FIRST ANNUAL REPORT
13 OCTOBER 2010 – 12 OCTOBER 2011

EXPLORATION LICENCE
27538 MERCURY

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

AUTHOR:
A.WALTERS

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1. SUMMARY

A VRMI assessment of EL 27538 has further highlighted the prospectivity of the licence, as can be seen in figure 7 below, significant VRMI anomalism is located in the majority of the licence. Further exploration of the anomalism has been postponed due to the focus of exploration of VRMI at Red Bluff, but then to the exploration, application and ‘proof of concept’ drilling in regards to HeliTEM.

Emmerson has just completed the first phase of ‘proof of concept’ drilling of HeliTEM targets in the Gecko Area. Drilling has been extremely encouraging with interceptions of high grade copper and intersections of mineralisation present in many of the holes drilled, assays results for approximately half of the drill holes are still pending. This early success gives high encouragement for the success of HeliTEM to identify mineralised systems. A second round of HeliTEM drilling will commence in early November to further support the HeliTEM concept. Should results continue to be encouraging the Emmerson will conduct further rounds of HeliTEM surveys at areas yet to be ranked, but the area covered by EL 27538 would be a prime candidate for the next round of HeliTEM given its structural setting and substantial VRMI anomalism. HeliTEM surveys will be conducted with the aim of identifying mineralised systems for drill testing. Emmerson ranks EL 27538 has highly prospective. Following the application of HeliTEM to EL 27538 then Emmerson will be able to assess the prospectivity of the licence and hence decide on any exploration or surrender plans.
2. INTRODUCTION

Exploration License (EL) 27538 Mercury was applied for by Emmerson Resources Ltd (Emmerson; parent company of Giants Reef Exploration Pty Ltd) to search for Tennant Creek style iron oxide copper-gold deposits and to consolidate the expired EL’s 8280, 8279 and SEL 8665 into one licence for exploration.

The entire licence falls on Aboriginal Freehold land held by the Warumungu Land Trust. An agreement referred to as the EL’s 26787, 27408, 27537 & 27538 Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners and Emmerson in June 2010, this agreement established land access for mineral exploration upon Warumungu Land Trust areas within EL 27538.

This report records the exploration work done on EL 27538 during the first year of tenure from the 13 October 2010 to the 12 October 2011.

3. LOCATION

Exploration Licence 275378 MERCURY, is located between approximately 3km and 15km east of the Tennant Creek Township on the Tennant Creek 1:100 000 scale map sheet (5758).

Access to the Licence area can be gained by following the Peko Road which bisects the eastern portion of the licence area, and from the historical Peko Mine travelling further east via Kia Ora road which bisects the south western portion of the licence, access to other areas of the licence is via a series of unsealed tracks and fence lines, which during and immediately after rain generally become inaccessible.

Figure 1 shows the location of the License with respect to the town of Tennant Creek.
Figure 1: EL 27408 location.

4. TENURE

Tenure details for the Exploration License are as follows:

<table>
<thead>
<tr>
<th>Exploration License</th>
<th>License Holder</th>
<th>Blocks</th>
<th>Area (km²)</th>
<th>Date of Grant</th>
<th>Period of Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 27538 Mercury</td>
<td>Giants Reef Exploration Pty Ltd</td>
<td>12</td>
<td>38.87</td>
<td>13 October 2010</td>
<td>6 years</td>
</tr>
</tbody>
</table>

EL 27538 Mercury is located in Emmerson’s Eastern Project Area (EPA) and consists of Twelve graticular blocks and was granted to Giants Reef on the 13 October 2010 for a period of six years.

The entire licence falls on Aboriginal Freehold land held by the Warumungu Land Trust. An agreement referred to as the EL’s 26787, 27408, 27537 & 27538 Deed for Exploration was signed by the Central Land Council (CLC), Traditional Landowners and Emmerson in June
2010, this agreement established land access for mineral exploration upon Warumungu Land Trust areas within the EPA, including EL 27538.

EL 27538 was formed to consolidate the expired EL’s 8280, 8279 and SEL 8665 into one licence for exploration.

A formal request for inclusion of EL 27538 into the EPA combined annual report will be submitted ASAP.

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 an 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 Tennant Creek 1:100,000 sheet, which covers the area of the license.

The rocks of the Warramunga Formation host most of the ore bodies in the region and underlie the Exploration License.

5.2 Local Geology

The Licence is located in the south eastern region of the Tennant Creek Province. Outcrop within the tenements is limited to scattered outcrops of weathered siltstone, sandstone, conglomerate and greywacke of the Palaeoproterozoic Warramunga Formation.

The remainder of the licence is covered by Quaternary sediments and includes dissected colluvial fan deposits and red soil plains. The Quaternary deposits are assumed to cover Warramunga Formation, which comprise the high magnetic siltstone dominant units. The eastern portion of the licence has numerous quartz and quartz-haematite ironstones are present in the ridges. Lamprophyre has been mapped and was intersected in diamond drill holes at the Pinnacles Mine. Several east striking shears traverse the area. Mineralisation styles are varied and include auriferous quartz veins within a quartz porphyry host (Dolomite and Pup Mines), shear hosted hematite-talc-chlorite ironstone (Pinnacles, Ajax, Fassifern and Southern Star Mines) and massive magnetite-chlorite ironstone (Argo Mine and Explorer 38).

The licence covers the Argo Mine mineral leases. The Argo mine produced 72,311 oz Au @ 8.6g/t and the deposit comprises an elongate lens within a reverse faulted anticline and hematite shale unit. Mineralisation occurs within a magnetite-pyrite core and footwall of massive ironstone.
6. PREVIOUS EXPLORATION

6.1 Targets and Concepts

Exploration within EL 27538 is aimed at discovering typical Tennant Creek style gold deposits or gold-copper deposits within ironstone of the Warramunga Formation, but will also include the search for different styles of mineralisation previously unidentified in Tennant Creek.

This type of deposit is well documented, of which there are many examples in the region, including Warrego, White Devil, Orlando, Gecko and North Star mines, as well as many other smaller mines. These all take the form of ironstone (magnetite and/or haematite) masses with associated chlorotic alteration and bodies of gold and/or copper mineralisation.

The discovery of the non-magnetic, haematite-rich Chariot deposit in 1998 has resulted in a broader exploration model by Giants Reef, which allows for the presence of extensive ore grade mineralisation hosted within primary, non-magnetic (haematite-rich) ironstones. Discoveries by Giants Reef of high grade mineralisation associated with haematite dominant ironstone at Marathon and Billy Boy, although small, are further examples of this style of mineralisation.

The potential for the haematite ironstones to host mineralisation in non magnetic areas essentially opens up the whole Tennant Creek goldfield to new target review. Along with the previously identified magnetic anomalies the Licence areas have the potential to host significant haematite mineralization either as new targets or as mineralisation extensions. At present there are no gravity maps for the Tennant Creek goldfield considered detailed enough to identify non-magnetic, haematitic gravity targets. In the next tenure year the geology of the Licence area will be assessed to decide whether a close spaced, high resolution gravity survey is warranted over the area.

6.2 EL 27538 Mercury

EL 27538 incorporates land previously covered by EL’s 8279, 8280 & SEL 8665 (part only), exploration conducted over this tenure is detailed below;

Emmerson also began modelling of the Susan prospect located within MLC 524. MLC 524 is located within EL 27538.

Susan Prospect

The Susan prospect, located with Emmerson’s EL Application 27538 also had an EPP drafted, on completion primary data was sent to David Inkster for geophysical modelling; David Inkster’s magnetic models were received and produced several discus-shaped bodies that strike east-west and dip 70° towards the north. The main body (Model 4), located directly beneath the Susan mine, has dimensions of 900m long, 200m wide, 500m deep, starting at 300m below the surface. Inkster believes this model represents a broader package of magnetic sediments or
iron-rich chlorite alteration (magnetic moment) that possibly hosts a single or several smaller ironstone bodies. The second main body (Model 10), located below and to the south of the International prospect, has similar proportions to Model 4 except it is only 30m wide. The source of this model is probably similar to Model 4, but less well-developed. Several smaller, discrete bodies have been modelled between the Susan and International structural zones, the main body (Model 1) has dimensions of 350m long, 25m wide and 230m deep. Two moderate-sized bodies are located within a structural zone approximately 400m south of International.

Geological mapping and broader magnetic interpretation indicate that the Susan-International system lies within the southern limb, in the southwest corner of a double-plunging anticline. Inkster’s models are preferred over previous interpretations because they better fit this geological information. Planned drillholes need to be reassessed based on this new interpretation, but will probably consist of an 800m hole (500m diamond tail) to test the Susan model (Model 4) and a 450m hole (250m diamond tail) to test the discrete magnetic anomalies (Model 1).
Brett Adams reviewed the old David Inkster magnetic models and produced several new models of his own. There appears to be an untested TMI anomaly north of the old Susan mine that lies at the intersection of the WNW-trending D1 and NNE-trending D3 structure that can be traced down to Argo, approximately 1.8km to the SSW, refer to figures below;

Figure 3: ASVI tilt interpretation magnetic image (interpreted potential ironstone positions) of the Susan area showing a strong northeast structural control of the SUDD001 TMI magnetic anomaly.
Figure 4: Interpretive Susan cross section showing the drillhole trace of the proposed SUDD001 and the interpreted hematite-magnetite ironstone body that accounts for the TMI magnetic anomaly.

The Susan Prospect can now be tested following the granting of EL 27538.

EL 8279
Australian Development held this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow-up.

In 1982, Peko-Wallsend Operations held the ground with EL 2535. Low level aeromagnetic survey revealed two parallel WNW-ESE trending features. Magnetic anomalies were identified and evaluated over ironstones at Juno East and other areas.

Between 1987 and 1993, Wiluna Gold Pty Ltd explored the area under EL 5304. Exploration was carried out under a joint venture with Asarco Gold and Top End Resources. Exploration was directed towards locating near surface gold deposits having weak to no magnetic signature. A prime near surface target such as the anomalous large chloritic zone that lies beneath the Juno deposit was investigated. Prior to the surrender of the Licence, Asarco completed lag geochemistry, auger soil sampling, 6.6 line km of ground magnetics and vacuum drilling. Only weakly anomalous values were obtained from this work. Wiluna Gold was granted EL7182, which covered a portion of EL 8279, in May 1991, however this was surrendered in May 1995 with no field work being carried out.

In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8279. In 1999, a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas, including EL 8279. The helicopter borne sensor was flown at 30m mean terrain clearance and 100m line spacing.

Following the acquisition of the Licence by Giants Reef a preliminary review of detailed aeromagnetics identified a significant magnetic in the central region of the north west block was undertaken. This magnetic high forms one of a number of anomalies of similar magnitude along a major east-west “magnetic ridge”. A review of previous work undertaken in this area had shown that no geophysical assessment or modelling has been undertaken and previous explorers have considered the magnetic ridge to reflect a sequence of magnetite-bearing sediments within the Warramunga Formation. Whether the individual magnetic highs along this trend relate to ironstone bodies, and are therefore significantly prospective, or are merely the results of sporadic, relatively high concentrations of disseminated magnetite in the sediments, remains to be investigated.

**EL 8280**

Previous exploration and mining history of the Argo leases which form part of the total area of EL 8280 has been presented previous reports.

Australian Development held this area from 1973 to 1976 under EL 96. Aeromagnetic surveys were carried out with several magnetic anomalies selected for ground follow-up.

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Between 1987 and 1993, Wiluna Gold Pty Ltd explored the area under EL 5304. Exploration was carried out under a joint venture with Asarco Gold and Top End Resources. Exploration was directed towards locating near surface gold deposits having weak to no magnetic signature. A prime near surface target such as the anomalous large chloritic zone that lies beneath the Juno deposit was investigated. Prior to the surrender of the Licence, Asarco completed lag geochemistry, auger soil sampling, 6.6 line km of ground magnetics and vacuum drilling. Only weakly anomalous values were obtained from this work. Wiluna Gold was granted EL7182, which covered a portion of EL 8280, in May 1991, however was surrendered in May 1995 with no field work being carried out.

Exploration Licence 8280 was originally applied for in May 1993 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included EL 8280. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including EL 8280.

Following the acquisition of the Licence by Giants Reef in 2001, exploration was aimed at the discovery of IOCG deposits hosted in Warramunga Formation units within the Argo - Peko trend and re-modelling of magnetic data. This work has identified a number of prominent and discrete low amplitude magnetic highs which warranted further investigation. Other work completed by Santexco included data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.

Santexco identified a discrete magnetic anomaly, termed the “South Argo”, at the southern boundary of EL 8280 during a regional geophysical assessment of the Licence. The South Argo anomaly is positioned along a prominent north northwest trending fault that has a clear spatial relationship to the Argo and Juno deposits. Geophysical modelling of this anomaly has determined the depth to top of the main causative magnetic body is at 175m below ground level. This is in contrast to previous modelling by other explorers that estimated a depth of 400m using less detailed aeromagnetic coverage.

Further exploration work included a Vacuum, RAB and RC drilling program was carried out at The Susan and Argo prospects, and whilst this work was restricted to MLC’s within EL 8280, it has demonstrated the potential for extending exploration along strike and into the EL. The area of interest includes a corridor of anomalous geochemistry and or geophysical response, under shallow cover. This area was earmarked for further work including geochemical sampling, ground magnetic surveys and follow up Vacuum, RAB, or RC drilling.
Between 1981 and 1986, GeoPeko explored the Licence area under EL 2535. The focus of exploration was mostly on the Peko, Argo, Juno, Golden Forty and Golden Kangaroo prospects.

From 1984 to 1990, GeoPeko conducted exploration under EL 4536. Drilling at Explorer 26 prospect intersected several significant zones with the highest value at 5m grading 9.3g/t gold. Exploration conducted by GeoPeko included structural mapping.

From 1991 to 1994, Normandy NFM carried out exploration under EL 6343. A total of 1094 vacuum drill holes (4,377m) were drilled. Geochemical sampling, rock chipping (18 samples), soil sampling (22 samples), located several areas warranting following up. Nine RAB holes (540m) tested two ironstones but results were disappointing.

The Exploration Licence was originally applied for in March 1994 by Poseidon Gold Limited (later NTC) to cover a regionally interesting geological and geophysical area. Poseidon’s exploration model was based on locating a non-magnetic gold or gold-copper deposit by geochemistry, rather than by the more established method of drilling magnetic anomalies. In 1998 Normandy carried out a detailed airborne magnetic survey (Nob Line Survey), which included SEL 8665. In 1999 a Normandy proprietary airborne Time Domain Electro Magnetics (TDEM) system was flown over the Nobles Nob and Peko areas including SEL 8665.

Prior to the sale of SEL 8665 Poseidon carried soil sampling programs, however results returned only subtle anomalies. Higher gold values are more common in the sheet wash areas of the Western region of the Licence as opposed the eastern region, which includes more sub-outcrop. In the eastern EL higher values are scattered, but occur mostly in the large areas of sheet wash cover away from the hills and on the saddle between the central and eastern magnetics anomalies. This work demonstrated that there is less than 10% sub-outcrop in the eastern target area, and further follow-up was justified.

Work completed by Giants Reef within the Licence included data compilation, validation and integration of historical hard copy and digital data into the Company’s exploration GIS database. Various ground reconnaissance mapping surveys have also been undertaken.
7. WORK DONE DURING THE REPORTING YEAR

During the reporting term Emmerson focused heavily on exploration based around the application of two new geophysical techniques and technologies;

1. Vector Residual Magnetic Intensity (VRMI)

2. HeliTEM.

Emmerson and contract geophysical consultants, Spinifex Geophysics, further developed a processing technology, Vector Residual Magnetic Intensity (VRMI) aimed at existing magnetic data from Emmerson's Tennant Creek tenure package, figures 5 (pre-VRMI) & 6 (VRMI) represent the success of the VRMI technology. Immediate identification of highly prospective VRMI targets reprioritised Emmerson's target matrix, the Red Bluff Area in Emmerson’s Western Project Area became the No. 1 priority area for exploration activities. Drilling during 2010 at Red Bluff confirmed the VRMI technology with significant intercepts of thick ironstones, although assay results were mixed, the successful ironstone intercepts were evidence to support the development and use of VRMI technology.

Figure 5: Conventional Magnetics
A VRMI assessment of EL 27538 has further highlighted the prospectivity of the licence, as can be seen in figure 7 below, significant VRMI anomalism is located in the majority of the licence. Further exploration of the anomalism has been postponed due to the focus of exploration of VRMI at Red Bluff, but then to the exploration, application and ‘proof of concept’ drilling in regards to HeliTEM.

Heli-TEM is a helicopter mounted system capable of measuring the conductivity of the rocks to significant depth and utilises the world’s most powerful airborne, time-domain electromagnetic system. A breakthrough during late 2010 and early 2011 has been the recognition that drill core from the mineralised portions of Tennant Creeks historic deposits is conductive up to 80 times the background levels. Emmerson has just completed the first phase of ‘proof of concept’ drilling of HeliTEM targets in the Gecko Area. Drilling has been extremely encouraging with interceptions of high grade copper and intersections of mineralisation present in many of the holes drilled, assays results for approximately half of the drill holes are still pending. This early success gives high encouragement for the success of HeliTEM to identify mineralised systems. A second round of HeliTEM drilling will commence in early November to further support the HeliTEM concept. Should results continue to be encouraging the Emmerson will conduct further rounds of HeliTEM surveys at areas yet to be ranked, but the area covered by EL 27538 would be a prime candidate for the next round of HeliTEM given its structural setting and substantial VRMI anomalism.
HeliTEM surveys will be conducted with the aim of identifying mineralised systems for drill testing. Emmerson ranks EL 27538 has highly prospective. Following the application of HeliTEM to EL 27538 then Emmerson will be able to assess the prospectivity of the licence and hence decide on any exploration or surrender plans.

8. **REHABILITATION**

As exploration activities conducted on EL 27538 were desktop based and any field activity was confined to reconnaissance trips and mapping no rehabilitation was required.
9. CONCLUSIONS

A VRMI assessment of EL 27538 has further highlighted the prospectivity of the licence, as can be seen in figure 7 below, significant VRMI anomalism is located in the majority of the licence. Further exploration of the anomalism has been postponed due to the focus of exploration of VRMI at Red Bluff, but then to the exploration, application and ‘proof of concept’ drilling in regards to HeliTEM.

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