MINERAL LEASE C77
GECKO, Explorer 1SW

FINAL REPORT
14 March 1968 – 4 March 2003

LICENSEE:
SANTEXCO PTY LTD
A.B.N. 002 910 296

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SUMMARY

This report records the exploration work carried out on Mineral Lease C77 GECKO, Explorer 1SW during its 35-year term from the 14th March 1968 to the 4th March 2003.

Mineral Lease C77 is located approximately 32km northwest of the Tennant Creek Township. ML C77 has previously been explored and reported with MC C973-C976 & C1077-C1083 and ML C21, C69, C70, C78, C85-C90, C323, C327, C506 & C668 (Gecko), to make up the Gecko Leases of the Occidential Group.

Mineral Lease C77 has been held by a number of companies (Geopeko, Poseidon, Normandy and Santexco) and has had a number of exploration programs conducted over it during its 28-year tenure period. Anomaly 2 was identified from early aeromagnetics, and was defined by drilling. A shaft was sunk in June 1970, from which time it was mined up to March 1981, by Geopeko.

At the completion of mining at Anomaly 2 in 1981, Geopeko considered the Anomaly had been well defined, and required no further exploration. Consequently, no further exploration has been undertaken by later companies over Anomaly 2 within ML C77.

A comprehensive rehabilitation program has been undertaken over the Lease by Normandy in a local program around the Gecko mine, involving major earthworks monitoring, planting, ripping and seeding.

Assessment by Giants Reef of Anomaly 2 in ML C77 noted that no further exploration has been conducted over the Lease since the completion of mining in the early 1980’s. At this time it was concluded by Geopeko that the anomaly has been conclusively defined and mined. For this reason, Giants Reef considered the Lease area as having limited to nil exploration potential.

On surrender ML C77 was subsumed by Giants Reef’s Exploration Licence Application 23183 Junction. Giants Reef intend to review the area and Anomaly 2 when the Application is granted.
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1. Location of Mineral Lease C77
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1. INTRODUCTION

This report records the exploration work carried out on Mineral Lease C77 GECKO, Explorer 1SW during its 35-year term from the 14th March 1968 to the 4th March 2003.

Mineral Lease C77 is located approximately 32km northwest of the Tennant Creek Township. ML C77 has previously been explored and reported with MC C973-C976 & C1077-C1083 and ML C21, C69, C70, C78, C85-C90, C323, C327, C506 & C668 (Gecko), to make up the Gecko Leases of the Occidential Group.

In producing this report, Giants Reef has endeavoured to find as much information as possible to record all the work done on this Mineral Lease over the 35-year period. However, the changes of ownership over that time, together with Giants Reef Exploration's unfamiliarity with the large database acquired as a result of the purchase of Normandy Tennant Creek, means that there may be some unintentional omissions.

2. LOCATION

ML C77 is located approximately 32km northwest of the Tennant Creek Township on the Flynn 1:100,000 scale map sheet (5759).

Access to ML C77 gained via the road to Gecko Mine off the sealed Warrego Road. Gecko Mine and surrounding tenements including ML C77 are located in a range of low hills, surrounded by colluvial fans.

Figure 1 shows the Mineral Lease and surrounding tenements during the final year of tenure.

3. TENURE

Mineral Lease C77 was granted to Geopeko, (an exploration subsidiary of Peko-Wallsend Operations Limited) for a 20-year term on 14th March 1968. ML C77 covered approximately 16 hectares.

The Lease was renewed by Geopeko for a further 5-years, ending 31st December 1993.

All the assets of Peko-Wallsend Operations Limited were fully purchased by Poseidon Gold Limited (Poseidon) in 1991. The assets of Poseidon were subsequently acquired by Normandy Tennant Creek Pty Ltd (NTC) in 1996.

The Lease was then renewed by NTC for a further 20-years, ending 31st December 2013.

In June 2001, Giants Reef Mining Limited (Giants Reef) purchased NTC and all its assets, including ML C77. After the purchase, NTC was re-named Santexco Pty Ltd (Santexco), and is now a wholly-owned subsidiary of Giants Reef Mining Limited.

The Mineral Lease lies within NT Portion 408, Perpetual Pastoral Lease 946, Phillip Creek Station.

Mineral Lease C77 was surrendered by Santexco on the 4th March 2003.
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) give a good introduction to the regional geology and styles of gold-copper mineralisation of the area.

More recently, the regional geology of the Tennant Creek Inlier has been described in the 1:250,000 Tennant Creek geological map and its explanatory notes, published by the Northern Territory Geological Survey in 1999.

4.2 Local Geology

The area of the Gecko Mine including ML C77 is hosted by the Palaeoproterozoic Warramunga Formation metasedimentary succession. The Warramunga Formation is host to virtually all the magnetite-haematite (ironstone-hosted) gold-copper-bismuth mineralisation and ore bodies in the Tennant Creek goldfield. Most of the underlying Lease area is concealed by aeolian sands and Cainozoic cover.

East-west trending fold axes and a well-developed steeply dipping penetrative slaty cleavage are the dominant structural features. Bedding is preserved within the host metasedimentary rocks, but near ironstone occurrences is commonly affected by texturally destructive (chlorite-silica) hydrothermal alteration of variable intensity. Limited primary lithological contrast within the metasediments, dominantly poorly sorted siltstones and fine litharenites, further reduces primary bedding visibility.

Epigenetic ironstone bodies are a major geological feature of the Gecko Mine succession and a local feature in other prospects. The ironstones occur in the variably sheared axes of anticlines with fold wavelengths of 100 to 200 metres. The Gecko Mine occurs on the northern limb of a larger scale, east-west trending anticline. The ironstone bodies are massive to well-banded lenticular bodies composed of quartz-magnetite-haematite, orientated within the axial plane of the anticlines.

5. WORK DONE DURING THE TERM

5.2 Work Completed by Geopeko (1968-1991)

ML C77 is one of a group of tenements surrounding the Gecko mine, located on the southern margin. Figure 2.

The Gecko Mine was the sixth mine to be developed by Peko Wallsend Limited (Geopeko) in the Tennant Creek field. A discrete magnetic anomaly was identified on the BMR 1956 aeromagnetic survey of the Tennant Creek field and named Explorer 1.

Exploration of the tenements surrounding the mine including ML C77 followed a familiar pattern within the Tennant Creek field. Geopeko accurately located aeromagnetic anomalies with a ground magnetic survey and surface diamond drilling was commenced in August 1967. Three mineralised ironstone bodies were located at anomalies 1, 2 and 3.

Mineral Lease C77 was applied for to cover Anomaly 2 (South), the main shaft, workshops and the office.

Shaft sinking in the hanging wall sediments of Anomaly 2 commenced in June 1970 with a 2.4m diameter ventilation shaft, from which 2 level (-120m) was developed to enable diamond drilling to ore block the upper limits of Anomaly 2. The main shaft, situated to the south of Anomaly 2, within ML C77, in the footwall sediments began in June 1974. A second stage sinking with an internal hoist
to a depth of 592m was completed in March 1981. Production from long hole open stoping on Anomaly 2 commenced in 1979.

Figure 3 shows a longitudinal section through Anomaly 2 in ML C77.

In an assessment by Geopeko in June 1988 (Love, R.J) of the exploration potential of the surrounding structures and ironstones lodes of the Gecko deposit, the Anomaly 2 mineralisation was considered to be well defined. Consequently, no further exploration was planned by Geopeko for Anomaly 2 within ML C77.

A full account of all exploration work conducted over ML C77 by Geopeko, can be found in the statement in support of renewal, for June 1988 (R.J. Love, 1988).

5.2 Work Completed by Poseidon (1991-1996)

Following the Poseidon Gold Limited purchase of the Gecko mine and surrounding tenure extensive surface and underground exploration was conducted. The underground program focused on resource expansion using underground drilling as the major tool. No reported onground work was undertaken by Poseidon over ML C77.

5.3 Work Completed by Normandy (1996-2001)

**TDEM Survey**

Normandy’s in-house geophysical department conducted a Moving Loop Time Domain Electro-Magnetic (TDEM) resistivity survey that measures resistivity in the vertical plane. A survey was carried out over the Gecko area to see if the TDEM could identify the mineralised structures present. The resistive zones tended to coincide with zones of shearing and silicification.

**Airborne Magnetics Survey**

Kevron Geophysics Pty Limited flew a large Airborne Magnetics survey in October 1998, which included Mineral Lease C77. The survey specifications were 40m sensor height, 50m line spacing on a north-south line orientation with 7m in line sample spacing. Elevation was recorded every seventh sample for digital terrain modelling. Review of the radiometrics data indicated that the total count anomalism is related to topographic highs.

Review of the data indicated that a greater level of structural detail could be delineated than from the earlier 1984 Geopeko airborne magnetic survey.

**Environmental Audit**

An environmental audit covering all historical disturbances in the Tennant Creek mineral field was undertaken in 1998. The audit located and detailed all occurrences of substantial disturbance including mine workings, tracks, dumps, drillholes, excavations, buildings and rubbish.

**Tenement Prospectivity Review**

A detailed review by Normandy was conducted over the Tennant Creek leases including ML C77. Historical exploration information was compiled and all geophysical, geochemical and geological information was assessed. No further exploration programs were planned by Normandy over the Gecko Leases including ML C77.
A full account of all exploration work conducted over ML C77 by Normandy, can be found in the Annual reports by Normandy for year ending 31st August 1997 (B.A. Clifford, 1997) year ending 25th March 1999 (P. Mouchet, 1999), year ending 25th March 2000 (V. Orton, 2000).


In June 2001, Giants Reef purchased NTC and all its assets, including Mineral Lease C77.

Literature Review

A number of days were spent searching documents and literature belonging to the Santexco tenements including ML C77, purchased from NTC by Giants Reef. Very little literature was located that pertained to direct exploration over the ML C77, other than the shaft sinking and direct mining that was undertaken by Geopeko in the 1970’s. It appears to Giants Reef that no further exploration has been undertaken over the Lease since mining, as there are no anomalies within the Lease that warrant further investigation and follow up.

Reconnaissance

Giants Reef conducted a number of minor reconnaissance trips the Gecko mine and surrounding tenure, including ML C77 to review the state of rehabilitation.

Internal Tenement Review

In September 2002 an internal review of the Giants Reef tenement portfolio and a classification of exploration opportunities included a detailed assessment of all the Santexco tenements purchased from NTC. This assessment included an evaluation of the Gecko Leases, which included Mineral Lease C77.

Assessment by Giants Reef of Anomaly 2 in ML C77 noted that no further exploration has been conducted over the Lease since the completion of mining in the 1980’s. At this time it was concluded by Geopeko that the anomaly has been conclusively defined and mined. For this reason, Giants Reef considered the Lease area as having limited to nil exploration potential.

Lease Surrender

Based on the conclusions of the internal report, combined with Giants Reefs initiative to reduce the amount of tenements held by the company, Mineral Lease C77 was surrendered on the 4th March 2003.

On surrender, ML C77 was subsumed by Giants Reef’s Exploration Licence Application 23183 Junction. Giants Reef intend to review the Lease area and Anomaly 2 when the Application is granted.

6. REHABILITATION

An Environmental Management Plan for Poseidon’s rehabilitation strategies implemented over various areas, including ML C77 was submitted to the Department of Mines and Energy (Fowler, 1993 & 1998).

Environmental rehabilitation of the Gecko mine area was undertaken by Normandy in 1999 with a waste rock characterisation program. Earthworks, monitoring, planting, ripping and seeding was also carried out.

An environmental audit covering all historical disturbances in the Tennant Creek mineral field was undertaken by Normandy in 1998.
7. CONCLUSIONS

Mineral Lease C77 has been held by a number of companies (Geopeko, Poseidon, Normandy and Santexco) and has had a number of exploration programs conducted over it during its 28-year tenure period. Anomaly 2 was identified from early aeromagnetics, and was defined by drilling. A shaft was sunk in June 1970, from which time it was mined up to March 1981, by Geopeko.

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Clifford, B A (1997): Annual Report for Mineral Claims Central 155 to 161, 973 to 976, 1077 to 1083, 1243 to 1244, 1253 and Mining Leases Central 21, 56, 69, 70, 77, 78, 85 to 90, 170 to 175, 323 to 327, 506 and 668 for the Period 1/9/96 to 31/8/97, Tennant Creek district, Northern Territory, Gecko Reporting Group, Volume 1 of 1. Normandy Gold Pty Limited Report to the NTDME 97151.


