. Sampling was conducted on 200m spaced lines, with samples collected every 10m and composited over 50m intervals. Approximately 2 kg of material was collected, sieved to -2mm in the field, and assayed for gold using the BLEG technique. A total of 47 samples were collected from within ERL 119.

This work delineated several narrow, subparallel gold soil anomalies which strike north-northwesterly and which straddle the ERL 119 - EL 7745 boundary. These anomalies are up to 600m long (Au > 8 ppb) with values as high as 130 ppb Au returned (Figure 4). Maximum gold value returned from within ERL 119 was 88 ppb Au.

The soil anomalies are generally coincident with quartz veins which have historically been prospected and mined for tungsten mineralisation.
ZAPOPAN NL
ERL 119
Stream Sediment Results
Au in ppb

Figure 3
5.3 Geologic Mapping

Geologic mapping of the central portion of ERL 119 has been completed (Figure 5). In particular, detailed geologic mapping of the area containing anomalous surface geochemistry (Alfred) has been undertaken. The grid area is comprised of Yinberrie Leucogranite which has intruded and hornfelsed sediments of the Burrell Creek Formation. This granite is a highly fractionated late stage differentiates of the Early Proterozoic Cullen Batholith, and is extensively greisenised.

Mapping outlined a number of polymetallic quartz-greisen veins striking approximately $325^\circ - 330^\circ$, with steep dips. These veins range in width from millimetre scale up to 2m across, and can be traced for up to 500m along strike. The larger veins have been mined via shallow workings for tungsten, but also contain significant quantities of gold, molybdenum, and copper (Figure 6). These veins are generally coincident with the gold soil anomalies discussed above.

5.4 Rock Chip Sampling

Some initial rock chip sampling of exposed quartz-greisen veins has been undertaken, generally in proximity to old tungsten workings. A total of 10 rock chip samples were collected from within ERL 119.

Only 2 weakly anomalous gold values were returned from this work, with a maximum result obtained of 0.94 g/t (Figure 7).

Rock chip samples were also strongly anomalous in Cu, Mo, W and As. Maximum values returned for these elements were 810 ppm Cu, 184 ppm Mo, 2650 ppm W and 1920 ppm As.

5.5 Geophysics

The Alfred Prospect and ERL 119 in general was flown as part of a larger regional airborne magnetic survey by the Mt Todd Joint Venture. No significant magnetic anomalies of features were outlined by this study at Alfred.

In addition, a ground magnetic survey was also completed using a G856 Proton Precession Magnetometer, with data captured at 10m spaced stations on 200m spaced grid lines. An analysis of the data delineated a flat magnetic response with no anomalous features being related to the auriferous quartz-greisen veins, nor the granite hornfels contact.
A regional airborne geophysical survey, including coverage of ERL 119, was completed for Zapopan by World Geoscience during June 1995 at 50m flight line spacing. Specifications of the survey are detailed below:

**Aircraft**
VH-ADH C206

**Magnetometer**
Split beam cesium scintrex VIW2321-CS2
Resolution : 0.001 nano Telsa
Cycle Rate : 0.1 seconds
Sample Interval : 6.0 metres

**Spectrometer**
Packets Perm. 1000 256 Channel
Volume : 16.56 litres
Cycle Rate : 1.0 seconds
Sample Interval : 60 metres

**Data Acquisition**
Packets Pads 1000 digital acquisition system
11 Channel RMS GR33A Chart Recorder

**Flight Line Spacing**
Traverse lines : 50 metres
Tie Lines : 984 metres

**Flight Line Direction**
Transverse Lines : 270 - 090 degrees
Tie Lines : 000 - 180 degrees

**Survey Height**
60 metres - mean terrain clearance

**Navigation**
GPS satellite positioning system.

See figure 8 for total field magnetic contours.

6. **GOULDIAN FINCH ISSUES**

The current area of ERL 119 encroaches into the Yinberrie Hills Breeding Habitat of the Gouldian Finch (see Figure 9).

The potential impact of the Mt Todd Project on the Gouldian Finch was the major issue raised during assessment of the Company’s Environmental Impact Statement for Mt Todd and specific recommendations were made within approvals given by the Commonwealth Environment Protection Authority and the Conservation Commission of the Northern Territory. Included in such recommendations was the implementation of a monitoring program for the Gouldian Finch and participation by Zapopan in a National Recovery Plan.

In view of the sensitivity of the area and the need for results of the monitoring program to determine any effects of the mining operation on the Gouldian Finch, Zapopan has submitted applications for suspension of work and expenditure covenants on ERL 119 (and other titles). Copies of the application and approvals are attached as Appendix 1.

7. **CONCLUSIONS AND RECOMMENDATIONS**

Surface geochemical sampling within ERL 119 has returned encouraging gold values at the Alfred prospect. Stream sediment results to 13.9 ppb Au, soil results to 88 ppb Au, and rock chip results to 0.94 g/t have been achieved during exploration previously carried out by the Mt Todd Joint Venture (Billion and Zapopan).

Geologic mapping has demonstrated that gold mineralisation is associated with polymetallic quartz-greisen veins, related to the Yinberrie Leucrogranite. A zone of quartz veining some 700m long by 200m wide has been identified which strikes approximately 325° - 330°. It is likely that gold mineralisation within this broad zone will be in the form of small, narrow and discrete grade lodes, containing significant quantities of Cu, W and As.
The Alfred prospect is an encouraging discovery and has ongoing potential for the
delineation of significant volumes of economic gold mineralisation. Any resources
outlined are likely to be relatively small tonnage, moderate grade deposits. However,
the proximity of the area to the Mt Todd Mine is a favourable aspect of the Alfred
prospect.

However, ERL 119 is situated within the Yinberrie Hills which is of cultural
significance to Aboriginal groups, and is the largest known natural breeding habitat
of the Gouldian Finch.

The Aboriginal Community has been supportive of exploration proposals for the area.
The threat to the Gouldian Finch by exploration activities is considered minimal but
this assumption is yet to be verified. Monitoring of the bird and research into reasons
for it’s declining numbers in the wild is continuing, funded in part by Zapopan.

Recommencement of exploration is scheduled for the 1995/96 licence year.

8. PROPOSALS FOR FUTURE WORK

The following exploration activities are proposed for the licence area :-

- Infill soil sampling ($2000)
- Systematic costeasting of the soil anomalies at the Alfred prospect ($2000)
- Initial RAB drilling of better costean anomalies ($9000)

The cost of this program is estimated to be $13,000.

9. EXPENDITURE STATEMENT

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ACN 009 628 924

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LICENCE 119

YINBERRIE HILLS
MT TODD DISTRICT
NORTHERN TERRITORY

ANNUAL REPORT FOR EXPLORATION
YEAR ENDING 4 OCTOBER 1995
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EXPLORATION ACTIVITIES

APPENDIX 1

APPLICATIONS AND APPROVALS
FOR SUSPENSION OF WORK
14 June 1993

Mr J W Mitchell
Secretary
Department of Mines & Energy
GPO Box 2901
DARWIN NT 0801

Dear John,

Zapopan NL is the holder of four Exploration Licences and one Exploration Retention Licence situated on the western side of the Mt Todd Project Site. All the Licences encroach into the Yinberrie Hills Breeding Habitat of the Gouldian Finch.

The attached plan shows the respective licences held by Zapopan as well as the breeding habitat area of the Gouldian Finch.

The potential impact of the Mt Todd Project on the Gouldian Finch was the major issue raised during assessment of the Company's Environmental Impact Statement and specific recommendations were made within approvals given by the Commonwealth Environment Protection Authority and the Conservation Commission of the Northern Territory. Included in such recommendations was the implementation of a monitoring program for the Gouldian Finch and participation by Zapopan in a National Recovery Plan.

Under conditions of its Exploration Licences and Exploration Retention Licence, Zapopan is required to undertake work programs and meet expenditure covenants to ensure that titles remain in good standing. Failure to meet these commitments places the licences under threat of cancellation.

Zapopan is prepared to meet its obligations on the licences however it believes that carrying out any exploration work in the Yinberrie Hills or its environs at this time may be considered provocative and cause an unnecessary reaction from the public against the Company and possibly against the Northern Territory Government. It is felt that the effects of the actual mining operation on the Gouldian Finch population needs to be analysed before any further encroachment into the Yinberrie Hills or its environs is undertaken. Zapopan believes this to be the most responsible position to take at this stage of project development.

The Company therefore wishes to make application under Section 172 of the Mining Act for a suspension of work and expenditure covenants and where applicable, reduction requirements on Exploration Retention Licence 119 and Exploration Licences 6037, 7227, 7519 and 7745. The suspension is sought for an initial period of twelve (12) months whilst an assessment can be made of the impact mining operations is having on the Gouldian Finch.
Due to the sensitivity of this issue, Zapopan will not undertake any work on its exploration titles in the Yinberrie Hills or its environs until advice is received on this application.

The application requires lodgement of a prescribed fee of $250.00 (being $50.00 per title) and this amount has been paid direct to your Department.

Yours sincerely

[Signature]

W G LOXTON
General Manager - Operations
Mr W G Loxton  
General Manager - Operations  
Zapopan NL  
PO Box 718  
WEST PERTH WA 6872

Dear Wayne

I refer to your letter of 14 June 1993 and my subsequent discussion with you, Ross McColl and Chris Smith.

As discussed at that meeting, the Department has considerable sympathy for the position in which your company finds itself with regard to the research project on the Gouldian Finch and the conflict it has with ongoing exploration.

I appreciated the frank discussions and understand why the various requests were brought forward at this time.

I can confirm that John Mitchell, the delegate of the Minister, with regard to section 172, has agreed that suspension of work and expenditure covenants on Exploration Retention Licence 119 and Exploration Licences 6037, 7227, 7519 and 7745 will be approved. In relation to the deferral of reductions, I can give an undertaking that a favourable recommendation will be given to the Minister.

However, as all these licences have different anniversary dates and are considered separate entities under the Mining Act, it would be more appropriate to make formal application at the same time as the statutory anniversary requirements.

Chris Smith and Ross McColl have already discussed this as suggested at our meeting. Suspension of work and expenditure covenants and requests for deferrals of reduction have been lodged for ELs 6037 and 7519. These will be processed as soon as possible.
In addition, I can confirm that the granting of Exploration Licence 8183, applied for by Dominion Mining Ltd, will be held up for a period of six months so that no work should be undertaken on this area that would interfere with your Gouldian Finch research project.

Yours sincerely

CARL I K BERGLIN
Director of Mines

13/8/93
February 10, 1994

The Hon Shane Stone MLA
Minister for Mines & Energy
NT House Mitchell Street
DARWIN NT 0800

Dear Shane,

Zapopan NL is the holder of five Exploration Licences and one Exploration Retention Licence situated on the Northern, Western and Southern sides of the Mt. Todd Mine site. All the licences encroach into the Yinberrie Hills breeding habitat of the Gouldian Finch.

The attached plan shows the respective licences held by Zapopan as well as the breeding habitat area of the Gouldian Finch.

The potential impact of the Mt. Todd Mine on the Gouldian Finch was the major issue raised during assessment of the Company's Environmental Impact Statement and specific recommendations were made within approvals given by the Commonwealth Environment Protection Authority and the Conservation Commission of the Northern Territory. Included in such recommendations was the implementation of a monitoring programme for the Gouldian Finch and participation by Zapopan in a National Recovery Plan.

Under the conditions of its Exploration Licences and Exploration Retention Licence, Zapopan is required to undertake work programmes and meet expenditure covenants to ensure that titles remain in good standing. Failure to meet these commitments places the licences under threat of cancellation.

Zapopan initially raised this issue with your Department in June 1993 and it has received sympathetic consideration in so far as suspension of work and expenditure covenants and deferral of statutory reductions on the titles are concerned.

It had been hoped that activities on the licences could be resumed this forthcoming field season and forward work programmes have been submitted to the Department on the assumption that exploration would be possible. However, there is still insufficient data on the effects of the actual mining operation on the Gouldian Finch population to give the Company comfort that a resumption of exploration activities would not be viewed as provocative.
I discussed the Company's situation on these titles with Bob Adams of your Department and Roger Smith of the Conservation Commission on Friday 28 January 1994 and they agreed that exploration activities should not be resumed at this time. However, this would once again place the Company in the position of being unable to meet its work and expenditure covenants and also to make reductions of the licence areas where required. There is also the situation where two of the licences are due to expire in the second half of 1994 and the Company will be seeking renewal of those licences.

In the circumstances, the Company is seeking comfort that it can retain its existing titles in the Yinberrie Hills over their existing areas, including those that will be subject to renewal applications on the basis that work, expenditure and reduction covenants will be suspended until further exploration activity is possible.

In view of the involvement of the Conservation Commission in this area, I would appreciate if you could also advise them of our position if appropriate.

Yours sincerely,

[Signature]

TERRY STRAPP
EXECUTIVE CHAIRMAN

Encl:
28 February 1994

Mr Terry Strapp
Executive Chairman
Zapopan NL
GPO Box 625
DARWIN NT 0801

Dear Terry

I acknowledge receipt of your letter dated 10 February 1994, regarding your Company’s tenure at Mt. Todd.

You should note that the legislation permitting renewal of exploration licences has not yet been enacted.

Nevertheless, I hereby advise that I have instructed the Department not to commence any cancellation proceedings in respect of Exploration Licences 6037, 7227, 7519, 7745, 7989, and Exploration Retention Licence 119 at present.

However, your Titles Manager should formally apply for suspension from the need to comply with relevant conditions, at the appropriate times in respect of each licence as he did in 1993.

The Department will advise the Conservation Commission that the deferrals are to be granted so as exploration activities will not interfere with Gouldien Finch monitoring.

Yours faithfully,

Shane L. Stone

Northern Territory Government