PARTIAL RELINQUISHMENT REPORT

EL 23122
KRAKATOA

3 February 2003 to 2 February 2004

EL 10050
MILLIONAIRE’S WELL

6 February 2003 to 5 February 2004

HOME OF BULLION PROJECT

Author
C Rohde March 2004

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Department of Business, Industry, & Resource Development (1)
Central Land Council (1)
Tanami Gold NL - Perth (1)

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1.0 SUMMARY

Tanami Gold NL identified the potential for Palaeoproterozoic gold mineralisation and Neoproterozoic base metal mineralisation in the Home of Bullion region of Central Australia. The Home of Bullion Project lies in Central Australia at the boundary of the Arunta Region and the Southern Georgina Basin approximately 230 kilometres north of Alice Springs (Figure 1).

EL 23122 ‘Krakatoa’ and EL 10050 ‘Millionaire’s Well’ form part of the Home of Bullion Project. Both tenements were granted in February 2003 to Tanami Exploration NL (TENL), a wholly owned subsidiary of Tanami Gold NL (TGNL), a publicly listed company. Voluntary surrenders of 264 blocks for EL 23122 and 3 blocks for EL 10050 were completed after their first year of tenure. This report describes exploration carried out on the surrendered portions of both tenements (Figure 2).

The Neoproterozoic sedimentary sequence of the red beds Tops Member of the Southern Georgina Basin was the target for base metals mineralisation. Exploration consisted of regional reconnaissance including rock chip sampling. A total of 10 samples were taken on the surrendered portions of EL 23122 and none on EL 10050.

No significantly elevated gold or base metal values were returned from the reconnaissance sampling. The discussed areas were recommended for relinquishment based on lithology, lack of previous mineralisation and exploration results.

2.0 INTRODUCTION

EL 23122 and EL 10050 form part of the Home of Bullion Project, which is located approximately 230 kilometres north of Alice Springs (Figure 2).

Access to the project area is via the Stuart Highway, which passes the northwestern part of EL 23122 (Plate 1). Station tracks and the Ghan Railway service track provide further access throughout the project area.

3.0 TENURE

EL 23122 ‘Krakatoa’ and EL 10050 ‘Millionaire’s Well’ were both granted to TENL in February 2003. A voluntary surrender for both tenements was completed after the first year of tenure. Tenement details are shown below in Table 2 and surrendered areas are shown on Figure 2.

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For the purposes of conducting initial reconnaissance exploration, a ‘self clearing’ program was granted by the CLC in April 2003, whereby TENL could conduct a geological appraisal of the tenements and wide-spaced non-systematic (‘grab’) sampling to assess prospectivity. Areas of possible cultural significance recorded within the Aboriginal Areas Protection Authority (AAPA) database were noted and avoided.
4.0 GEOLOGY

The Home of Bullion Project tenements cover parts of the northern Arunta Inlier and the southern margin of the Georgina Basin (Plate 2). The surface geology has been mapped and described by the Northern Territory Geological Survey (NTGS) in the 1:250,000 scale Barrow Creek (SF53-6) sheet and explanatory notes (Haines et al. 1991).

The southern Georgina Basin sedimentary sequence unconformably overlies the Palaeoproterozoic basement. The flat to gently dipping strata forms extensively outcropping tabletop hills (mesas), often with the basement exposed at the base of the hills or in the plains between ranges. The basal sediments in this area are the Neoproterozoic Forster Member of the Central Mount Stuart Formation, locally exposed in unconformable contact with the basement. Further south older Georgina Basin sedimentary units are present beneath this formation. The Forster Member is overlain by a thick sequence of red beds, the Tops Member, which is in turn overlain by a white quartzite, the Adnera Member, which often forms the resistant cap to the hills. The Central Mount Stuart Formation ranges between an estimated thickness of approximately 200m in the northwest and almost 600m in the southeast and are interpreted as deltaic sediments.

Palaeocurrent data and progressive onlap of basin sediments to the northwest indicate that the sediment was predominantly sourced from the northwest and transported towards the southeast (Haines, 1991). The red beds Tops Member was targeted for base metals mineralisation. Early Cambrian sediments of the Octy and Neutral Junction formations locally disconformably overlie the Central Mount Stuart Formation.

5.0 METALLOGENY

Tanami Gold NL identified the potential for gold and base metal mineralisation in the Arunta Inlier basement rocks and base metals mineralisation in the Georgina Basin sedimentary sequence within the Home of Bullion Project area of Central Australia. The Palaeoproterozoic Bullion and Ledan Schists were targeted for epigenetic gold and base metal mineralisation, whilst the Southern Georgina Basin sediments were targeted for stratabound base metal mineralisation and the Tops Member red beds in particular were targeted for stratiform Cu mineralisation.

MODAT occurrences over the interpreted geology of the Home of Bullion area is shown on Plate 2. The historic ‘Home of Bullion’ Cu mine is situated just to the northeast of EL 23122. In addition to copper it is enriched in Pb, Zn, Ag and Au and has the largest recorded production of copper in the Barrow Creek area, with “6100 tonnes of high-grade copper ore mined between 1923 and 1951” (Haines et al., 1991). Other MODAT occurrences in the Home of Bullion Project area have Ta, W and mica as major commodities.

The South Georgina Basin is targeted for stratiform Cu mineralisation and epigenetic stratabound Pb-Zn. Both these styles of mineralisation have been reported in southern Georgina Basin sediments approximately 10 km to the south of EL 23122, near Mount Skinner homestead:

- Cu mineralisation is recognised in a thin horizon of reduced-facies greenish-grey beds within a sequence of outcropping Tops Member red beds. This style of stratiform Cu mineralisation has analogies to the Zambian Copper belt and it was postulated that a continuation of this stratiform style of mineralisation may be present in the Tops Member red beds within the tenement areas.

- Pb-Zn mineralisation and associated carbonate and fluorite alteration capped by a thin limestone bed is recognised at approximately 250m depth in a diamond drillhole near Mt Skinner –
approximately 10 km to the south EL 23122. This style of mineralisation has analogies with stratabound Irish type and Mississippi Valley type base metal mineralisation.

The proposed exploration model for Zambian Copper belt-style base metal mineralisation targeted reduced horizons that formed near the palaeoshoreline towards the top of the red bed sequence, and were also located near to a major fault. It was originally postulated that the contact between magnetically active and inactive areas covered by basin sediments represented the contact between reduced facies sediments and red beds respectively and therefore represented the palaeoshoreline (Jombwe 2003). However, this interpretation assumed a degree of metamorphism that has not been found to occur in the South Georgina Basin. Subsequent interpretation suggested that the magnetic response comes from underlying Arunta basement, the magnetics being more subdued over areas of thicker Georgina Basin cover.

6.0 TENL EXPLORATION

6.1 Reconnaissance

A reconnaissance trip was carried out in June 2003 to assess the local geology.

Approximately 80% of the surrendered tenement area comprises outcropping Neoproterozoic to Palaeozoic Georgina Basin sedimentary sequences. The remaining areas are covered by Cainozoic sediments, predominantly uncemented aeolian sand plains and dunes.

No mineralisation has been discovered by previous explorers in this area.

6.2 Rock Chip Sampling

A total of 10 rock chip samples were collected during the reconnaissance trip from outcropping sections of the Tops Member red beds and across the contact with the overlying reduced Adnera Member sandstones (HBK013-022). Sample locations are shown on Plate 3. Sampling was carried out on two sections in the vicinity of northwest-southeast trending faults, which are interpreted as syn-sedimentary normal listric faults associated with rift formation and forming a potential source for mineralising fluids.

All samples were analysed by Genalysis, using B/AAS for Ag, Cu, Pb and Zn and B/ETA for Au. The detection limit for Cu, Pb and Zn is 1.0 ppm, for Ag 0.1 ppm, for Bi 2.0 ppm and for Au 1.0 ppb. No significant rock chip results were received. Assay results are listed in the Appendix in digital format.

7.0 REFERENCES

AGES, 2003. Annual Geoscience Exploration Seminar, NTGS.


FIGURE 2
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