EXPLORATION LICENCE 7810
HAYWARD CREEK

SECOND YEAR RELINQUISHMENT REPORT
4 April 2001 - 3 April 2003

LICENSEE:
GIANTS REEF EXPLORATION PTY LTD
A.B.N. 009 200 346

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May 2003
SUMMARY

Exploration Licences 7810 *Hayward Creek* is explored with EL 10129 *Alexander* and 10311 *Gibson Creek* as one of three contiguous tenements that Giants Reef Exploration Pty Ltd (Giants Reef) refer to as the Alexander project area. EL 7810 was acquired to search for large base metal deposits possibly associated with a regional gravity anomaly centred in the southern part of the relinquished area, covered by the adjoining Licences.

The project is being explored under the terms of Giant Reef's alliance with Billiton Exploration Australia Pty Ltd, who are funding the program. During 2001, Billiton's parent company merged with BHP to form BHP Billiton.

This report records the exploration work completed on the portion of no continuing interest (the relinquished area) of EL 7810, to the end of the second year of tenure, on the 3rd April 2003.

Tennant Creek-style orebodies are regarded as secondary targets in EL 7810 as the focus of exploration, under the Strategic Alliance agreement with BHP Billiton, was to find major base metals or base metals/precious metals deposits.

Geophysical assessments of the Alexander Gravity Anomaly within the relinquished portion of EL 7810 did not identify any coincident gravity and magnetic features that could present drill targets. The Alexander Gravity Anomaly is thus no longer regarded by Giants Reef as indicating possible iron oxide-rich lithologies that could host a large base metals deposit.

Of the secondary targets identified within the relinquished area, reconnaissance and rock chip sampling produced no anomalous results or potential drill targets.

At the end of the second year of tenure the Licence area was reduced from 103 to 13 graticular blocks. Much of the relinquished area (approximately 25%) was identified as exclusion zones and culturally sensitive areas by the CLC under instruction from the Native Title holders of the Tennant Creek region. Under the ILUA Agreement no exploration is allowed on the Exclusion Zones. The remaining relinquished tenure was viewed by Giants Reef as holding low exploration potential for major base metals, or traditional Tennant Creek type Au-Cu-Bi ironstone hosted mineralisation.
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1. EL 7810 and Alexander Project Area Location
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1. Rock Chip Sample Data
1. **INTRODUCTION**

Exploration Licence 7810 *Hayward Creek*, is explored with EL 10129 *Alexander* and 10311 *Gibson Creek* as one of three contiguous tenements that Giants Reef refer to as the Alexander Project Area. EL 7810 was acquired to search for large base metal deposits possibly associated with a regional gravity anomaly centred in the southern part of the relinquished area, covered by the adjoining Licences.

The project is being explored under the terms of Giant Reef’s alliance with Billiton Exploration Australia Pty Ltd, who are funding the program. During 2001, Billiton’s parent company merged with BHP to form BHP Billiton.

This report records the exploration work completed on the portion of no continuing interest (the relinquished area) of EL 7810, to the end of the second year of tenure, on the 3rd April 2003.

2. **LOCATION**

EL 7810 covers a wide tract of country spanning the Stuart Highway between 45km and 64km north of Tennant Creek Township, on the Flynn 1:100,000 scale map sheet (5759).

Access from Tennant Creek is via the Stuart Highway and thence by various dirt roads and tracks along fence lines. However, much of the area is rocky, without tracks and difficult to reach, even in a 4x4 vehicle. The tracks following the major creek systems become impassable during the wet season.

Figure 1 shows EL 7810, and the Alexander Project Area and surrounding tenure.

3. **TENURE**

Exploration Licence 7810 was granted to Giants Reef Exploration Pty Ltd on the 4th April 2001, for a period of 6 years.

On 12th November 1999, Billiton Exploration Australia Pty Ltd (Billiton) entered into an Alliance agreement with Giants Reef whereby Billiton acquired approximately 7% equity in Giants Reef, in return for providing funding for the exploration, by Giants Reef, of four project areas in the Tennant Creek region. Exploration Licences 7810, 10129 and 10311 together constitute the Alexander Project Area.

The original area of EL 7810 totalled 103 graticular blocks (271.3km²). At the end of the second tenure year EL 7810 was reduced from 103 to 13 one-minute graticular blocks.

EL 7810 is within NT Portion 408, Perpetual Pastoral Lease 946, Phillip Creek Station. The Licence is subject to an Indigenous Land Use Agreement (ILUA), signed in September 2000 between the Native Title holders of the Tennant Creek region, represented by the Central Land Council, and Giants Reef.

Figure 2 shows the relinquished blocks and retained Licence area of EL 7810.
4. GEOLOGY

4.1 Regional Geology

Papers contained in AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861 provide a good introduction to the Tennant Creek regional geology and styles of gold-copper mineralisation of the Tennant Creek region.

More recent references are the Flynn 1:100,000 geology map and the 1:250,000 Tennant Creek geology map, with their Explanatory Notes, published by the Northern Territory Geological Survey in 1995 and 1999 respectively. These include a revised stratigraphy.

4.2 Local Geology

In the southern leg of EL 7810, outcrops of the Palaeoproterozoic Brumbreu Formation (Flynn Sub-group) are found, but the bulk of the rest of the Licence area is underlain by sandstones and other sediments of the Hayward Creek Formation (Tomkinson Creek Sub-group). West of the Stuart Highway these units strike north-south and are overlain by arenites of the (relatively) younger Morphett Creek Formation along the western boundary of EL 7810. East of the Stuart Highway, basement exposure is poor, with extensive patches of the Hayward Creek Formation but much larger areas of Quaternary alluvium and soils, including the flood-out areas of the major Hayward Creek and Gibson Creek systems.

5. WORK DONE DURING THE TERM

5.1 YEAR 1

5.1.1 Introduction and Target Concepts

Exploration within the relinquished portion of EL 7810 was aimed at discovering large deposits of base metals along with substantial gold and/or silver, probably accompanied or hosted by large volumes of iron oxide minerals. Giants Reef were not applying a precise model to the target, but the style of occurrence was envisaged as being situated in iron oxide-rich lithologies and therefore likely to be associated with a regional or district-scale gravity anomaly and probably also with a magnetic anomaly.

The EL is well away from the established Tennant Creek goldfield, in the relatively younger and geologically distinct Ashburton Province, and any mineral deposits found here are likely to be very different from the well-known ironstone-related gold-copper deposits of the Tennant Creek Province.

Giants Reef’s main focus of exploration within the relinquished portion of EL 7810 was the Alexander Gravity Anomaly (Giants Reef’s term) which is centred about the Stuart Highway, extending from EL 10129 through EL 10311 and north into EL 7810 (Alexander Project Area). This gravity anomaly is interpreted as being caused by dense, probably iron-rich, rocks and may be a favourable geological environment in which to be searching for sort of large-scale mineral deposits envisaged.

5.1.2 Literature Search and Secondary Targets

Apart from the Alexander Gravity anomaly, which Giants Reef viewed as the most important target in the EL, there are four other prospects or anomalies that Giants Reef identified from various reports on previous work and the geology of the region. The targets are all outside the central area of the Alexander Gravity anomaly, and were therefore regarded as secondary targets. They are:

1. The Explorer 98 magnetic anomaly, located in the Hayward Creek drainage about 9km east of the highway, in an area of no outcrop. Geopeko identified this anomaly in the 1970s and
attributed it to a magnetic basic dyke, but Giants Reef does not have reports of the work that led to this conclusion.


3. A magnetic anomaly in the north-central part of EL 7810, at (AGD84) AMG 408800E 7888000N.

4. A linear east-west residual gravity anomaly running north south through the northern area of the Licence.

These are regarded as secondary targets, as the focus of exploration, under the Alliance agreement with BHP Billiton, was to find major base metals or base metals/precious metals deposits possibly associated with the Alexander Gravity anomaly.

5.1.3 Reconnaissance and Rock Sampling

A ground reconnaissance trip was made to locate and sample the magnetic anomaly (target 3 in Section 5.1.2) in the north-central part of EL 7810. The anomaly stands out well on the old 1970’s magnetic contours, but is not so clearly visible on the 1999 AGSO aeromagnetic images. The target was not reached because the old tracks were very overgrown or had disappeared altogether, and there were still patches of soft ground along the Attack Creek valley. Six rock samples (74585-74590) were taken from very ferruginous exposures of the Morphett Creek Formation at several locations. This material was interpreted as duricrust or ferricrete.

On a later occasion, a helicopter was used to visit several of the above target areas in EL 7810. The target 4 gravity anomaly was located and sampled. It occupies an area of dark recessive outcrops of basic or intermediate volcanics, probably belonging to the Whittington Range Member at the top of the Hayward Creek Formation, a unit that includes volcanic lithologies.

Finding the gossanous laterite outcrops (target 2) reported by Dunnet and Harding 1967, from “near the confluence of Phillip Creek and Gibson Creek” proved unsuccessful, possibly because the location description covers a broad area.

A road metal quarry a few hundred metres west of the Stuart Highway at (very approximately) 412300E 7885600N was visited and sampled during the helicopter reconnaissance. These very dark weathered and ferruginised outcrops, probably of Tertiary ferricrete developed on the Brumbreu Formation.

In all, 24 rock samples (422757-780) were taken from the areas visited by helicopter. Nearly all of them were iron-rich (20% to 44% Fe) but none of them showed any notable base metals or gold anomalism. This was also true of the earlier ground reconnaissance rock samples (74585-74590).

Appendix 1 contains locations, descriptions and full assay results for the rock samples.

5.1.4 NTGS/AGSO Gravity Survey Assessment

Consulting geophysicist Frank Lindeman, of Lindeman Geophysics Pty Ltd, Melbourne, assessed the new NTGS/AGSO gravity data over EL 7810. This data came from the NTGS/AGSO gravity survey covering the whole Tennant Creek 1:250,000 sheet, plus some adjoining areas. The survey was conducted in mid-2001.
Mr Lindeman’s assessment, dated 28 February 2002, deals with a number of areas both inside and outside the Alexander project area and EL 7810. An extract of the relevant paragraphs is reproduced here:

“The (Alexander project) ground holdings … were designed to cover a discrete N-S trending lozenge-shaped Bouguer gravity response as defined on the original gravity data. Although many of the gravity stations in the area are from the original regional 11 km station interval survey, the regional stations, which define this anomaly, were augmented by a roughly N-S road gravity traverse. It had been hoped that any additional data would have produced a more confined and definite anomaly on which to focus.

The new 4 km spaced gravity data however failed to “deliver” for this anomaly, but appears to have developed a small response of some interest to the east of the original response.

The Bouguer gravity response in the Alexander tenements should be discussed at two levels: from the Bouguer gravity and residual Bouguer gravity perspectives. The new Alexander Bouguer gravity data divides the original response into (1) two separate responses plus (2) the new anomaly to the east.

The first anomaly is a >35 km NNE trending response, the southern half of which parallels, some 30 km to the NW, the eastern “leg” of the inverted U-shape of the Rosella Bouguer response (located about 25km to the west). The second is a small response centred at 412000E, 7889000N and which emanated from the northern end of the original response. Neither of these responses is compelling from a targetting perspective, as they appear to be more like part of the same regional response than being caused by possible ore deposits. The processed Bouguer residual for both these anomalies, while showing the anomalous responses discussed above without the anomalous background, also shows that the broad station density of mostly ~ 4 km, which defines this anomaly. It is my contention that it is this station density, rather than being due to a series of higher density “possible ore deposit geology” which is principally responsible for the individual anomaly peaks within this response. It is likely that more data would smooth out these responses into much more convincing looking regional responses. So despite the insufficient station spacing, the gravity data fails to enthuse enough to demand closer station follow-up, which would be necessary to define possible targets.

Centred at 425000E 78976000N, (a separate) small and discrete response is well located within the gradient of the large gravity response. It is defined by both some of the recent 4km-spaced data and several additional stations, probably read by Normandy. Despite this coverage, more data would need to be collected if it was thought that this anomaly maintained some potential.

Comparison of the three gravity responses above with the aeromagnetic data shows … that there is little correlation between the two data sets. The strongly magnetic sediment horizons are seen within and outside of the gravity anomalies although locally it does appear that there appears some relationship between magnetic and gravity responses. However it would be magnetic responses from other than from these sediments and coincident with gravity responses that could constitute an area of interest. It is therefore difficult to find an area in the Alexander holdings where interesting co-incident gravity and magnetic responses could be seen as a possible drill target. The anomaly described in (2) above is devoid of any coincident magnetic response, sediment or otherwise.

Although the Alexander project area contains a wide gravity station spacing, the broad nature of the anomalous responses, and the lack of convincing and related magnetic anomalism, leads me to the conclusion that no geophysical target exists and no further closer spaced data need to be considered. This conclusion is supported by the absence of any other geoscientific data which could provide some encouragement.”
This observation downgraded the exploration potential of the Alexander Gravity Anomaly target within EL 7810. Giants Reef’s intention of drilling a test hole or holes in the centre of the residual Alexander Gravity Anomaly peak was abandoned.

5.1.5 Explorer 98 Magnetic Anomaly

The Explorer 98 magnetic anomaly (refer Section 5.1.2) is centred at approximate AGD84 co-ordinates 422400E 7883000N. In images of the AGSO 1999 aeromagnetic data, this anomaly does not stand out very clearly from the strong neighbouring magnetic activity, whereas in the old 1970’s magnetic contours, it appears as a more discrete or isolated anomaly. This may simply be a function of the broader flight line spacing of the older survey.

On images of the residual Bouguer gravity data from the mid-2001 NTGS/AGSO gravity survey, Explorer 98 shows a moderate amplitude one-station gravity high. No further investigation of the anomaly was undertaken by Giants Reef in the first tenure year.

5.1.6 Access Clearance from the Central Land Council

The Central Land Council (CLC) commenced land access clearance for the work proposed by Giants Reef in a program submitted under the ILUA in February 2001. At the end of the first tenure year the clearance work had not been completed.


5.2 YEAR 2

5.3 Access Clearance from the Central Land Council

Under the terms of Giants Reef’s Indigenous Land Use Agreement (ILUA) with the Native Titleholders of the Tennant Creek region, it was necessary to obtain clearances from the Native Title holders before the field parties could enter the area.

The CLC and the traditional Aboriginal owners of the land conducted a land access clearance for the work proposed by Giants Reef in a program submitted under the ILUA in February 2001. The Alexander project area, including EL 7801, clearance was commenced in October 2001, but was interrupted and put on hold for a number of reasons. The Alexander clearance was completed in May 2002.

Seven exclusion zones were identified within the relinquished area of EL 7810, covering sacred sites and site complexes, including some sites registered under the Sacred Site Protection Act. Exploration activities are not approved within the identified Exclusion Zones. Much of the north western area in EL 7810 is an exclusion zone surrounding the Hayward and North Hayward Creek systems.

The work program was approved by the CLC subject to a number of conditions. One provision was that all mature trees and stands or groups of trees must be avoided and protected. Additionally, any soakages, rockholes, archaeological material or sites, stone arrangements etc encountered during exploration are to be avoided.
5.4 Exploration

As a result of the downgrading of the Alexander Gravity Anomaly in EL 7810, for major base metal or base metals/precious metals deposits, the field activities proposed in the first year for the Licence were reprioritised. Giants Reef focused their 2002 field season commitments primarily within the Bluebush tenements of EL 8882, 8883 and 10402. These tenements are also under the Alliance with BHP Billiton in which the major targets are base metals and precious metal deposits.

As a result no on ground exploration was undertaken over the relinquished area in the second tenure year.

5.5 Tenement Review

An internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities in September 2002 assessed the future exploration potential of EL 7810 and the prospects within the Licence.

The review recommended that Giants Reef substantially reduce the tenement holding of EL 7810 and retain only the areas covering the targets which may still hold potential for Tennant Creek style shallow or substantial gold mineralisation.

At the end of the second year of tenure the Licence area was reduced from 103 to 13 graticular blocks. Much of the relinquished area (approximately 25%) was identified as exclusion zones and culturally sensitive areas by the CLC under instruction from the Native Title holders of the Tennant Creek region. Under the ILUA Agreement no exploration is allowed on the Exclusion Zones. The remaining relinquished tenure was viewed by Giants Reef as holding low exploration potential for traditional Tennant Creek type Au-Cu-Bi ironstone hosted mineralisation.


6. REHABILITATION

No rehabilitation measures were required on the relinquished portion of EL 7810.
7. CONCLUSIONS

Tennant Creek-style orebodies are regarded as secondary targets in EL 7810 as the focus of exploration, under the Strategic Alliance agreement with BHP Billiton, is to find major base metals or base metals/precious metals deposits.

Geophysical assessments of the Alexander Gravity Anomaly within the relinquished portion of EL 7810 did not identify any coincident gravity and magnetic features that could present drill targets. The Alexander Gravity Anomaly is thus no longer regarded by Giants Reef as indicating possible iron oxide-rich lithologies that could host a large base metals deposit.

Of the secondary targets identified within the relinquished area, reconnaissance and rock chip sampling produced no anomalous results or potential drill targets.

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AREA RELINQUISHED

HAYWARD CREEK

NT Por 1311
PPL 946 "PHILLIP CREEK"

Area: 103 blocks
271 sq km

NORTHERN TERRITORY

Kilometres
Scale: 1:170,000

GIANTS REEF EXPLORATION PTY LTD
TEMANN CREEK NORTHERN TERRITORY

AREA
EL 7810 – Hayward Creek

MAP REF.
5658 FLYNN 1:100 000

SUBJECT
Retained blocks for Year 2

DATE
MAR 2003

AUTHOR
JLC

SCALE
FIGURE 2
APPENDIX 1

EL 7810 HAYWARD CREEK

Rock Chip Assays and Location Data

Micromine Database – ALEX_ROCKS.DAT
Excel Database – ALEX_ROCKS.XLS
REPORT NAME: EL 7810 Hayward Creek SECOND YEAR RELINQUISHMENT REPORT 4TH APRIL 2001-3RD APRIL 2003

PROSPECT NAMES(s): EL 7810 – HAYWARD CREEK

GROUP PROSPECT NAME: ALEXANDER

TENEMENT NUMBERS(s): EL 7810

ANNIVERSARY DATE: 4 APRIL 2003

OWNER/JV PARTNERS: GIANTS REEF EXPLORATION PTY LTD (Owners)
BHP BILLITON (Alliance).

AUTHOR(s): J.L.CAHILL
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COMMODITIES: GOLD, COPPER, LEAD, ZINC, SILVER, BISMUTH

MAPS 1:250 000: TENNANT CREEK SE53-14

MAPS 1:100 000: TENNANT CREEK 5758, FLYNN 5759

MAPS 1:25 000: TECTONIC UNIT(s): TENNANT CREEK INLIER

STRATIGRAPHIC NAME(s): WARRAMUNGA FORMATION

AMF GENERAL TERMS: LITERATURE SEARCH

AMF TARGET MINERALS: GOLD, COPPER, BISMUTH, LEAD, ZINC.

AMF GEOPHYSICAL: GEOPHYSICAL INTERPRETATION, NTGS & AGSO

AMF GEOCHEMICAL:

AMF DRILL SAMPLING:

HISTORIC MINES:

DEPOSITS:

PROSPECTS: EXPLORER 98

KEYWORDS: ALEXANDER PROJECT, EL 7810, EL 10129, EL 10311
ALEXANDER GRAVITY ANOMALY