Combined First Annual and Final Report  
*EL29337*

**For Period Ending 25th September 2013**

Target commodity: Gold  
NT 1:250,000 map series – Tennant Creek SE5314  
NT 1:100,000 map series – Kelly 5658  
NT 1:100,000 map series – Tennant Creek 5758

**Distribution:**

1. DOR Darwin NT  
2. Primary Gold Ltd

Ben Cairns  
September 2013
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1 EXECUTIVE SUMMARY

Exploration license EL29337 lies approximately 17km west of the township of Tennant Creek, approximately 990km south of Darwin along the Stuart Highway. Primary access is via the sealed Stuart Highway and from thence via unsealed station and shire tracks into the tenements from the township of Tennant Creek.

The tenements are interpreted to overlie the Warramunga Province near its western contact with the overlying Wiso Basin. The Warramunga Province plays to host to significant gold mineralisation in the Tennant Creek mineral field.

The Warramunga Formation is a succession of tuffaceous lithic arenite and lithic wacke and siltstone; terrigenous mudstone and argillaceous - banded ironstone ('hematite shale'). 'Tuffaceous' refers to volcaniclastic sandstone of epilastic as distinct from pyroclastic origin. These rocks are poly deformed and show very low to low grade greenschist facies metamorphism.

Partial or complete Bouma Sequences are recognisable and two facies have been mapped (sandstone and siltstone lithofacies) based on the relative proportion of sand to silt sized material and bed thickness. These two facies broadly equate to a more proximal (predominantly middle) and more distal (lower) fan facies of a classic flysch succession respectively.

Gold mineralisation in the Tennant Creek district is dominantly ironstone hosted with only minor occurrences of quartz vein hosted mineralisation. The ironstone mineralisation is closely related to magnetite – hematite bodies within terrigenous metasediments of The Warramunga Formation of the Warramunga Province. They are replacement pipe like bodies, flattened and elongated primarily discordant to bedding and tend to occupy S1 and S2 cleavage planes that are dominantly sub-vertical with and easterly trend. Local, late D2 deformation has resulted in the folding and faulting of the ore bodies. In the oxide zone the ore body is characterized by hematite-goethite-quartz-sericite-clay with only minor remnant magnetite; hypogene ore assemblage is dominated by magnetite (50-80%) - quartz (0-60%) – chlorite (5-40%) +/- minor pyrite, talc, dolomite, muscovite and calcite. Mineralised ironstones are found exclusively within or near iron oxide enriched metasediments of the Warramunga Formation and are probably the source of some of the iron. The ironstones are commonly found within the more argillaceous units of the Warramunga Formation, the mudstones and shales being more readily cleaved than the more arenaceous units and thus more susceptible to magnetite-chlorite alteration. There is also a strong, but not exclusive, stratigraphic association between mineralised ironstones and hematitic shales and quartz feldspar porphyries. Within the ironstones gold is primarily found toward the base and in the footwall ironstone – metasediment contact.

A critical review of exploration completed by previous explorers has failed to identify any potential new or untested targets. The remote location and paucity of outcrop will result in a high exploration cost and in the current climate the project is deemed subordinate to the principle exploration focus and as such the project is recommended for surrender.
During the 2012-2013 exploration year work was limited to desktop reviews of the available state geological data base and publically available company reports from previous explorers. No field work was undertaken.
2 COPYRIGHT

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document has been written by Ben Cairns for submission to the Northern Territory
Department of Resources as part of the tenement reporting requirements as per
Regulation 87 of the Minerals Titles Act.

Any information included in the report that originates from historical reports or other
sources is listed in the “References” section at the end of the document.

Primary Gold Ltd authorises the department to copy and distribute the report and
associated data.

This report may be released to open file as per Regulation 125(3)(a).
Figure 1 - Tenement location map
3 INTRODUCTION

Tenement EL29337 was granted to Primary Minerals NL on 23rd October 2012 for a period of six years.

This report documents the exploration activities conducted from the date of grant of the tenements until its surrender on 25th September 2013.

The tenement is interpreted to lie on the western boundary of the Warramunga Province partially overlapping onto the younger sediments of the Wiso Basin. The Warramunga Province plays host to significant IOCG Tennant Creek style mineralisation within the Tennant Creek Region. Outcrop within the tenement is poor to non-existent, covered predominantly by extensive areas of Cainozoic sheet and dune sands.

4 LOCATION AND ACCESS

Exploration license EL29337 lies approximately 17km west of the township of Tennant Creek, approximately 990km south of Darwin along the Stuart Highway. Primary access is via the sealed Stuart Highway and from thence via unsealed station and shire tracks into the tenements from the township of Tennant Creek. These tracks provide good access for 4WD vehicles during the dry season, however these tracks may become impassable after heavy rain, and therefore access will be restricted during the wet season from November to March.

The tenements surround areas of extensive gold mineralisation associated with the Warramunga Formation in Tennant Creek Region.

Figure 1 shows the location of EL29337 tenement.

5 TENEMENT DETAILS

<table>
<thead>
<tr>
<th>Lease</th>
<th>Area (blocks)</th>
<th>Sq. Km</th>
<th>Applied Date</th>
<th>Grant Date</th>
<th>Expiry Date</th>
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<td>58</td>
<td>194.2</td>
<td>18-Jan-12</td>
<td>23-Oct-12</td>
<td>22-Oct-18</td>
</tr>
</tbody>
</table>

In late February 2013 Hydrotech International purchased 100% of the shares in Primary Minerals NL and changed its name to Primary Gold Ltd (PGO). All tenements were granted in the name of Primary Minerals NL which is now a wholly owned subsidiary of Primary Gold Ltd.

Tenement EL29337 is located on Perpetual Pastoral Leases 1142 and it lies within the Tennant Creek 1:250,000 map sheet and straddles the Tennant Creek and Kelly 1:100,000 map sheets.
6 GEOLOGICAL SETTING

6.1 REGIONAL GEOLOGY

Tenement EL29337 is located within the Palaeoproterozoic rocks of the Tennant Creek Inlier, one of the major mineral provinces of Australia. The Tennant Creek Inlier comprises the Ashburton Province to the north and the Davenport Province to the south separated by the Tennant Creek Province. The Tennant Creek Province comprises a turbiditic flysch sequence, the Warramunga Formation, and is contemporaneous with numerous granite intrusions collectively formed during the Baramundi Orogeny at 1870 – 1800Ma. Extrusive felsic volcanics and volcanoclastics of the Flynn Subgroup are broadly spatially and temporally coincident with the Warramunga Formation in the Tennant Creek Province but do not show signs of Baramundi Deformation and thus determined to be unconformably overlie the Warramunga Formation. There is a transitional, conformable relationship between the Flynn and overlying Tomkinson Creek Subgroups. The entire inlier then underwent a second deformation event prior to the intrusion of ‘late’ granites thought to be contemporaneous with the Strangways Orogeny of the Arunta Province (1845 – 1700Ma). A late deformation is evident in the N-S cleavage in the Warramunga Formation may relate to the Isan Orogeny at ca 1600Ma.

Gold mineralisation in the Tennant Creek district is dominantly ironstone hosted with only minor occurrences of quartz vein hosted mineralisation. The ironstone mineralisation is closely related to magnetite – hematite bodies within terrigenous metasediments of The Warramunga Formation of the Warramunga Province. They are replacement pipe like bodies, flattened and elongated primarily discordant to bedding and tend to occupy S1 and S2 cleavage planes that are dominantly sub-vertical with and easterly trend. Local, late D2 deformation has resulted in the folding and faulting of the ore bodies. In the oxide zone the ore body is characterized by hematite-goethite-quartz-sericite-clay with only minor remnant magnetite; hypogene ore assemblage is dominated by magnetite (50-80%)-quartz (0-60%) – chlorite (5-40%) +/− minor pyrite, talc, dolomite, muscovite and calcite. Mineralised ironstones are found exclusively within or near iron oxide enriched metasediments of the Warramunga Formation and are probably the source of some of the iron. The ironstones are commonly found within the more argillaceous units of the Warramunga Formation, the mudstones and shales being more readily cleaved than the more arenaceous units and thus more susceptible to magnetite-chlorite alteration. There is also a strong, but not exclusive, stratigraphic association between mineralised ironstones and hematitic shales and quartz feldspar porphyries. Within the ironstones gold is primarily found toward the base and in the footwall ironstone – metasediment contact.

The Tennant Creek gold field has produced in excess of 150t gold, 318,000t copper and 14,000t bismuth, 220t selenium and 53t silver from over 130 mines.

Previous workers have defined a set of exploration criteria for working in the Tennant Creek Region:
• E-W orientation dominates with subordinate 070° and 130° orientations.
• Argillaceous metasediments of the Warramunga Formation.
• Proximity to QFP and hematitic shale is favourable.
• Development of S1 / S2 cleavage.
• May be blind at surface (leached barren zone which extends 2-3m below surface)
Figure 2 – Geological provinces of the project area.
6.2 **LOCAL GEOLOGY AND EXPLORATION**

**EL29337**
This tenement is predominantly underlain by sheet and dune sand with scattered colluvial scree. Geological interpretation of the region by the NTGS has interpreted a contact between the Tennant Creek Province and the Wiso Basin to be underlying EL29337. Outcrop within the tenement is poor.

A number of occurrences of mapped colluvial scree appear to be associated with coincident gravity and magnetic anomalies which have been the focus of activity for a number of previous explorers targeting ironstone hosted gold mineralisation. Diamond drilling, including some undertaken in partnership with the NTGS by Territory uranium in 2009, revealed the source of the gravity anomalism to be a previously unidentified ultramafic unit. However, these anomalies for the most part reside just outside of the Primary Minerals tenure.

In general the tenement area has been under more or less continuous tenure since 1972, the principle focus being for Tennant Creek IOCG style gold mineralisation with some minor Uranium exploration being undertaken as well. The aeromagnetic signature of the ironstones in the area can be subtle and previous workers have targeted weak features in the regional geophysics with a combination of ground and detailed aeromagnetic surveys looking for deeper ironstone mineralisation as is seen at the Malbec and Chariot Prospects east of EL29337. The numerous magnetic anomalies identified by previous workers have largely been drill tested using diamond, reverse circulation and RAB drilling and the anomalies have been largely explained by these programs as weakly magnetic sediments of the Warramunga Province with no ironstone present. Only 1 of these, P9 identified by the Newmont / Australia Development J.V. identified ironstone mineralisation but it was thought to be too small to warrant further follow up. Unfortunately, Anomaly P9 is not in the NTGS Strike Dataset although from descriptions given by previous workers it would appear that it is outside of EL29337.
Figure 3– General geology of EL29337- NTGS 1:2.5M Province mapping

Figure 4– General geology of EL29337- NTGS Mapping Tennant Creek 1:250,000 sheet
7 EXPLORATION ACTIVITY YEAR ENDING 22ND OCTOBER 2013

There has been no on ground exploration activity competed on tenement EL29337 in the current reporting period. Work has been limited to desktop reviews and data compilation using available NTGS data sets. These data sets have proved invaluable in the first pass evaluation of the tenements and when cross referenced with abstracts from Annual Technical Reports written by previous operators in the MEX system it has allowed rapid evaluation of the project with limited expenditure.

8 RECOMMENDATIONS AND CONCLUSIONS

On the basis of the desktop reviews completed during the reporting period and given the generally negative conclusions of previous explorers and no obvious geological anomalism / targets in the available data it is recommended that this tenement be relinquished prior to the first anniversary of grant. This report being both the First Annual and Final Surrender report for the project and the tenements were surrendered on the 25th of September 2013.

9 REFERENCES

