EL 23745
Vivid

FINAL REPORT

LICENSEE:
GIANTS REEF EXPLORATION PTY LTD
A.B.N.58 009 200 346
(A wholly owned subsidiary of Emmerson Resources Ltd)

29 June 2004 – 07 July 2008

AUTHOR: ADAM WALTERS
OCTOBER 2008

DISTRIBUTION:
Department of Regional Development, Primary Industry, Fisheries & Resources
Central Land Council
Emmerson Resources Ltd

MAP SHEETS:
TENNANT CREEK SE53-14
FLYNN 5759
SHORT RANGE 5659
1:100 000
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1. SUMMARY

This Final Report records exploration work done on EL 23745 between 29 June 2004 and 07 July 2008.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this.

Emmerson’s review of the exploration work conducted over EL 23745, revealed that further exploration work and reassessments of previous exploration needed to be conducted in order to fully assess the potential for economic discoveries.

Emmerson commenced its aggressive exploration programs in April 2008 which includes, a detailed ground gravity survey of the Tennant Creek Mineral field, including EL 23745, airborne geophysical surveys, and drill testing of targets. With newly captured geophysical data providing greater detail of the exploration potential of Emmerson’s tenure which includes EL 23745, Emmerson consolidated EL 23745 into SEL 26595 to allow for the analysis and interpretation of this data, and provided with good results drill testing of targets identified.

Therefore with reassessments of previous exploration work and the analysis and interpretation of newly captured data to be conducted during the remainder of 2008 and into 2009 all Emmerson Tenure, including EL 23745 remain ‘prospective’.

Automatic cancellation of EL 23745 occurred on 07 July 2008 upon the grant of Substitute Exploration Licence 26595.
2. INTRODUCTION

Exploration Licence 23745 was acquired by Giants Reef Exploration Pty Ltd (Giants Reef) to search for Tennant Creek style iron oxide copper-gold deposits (“IOCG”).

Giants Reef Exploration is a wholly owned subsidiary of Emmerson Resources Ltd.

This Final Report records exploration work done on EL 23745 between 29 June 2004 and 07 July 2008.

3. LOCATION

Exploration Licence 23745 VIVID, is located approximately 30 km north north-east of Tennant Creek on the Flynn (5759) 1:100 000 scale map sheet.

The principal access to the general Licence area from Tennant Creek is north west via the Warrego Road then north via the Gecko Mine Road, from here access to the licence area is gained north east via various dirt roads and fence lines tracks. However, much of the Licence areas are rocky, without tracks and difficult to reach, even in a 4WD vehicle. The unsealed tracks become impassable during the wet season.

Figure 1 shows the location of EL 23745 Licence with respect to the Tennant Creek Township.

4. TENURE

Exploration Licence 23745 VIVID was granted to Giants Reef Exploration Pty Ltd on 29th June 2004, for a period of 6 years each.

The Exploration Licence lies within NT Portion 4086, Phillip Creek, Perpetual Pastoral Lease 946.

EL 23745 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.
5. GEOLOGY

5.1 Regional Geology

The reader is referred to AusIMM Monograph 14 (Geology of the Mineral Deposits of Australia and Papua New Guinea), Volume 1, pp. 829-861, to gain a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

In 1995 the Northern Territory Geological Survey released a geological map and explanatory notes for the Flynn 1:100,000 sheet, which covers the area of the licenses.

The rocks of the Warramunga Formation host most of the orebodies in the region and underlie most of the Exploration Licenses.

5.2 Local Geology

The project area is on the northern fringe of the established Tennant Creek goldfield. Except in a few localities, bedrock geology within the Licence area is not well revealed due to the discontinuous nature of sparse outcrops. Much of the combined Licence area is underlain by the predominantly felsic volcanics or volcanically derived sedimentary rocks of the Flynn Sub-group, while the more northern parts consist of sediments of the lower Tomkinson Creek Sub-group.

The geology in the southern and eastern Licence areas consists of scattered outcrops of weathered siltstone and greywacke of the Warramunga Formation.

Quaternary sand and gravel covers most bedrock exposures to the east of the Stuart Highway however outcrop occurrence tends to increase to the west of the Stuart Highway.

There are a number of intermittent outcrops of granite, metamorphosed sediments and ironstone throughout the western part of the combined Licence area.

In 1995 the Northern Territory Geological Survey released geological maps and explanatory notes for the Tennant Creek 1:250,000 sheet, and the Flynn (5759) 1:100 000 sheets, which covers the area of the license.
6. EXPLORATION

6.1 Targets and Concepts

Exploration for large base metal deposits possibly associated with a regional gravity anomaly centred in the southern part of the area covered by the adjoining Licences, with additional targets including Tennant Creek-type ironstone hosted Au-Cu-Bi ore bodies.

Proterozoic Inliers world-wide, and particularly in Australia, are renowned for their iron-rich mineralisation and world class metal deposits. For many years prominent geologists and researchers in the industry have pointed out the geological similarities that the broader Proterozoic Tennant Creek Inlier shares with the Gawler Craton, host to the Olympic dam deposit, and to the Eastern Succession of the Mt Isa Inlier that hosts the Ernest Henry and Selwyn deposits. These similarities, though recognised, had not been widely acted upon by the industry.

Exploration 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's target model iron oxide-rich lithologies and are therefore likely to be associated with regional or district-scale gravity anomalies, and potentially coincident with a magnetic anomaly.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this. Giants Reef considers the potential for the discovery of mineralisation in hematite dominant ironstones in the relinquished group is limited.

6.2 Exploration Undertaken – 29 June 2004 to 07 July 2008

A geological re-assessment by Normandy, Tennant Creek (1991) of earlier drilling, which involved detailed re-logging of diamond core and geophysical reinterpretation, suggested that the existing 40m spaced drill sections were too broad to delineate the mineralised zone accurately.

GeoPeko (1970 – 1990) - GeoPeko explored the general Phillip Creek region intermittently from 1970 through to 1990. One moderate magnetic anomaly, Explorer 166 (Vivid), was defined from aeromagnetics and was pegged for mineral leases in 1975, these applications were withdrawn prior to grant.

Australian Development Limited (pre-1991) - Exploration by ADL included the flying of a low level aeromagnetic survey in 1973, from which four magnetic features interpreted to possibly represent concealed magnetite-haematite ironstones, were chosen for detailed
investigation. These anomalies were named PC1 to PC4. These anomalies do not lie within the Licence Area.

Newmont Australia Limited (1987-1990) - Newmont completed an extensive exploration program encompassing the region from 1987 to 1990. This work was predominantly completed under a Joint Venture Agreement with ADL. Initially Newmont decided to undertake an empirical, non-model specific exploration program, aimed at detecting mineralisation associated with subtle magnetic signatures or structurally-controlled non-magnetic settings. The typical ‘Tennant Creek style’ magnetite ironstone target was not pursued. Exploration included regional geochemical ‘BLEG’ soil surveys and follow-up soil sampling and RAB drilling, a low level airborne magnetic and radiometric survey, semi-regional gravity surveys and regional geological mapping. Anomaly P2 (Geopeko’s Explorer 166) was flagged for further work.

The Vivid magnetic anomaly (anomaly P2 / Exp 166) was investigated further in 1989, with geophysical modelling undertaken to determine the size, depth and attitude of the source of the dipolar aeromagnetic anomaly. A program of RC drilling and downhole magnetic probing led to the discovery of the buried P2 ironstone (in the second hole), which was subsequently renamed Vivid. Encouraging Au-Cu mineralisation was encountered in Newmont’s initial drilling, and a total of nine combined RC and diamond drillholes were completed into the ironstone. All holes intersected anomalous Au and Cu and better results include:

VIRC-002: 30m @ 2.45% Cu from 159m downhole
8m @ 4.76 g/t Au from 177m downhole
2m @ 3.48 g/t Au from 203m downhole

VIVD-003: 1.9m @ 3.11 g/t Au, 2.07% Cu from 255.1m downhole

VIVD-005: 10m @ 2.65% Cu from 239m downhole
12m @ 2.10% Cu from 267m downhole
10m @ 10.11 g/t Au from 268m downhole

VIVD-006: 3m @ 5.07 g/t Au from 327m downhole

VIVD-007: 1m @ 4.73 g/t Au from 334m downhole

VIVD-008: 7.5m @ 3.00% Cu from 278.5m downhole
10m @ 1.83 g/t Au from 348m downhole incl.
1m @ 6.00 g/t Au from 355m downhole

In a concerted effort to understand the geometry of the ironstone and its geochemical and geophysical expression, detailed soil sampling, RAB drilling, IP, EMP, ground magnetics
and gravity surveys were completed over the ironstone. Angled RAB drilling to a vertical depth of 70m was successful in outlining a geochemical ‘halo’ in the weathered sediments above the ironstone, above 20 ppm Cu.

The IP and EMP surveys did not conclusively identify conductive anomalies which could be directly attributed to the ironstone. The gravity survey was successful in indicating the position of several structures thought to control the location of the ironstone, but did not define the body as a discrete anomaly of high density. It was concluded that the surface and downhole magnetics were the best geophysical tools for direct detection of the ironstone.

All RC / Diamond drillholes were probed with the downhole magnetometer, and detailed modelling and interpretation of this data was undertaken. Modelling indicated the ironstone was a westerly plunging body, which flattened in plunge from the centre of the ironstone. A mass in the order of 2Mt of ‘ironstone’ was estimated. The magnetite-quartz ironstone displays a characteristic alteration envelope of magnetite-chlorite, chlorite, an upper haematite-talc-jasper-carbonate zone, and an upper dolomite-rich zone.

Newmont concluded that the Vivid ironstone system had the potential to host a significant tonnage of Au and/or Cu mineralisation. Recommendations were made for close spaced pattern drilling of the ironstone to determine the existence and continuity of a high grade zone. The ironstone was not closed off down plunge by Newmont's drilling, and had a strike extent in excess of 200m.

Modelling of the residual magnetics resulted in the recognition of a small magnetic anomaly located approximately 300m to the north of Vivid, at a depth of 235m vertical.

Normandy Tennant Creek (1991 - 2002) - Normandy Tennant Creek (NTC) explored the Licence Area under EL 5066 (containing the Vivid Prospect) which expired and then continued under EL 7451 which was granted to NTC in its place, thus enabling continuation of exploration of the Vivid Prospect and surrounds.

A reassessment of the potential of the Vivid prospect was undertaken to determine if the system was capable of hosting a significant tonnage of mineralisation. It was determined that the maximum target size in the ironstone was 80,000t at between 10 – 15 g/t Au. The review involved detailed re-logging of the Newmont diamond core, and reinterpretation of the magnetics in conjunction with L.Farrar. This work concluded that the ironstone system was probably smaller than originally thought (2Mt), due to non-distinction between chlorite-magnetite alteration and chlorite-rich sediments. A factor of magnetic remanence also complicated the interpretation and enhanced the magnetic anomaly relative to the size of the ironstone. It was also felt that the 40m spaced drill sections were too broad to provide an accurate assessment of mineralisation.

A further four RC/Diamond drillholes were completed into the ironstone in 1991, infilling the 40m sections in the upper (eastern) part of the body to 20m spacings. Drillholes VIVD-010 to 013 were completed in 1991. Holes VIVD-010 and VIVD-013 failed to lift and passed beneath the ironstone, intersecting altered sediments only. Holes VIVD-011 and
VIVD-012 intersected the body, encountering 60m and 40m (downhole) of ironstone and alteration respectively.

These holes returned mildly encouraging assay results:

VIVD-010: 
1m @ 2.34% Cu from 178m downhole 
1m @ 1.00 g/t Au from 181m downhole 
2m @ 2.75% Cu from 216m downhole

VIVD-011: 
1m @ 0.91 g/t Au from 167m downhole 
1m @ 2.86% Cu from 208m downhole

VIVD-012: 
1m @ 1.31% Cu from 209.15m downhole 
1m @ 3.00% Cu from 214.50m downhole 
1m @ 1.12% Cu from 227.70m downhole

VIVD-013: 
N.S.R – Au (all < 0.01 ppm), Cu (all < 0.27%)

Several conclusions were drawn from this drilling:

- The ironstone body was significantly smaller than originally interpreted.
- The mineralisation is patchy and discontinuous, with an upper Cu-(Au) zone within the ironstone proper, and a lower Au-(Cu) zone on the 'keel' of the ironstone.
- The tonnage / grade potential for these zones were estimated to be small.

No further drilling of the ironstone has been undertaken since 1991. A conservative 'estimate' of the potential of the gold and copper pods is:

- Lower Au pod: 10060E to 9980E, -230m to –350m vertical depth, open down-plunge to the west of 9980E, and possibly up-plunge to 10100E. Dimensions in the order of 80m x 40m x 5m x 3.5 (SG) = 60,000t @ 5 –7 g/t Au.

- Upper Cu pod: 10060E to 10100E, -150m to –250m vertical depth, open down-plunge to the west of 10060E (intersection of 7.5m @ 3.0% Cu in VIVD-008 on section 9980E, in the same position of the ironstone). Dimensions in the order of 40m x 40m x 10m x 4 (SG) = 60,000t @ 2.5% Cu. (Possibly up to 180,000t if strike extended to 9980E).

Exploration work conducted during the first year of tenure included;

Reconnaissance - Several geological field trips were conducted during the reporting year. These reconnaissance trips confirm low-lying nature of the area with very little outcrop identified. No rock chip samples were collected however the project geologist considers
the Licence area to be suitable to conduct shallow geochemical surveying by either soil sampling or shallow vacuum drilling. Regional vacuum drilling has been conducted by Normandy, Tennant Creek on surrounding tenure with variable results. Strong geological control plus correct sample media sampling would enhance the potential to identify subtle geochemical relationships and anomalism.

Data Compilation - Data compilation utilising both paper reports and various digital format databases is nearing completion for the Vivid Prospect within EL 23745. The complete validated database should be available for inclusion within the Second Year Annual Report.

Geophysical Assessment - A review of the aeromagnetic and gravity data within the Licence area and focussed on the Vivid Prospect was completed by Mathew Cooper, of Resource Potentials, Perth, Western Australia during the year. Resource Potentials commented that a 0.3 mgal gravity anomaly, associated with the previously explored Vivid aeromagnetic anomaly, had not been tested. The gravity anomaly lies on the eastern half of the Vivid aeromagnetic anomaly, which has been previously drilled and intersected mineralised ironstone at depth. The gravity anomaly is further enhanced in the first vertical derivative image, with the peak being approximately 40m to the east of previous RAB drilling at GDA 94 408930E, 7857270N.

To estimate the depth, modelling was trialled using density contrasts of 0.5g/cc and 1g/cc. For both cases the model body was an ellipse 100m long striking 65° with a 100m depth extent. At 0.5 g/cc the model body was 120m wide and located at 35m depth, while for 1.0 g/cc the model body was 75m wide at 45m depth. The 1.0 g/cc model appears to be more geologically plausible as the ironstone is not likely to be greater than 100m in width. Figure 3 shows the position of the model with respect to the 1VD gravity image and figure 4 the modelled profile.

Previous RAB drill holes (VIB1-3) targeting the Vivid magnetic anomaly, are collared very close to the position of the modelled body, and did not intersect ironstone within 87m of surface. If the peak of the gravity anomaly is drilled and mineralised ironstone intersected, then some of the smaller residual gravity anomalies may also be of interest.

Reverse Circulation Drill Program - A two hole reverse circulation (VIB014-VIB015) program was planned, budgeted and scheduled to commence in October 2004. Unfortunately, due to rig breakdown this program never commenced. Proposed hole detail is tabulated below.

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Easting (GDA)</th>
<th>Northing (GDA)</th>
<th>Depth (m)</th>
<th>Azimuth (Grid)</th>
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<th>Comments</th>
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<td>VIB014</td>
<td>408720</td>
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<td>Deepen old holes into upper plunge of ore zone</td>
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<tr>
<td>VIB015</td>
<td>408720</td>
<td>7857104</td>
<td>120</td>
<td>North</td>
<td>-60</td>
<td>Deepen old holes into upper plunge of ore zone</td>
</tr>
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</table>
Access clearance from the Central Land Council - An addendum to the approved Northern Project Mining Management Plan (MMP) and issued Authorisation 0233-02 outlining the proposed two-hole drill program was submitted by Giants Reef to the Central Land Council (CLC) in September 2004 as per terms and conditions under the Indigenous Land Use Agreement.

The CLC later conducted a land access clearance of the work proposed. The CLC, under instruction from the Traditional Owners conducting the site clearance provided written consent to commence drilling providing no large, mature trees were disturbed.

No in-ground exploration was conducted over the licence during the remainder of its tenement life.

7. REHABILITATION

Exploration within EL 23745 included drilling and rehabilitation was conducted and completed, to the best of the holders knowledge, to Departmental Standards. During the remainder of the term of tenure, exploration was limited to non-invasive reassessment and revaluation of previous exploration work and geophysical surveys, data integration of all previous data into Emmerson Resources Database, and as such, no further rehabilitation was required.

8. CONCLUSIONS

Emmerson’s review of the exploration work conducted over EL 23745, revealed that further exploration work and reassessments of previous exploration needed to be conducted in order to fully assess the potential for economic discoveries.

The discovery of the haematite-magnetite Chariot deposit in 1998 has shown the potential for variations on the classic magnetite ironstone hosted gold +/- copper deposits, where lower order magnetic anomalies, plus gravity methods can define new targets. Discoveries by Giants Reef of mineralisation such as at Malbec West, Marathon and Billy Boy further support this.

Emmerson commenced its aggressive exploration programs in April 2008 which includes, a detailed ground gravity survey of the Tennant Creek Mineral field, including EL 23745, airborne geophysical surveys, and drill testing of targets. With newly captured geophysical data providing greater detail of the exploration potential of Emmerson’s tenure which includes EL 23745, Emmerson consolidated EL 23745 into SEL 26595 to allow for the
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Therefore with reassessments of previous exploration work and the analysis and interpretation of newly captured data to be conducted during the remainder of 2008 and into 2009 all Emmerson Tenure, including EL 23745 remain ‘prospective’.
## 9. EXPENDITURE

Expenditure for the term of the tenure for EL 23745 is as follows:

<table>
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# HARD COPY REPORT META DATA FORM

**REPORT NAME:** EL 23745 VIVID FINAL REPORT 29 JUNE 2004 TO 07 JULY 2008  
**PROSPECT NAMES(s):** VIVID  
**GROUP PROSPECT NAME:**  
**TENEMENT NUMBERS(s):** EL 23745  
**ANNIVERSARY DATE:** 29 JUNE  
**OWNER/JV PARTNERS:** GIANTS REEF EXPLORATION PTY LTD  
**AUTHOR(s):** ADAM WALTERS  
**COMMODITIES:** GOLD, COPPER, LEAD, ZINC, SILVER, BISMUTH  
**MAPS 1:250 000:** TENNANT CREEK SE53-14  
**MAPS 1:100 000:** FLYNN 5759  
**MAPS 1:50 000:**  
**TECTONIC UNIT(s):** TENNANT CREEK INLIER,  
**STRATIGRAPHIC NAME(s):** WARRAMUNGA FORMATION, CAMBRIAN WISO BASIN  
**AMF GENERAL TERMS:**  
**AMF TARGET MINERALS:** GOLD, COPPER, LEAD, ZINC  
**AMF GEOPHYSICAL:** .  
**AMF GEOCHEMICAL:**  
**AMF DRILL SAMPLING:**  
**HISTORIC MINES:**  
**DEPOSITS:**  
**PROSPECTS:**  
**KEYWORDS:** VIVID, EL 23745