

# **Annual and Final Report**

## **EL 30/2006 Golconda**

### **2016/2017**



**Authors: John Pemberton and Ken Morrison**

**Date: April 2017**

**Distribution: Tamar Gold Ltd  
Mineral Resources Tasmania**

## **Abstract**

Tamar Gold Ltd underwent a change of management in late 2012 and after a review of the ground held a decision was made to only explore areas that were prospective for the Intrusive-related Gold System (IRGS) style of mineralisation. The area covered by EL 30/2006 is regarded as having all the characteristics required to be prospective for IRGS mineralisation.

The aim of the exploration at Potoroo during 2013/2014 and 2014/2015 was to demonstrate a type deposit of the IRGS style with the potential to be an example of the source rock for much of the detrital gold previously mined at Lisle-Golconda. In 2016/2017 Tamar Gold drilled three more 100m RC holes at Potoroo to test the magnetic model and dip of the mineralisation. Results confirmed the modelling and dip with typical Potoroo grades of around 0.5gm of gold.

Drilling results have established that the Panama Valley contains IRGS style gold mineralisation at the Potoroo prospect and an analogous sub cropping magnetic granodiorite northeast of the Panama abandoned underground quartz vein workings, remains untested by modern exploration. Further similar targets potentially exist in an arc to the east of Potoroo. The Tobacco Creek – Cradle Creek with proven anomalous surface gold and old workings remains untested by a drill hole.

Tamer Gold has decided to not renew this licence despite being encouraged by the work done at Potoroo and the potential for further IRGS style deposits in the area.

| <b>Contents</b>  | <b>pg</b> |
|--|-----------|
| Introduction   | 5         |
| Exploration objective  | 5         |
| Geological setting   | 5         |
| Tenement information   | 5         |
| Location   | 5         |
| Tenure   | 5         |
| Review of previous work                                      | 9         |
| Exploration completed during the report period               | 10        |
| Environment  | 14        |
| Expenditure  | 14        |
| References   | 15        |
| Appendices<br>(see digital data)                             |           |
| Appendix 1<br>Down hole lithological logs                    |           |
| Appendix 2<br>Downhole geochemistry                          |           |
| Appendix 3<br>Geochemistry Quality Assurance/Quality Control |           |
| Appendix 4<br>Drill surface point locations                  |           |
| Appendix 5<br>Downhole directional surveys                   |           |
| Appendix 6<br>Word Core log                                  |           |
| Appendix 7<br>File List                                      |           |
| Appendix 8<br>Downhole surveys                               |           |

| <b>List of Figures</b> |                         | pg |
|------------------------|-------------------------|----|
| Figure 1.              | EL 30/2006 Golconda.    | 6  |
| Figure 2.              | Land Tenure (from MRT). | 7  |
| Figure 3.              | Geology.                | 11 |
| Figure 4.              | Bi Soil anomaly.        | 11 |
| Figure 5.              | Strike section.         | 12 |

## **Introduction**

### **Exploration objective**

Tamar Gold Ltd underwent a change of management in late 2012 and after a review of the ground held a decision was made to only retain areas that were prospective for the Intrusive-related Gold System (IRGS) style of mineralisation (see Pemberton and Morrison, 2013).

### **Geological setting**

(see Morrison and Pemberton, 2015)

### **Tenement information**

|                    |                          |
|--------------------|--------------------------|
| Tenement number:   | EL 30/2006               |
| Tenement name:     | Golconda                 |
| Tenement location: | North East Tasmania      |
| Reporting period:  | 12/06/2016 to 12/06/2017 |
| Tenement Holder:   | Tamar Gold Ltd.          |
| Tenement Area:     | 58 sq km                 |

### **Location**

EL 36/2006 is located immediately south of the Lilydale/Scottsdale road approximately 20km west of Scottsdale in North East Tasmania.

### **Tenure**

EL 30/2006 is held by Tamar Gold Ltd after completing a purchase agreement with BCD Resources in January 2013. The licence includes what was previously EL 55/2008 Lone Star Creek, EL 13/2007 Lisle and EL 30/2006 Golconda. The combined licence was established in late March 2014.

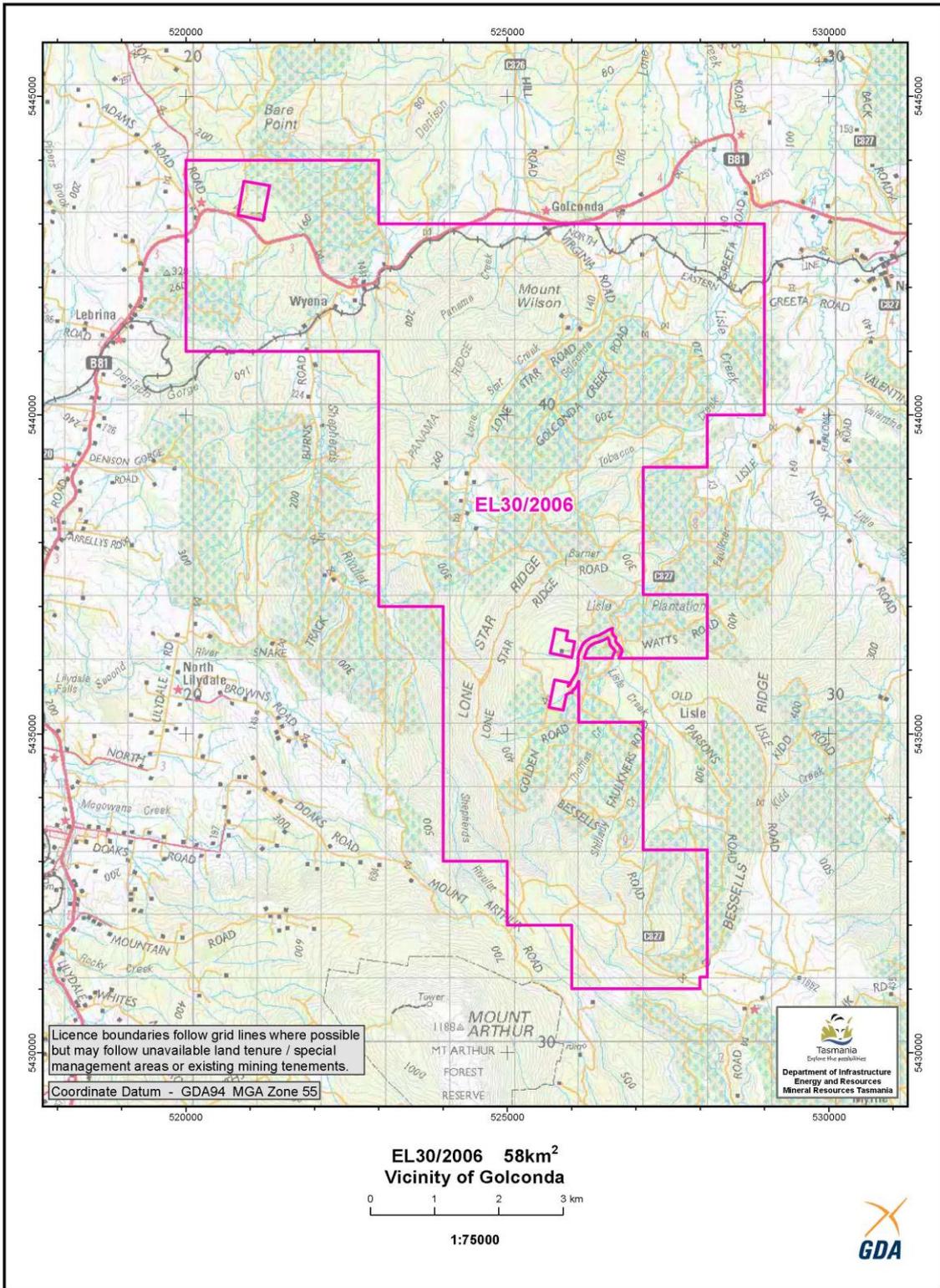


Figure 1. EL 30/2006 Golconda.

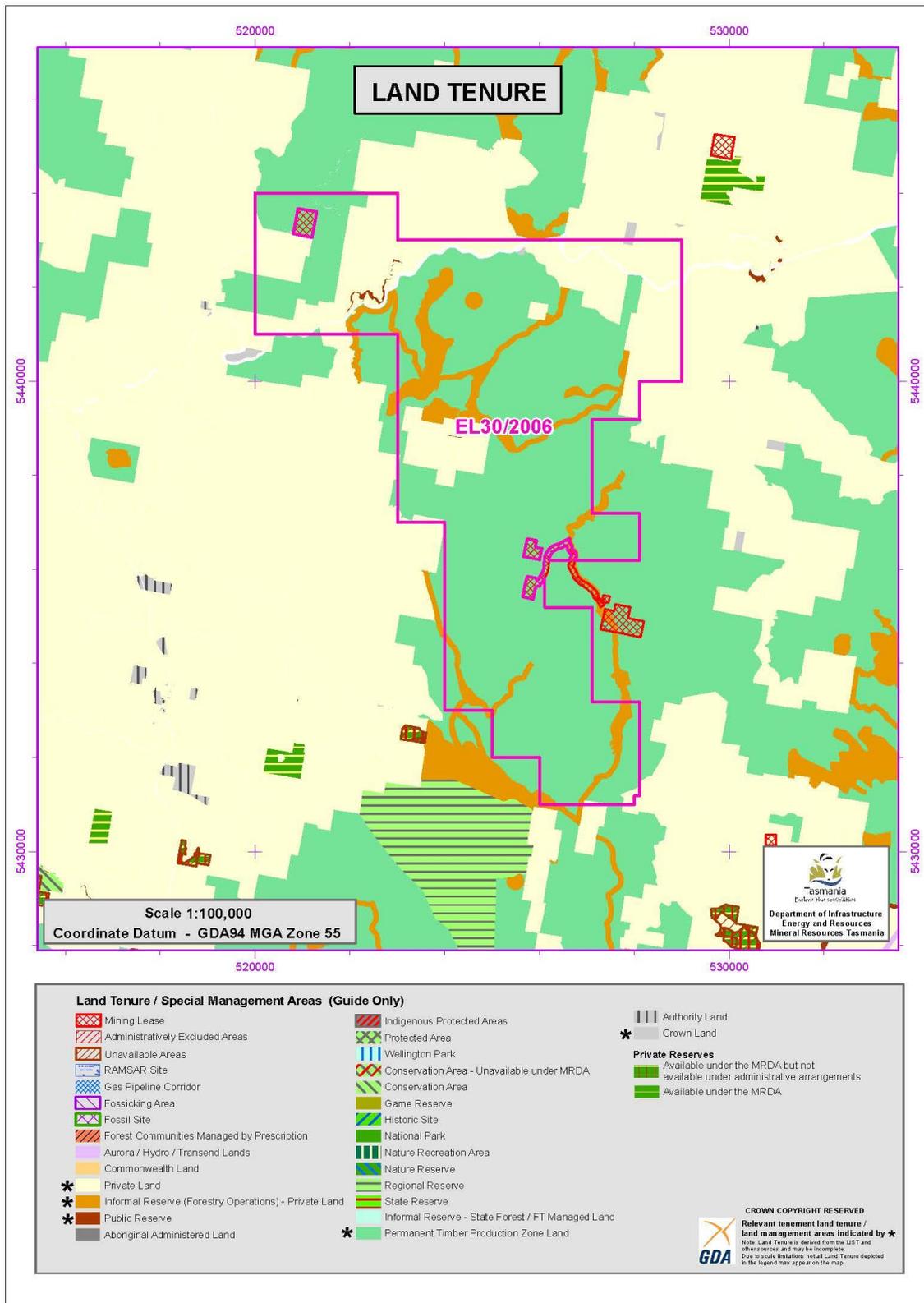


Figure 2. Land Tenure (from MRT).

The land tenure map from MRT shows State Forest with Informal Reserves and some private property at Golconda on the northern boundary and at Lone Star. The State Forest is a mixture of pine and eucalypt plantations and regrowth native forest.

Access is via a network of all-weather gravel forestry roads and exploration vehicle tracks, which all connect to the Lilydale Road, the bitumen road to the city of Launceston, some 40km by road to the southwest, or to Scottsdale, 10km to east.

## Review of previous work

In the modern era from 1992 to 2007 various incarnations of MacMin NL (Tasmin Pty Ltd, TasEx Resources Ltd, TasGold Ltd, Frontier Resources Ltd) held EL 2/92 which covered the larger Lisle-Golconda area (see literature review in Pemberton and Morrison, 2013).

Regional soil sampling, structural interpretation, trenching, percussion and diamond drilling were conducted during that period. Four main areas of prospectivity were identified in the area covered by EL 30/2006 - Enterprise, Gold Crest, Potoroo and Panama.

In the 2013-2014 Tamar Gold Annual Report on EL 55/2008 (see Pemberton and Morrison, 2013) the following work was presented:

- A literature review.
- A review of IRGS.
- Compilation of mineral deposits from the MRT database.
- Compilation of the prospect scale magnetics and DTMs by Phil Muir.
- Soil and panned concentrate surveys at Cradle Creek Goldfield and the South Lisle Prospect.
- Recompilation of the soil sample results from the work BCD Resources did on EL55/2008.

In the 2014-2015 Tamar Gold Annual Report (see Morrison and Pemberton, 2014) a six hole RC drilling program at Potoroo was reported on and summarised as follows:

*The granodiorite is a fine grained plagioclase, reddish brown biotite, +/- minor hornblende and quartz rock with consistent estimated 0.3-0.5% (locally up to 1%) disseminated fine pyrite and patchy fine sericite alteration. Texturally the fine sulphide appears to be a primary magmatic phase. The rock is consistently magnetic but neither magnetite nor pyrrhotite were confirmed during logging the percussion cuttings. Interpreted thin quartz veins, some with traces of arsenopyrite, and rarely possible bismuthinite, were occasionally encountered and greisen like textures are associated with some intervals carrying sericite alteration. Similar narrow vein intersections also occasionally occur in the Mathinna hornfels. Overall the granodiorite is uniform and due to its texture, sulphide content and magnetic response, it is an unusual intrusion in comparison to observed outcropping Devonian granitic rocks in the Lisle-Golconda district.*

*Broad intervals of geochemically anomalous gold occur in the granodiorite, increasing in tenor from north to south. Patchy background concentrations in the range of 10-100ppb also occur in the hornfels aureole drilled in PTR-2, suggesting that the gold was sourced from the intrusion and fluids mineralised the roof rocks during contact metamorphism. PTR-5 produced the most encouraging intersection; 26m @ 0.94g/t Au from 16m. The PTR-5 intersection correlates with previous holes drilled by Tas Gold/Frontier Resources to indicate a zone of low grade mineralisation along the southern margin of the granodiorite body.*

In 2014/2015 the Ridge Prospect was tested with a line of soil sampling comprising 50 B/C horizon soil samples at 10 metre spacing. The results were disappointing with only one sample (6ppb) scoring above detection level for gold. No further work was recommended.

One additional 100 metre RC percussion hole was drilled at Potoroo. PTR-7 was an infill hole drilled mid way between earlier holes PTR-4 and PTR-5 and it confirmed continuity of the mineralised zone and indicated a probable depth limit to the zone at approximately 50 vertical metres below surface.

A petrography and mineralogy study on mineralised granodiorite drill cuttings was conducted by Garry MacArthur and the Burnie Research Laboratory. Petrographic textures are consistent with the sulphides forming during late stage fractionation of the intrusive magma and the sulphide chemistry demonstrates that arsenopyrite and high arsenic pyrite are the only critical species correlating with gold concentration.

The results are documented in full in the 2015 Annual Report (Morrison and Pemberton, 2015).

No exploration was conducted in the 2015-2016 licence year.

### **Exploration completed during the report period**

Three additional 100 metre angled RC percussion holes (PTR-8, -9 and -10) were drilled at Potoroo. The holes were drilled by Spaulding Drillers using their track mounted G&K 850 rig and the drill pad earthworks were excavated by local contractor Kelly Gerke. Splits of the cyclone samples for every metre were assayed for gold only, by 25g charge fire assay/AAS at ALS Burnie.

Hole locations are shown below on Figures 3 and 4 and in Appendix 4. Digital logs are in Appendix 1, log sheets and chip tray photos are enclosed in Appendix 6 and assays are in Appendix 2.

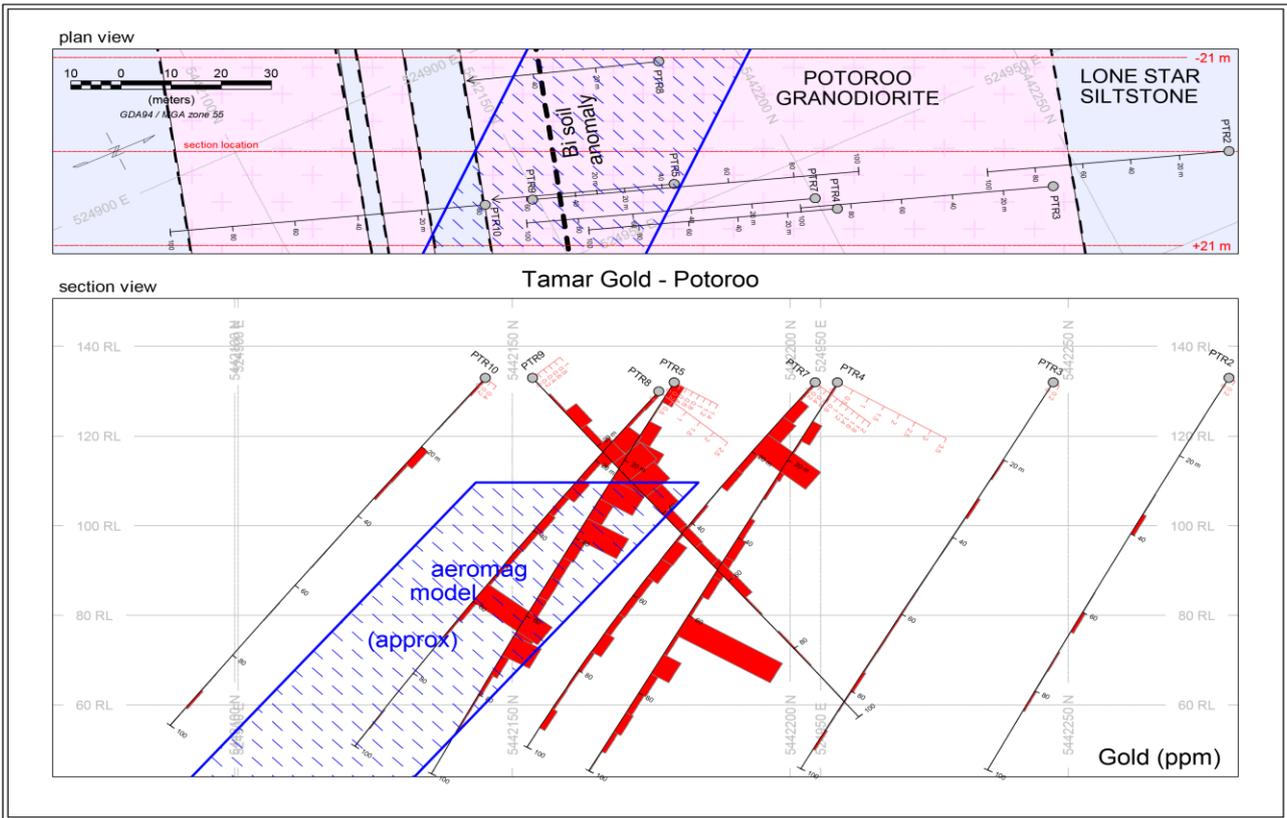


Figure 3. Geology

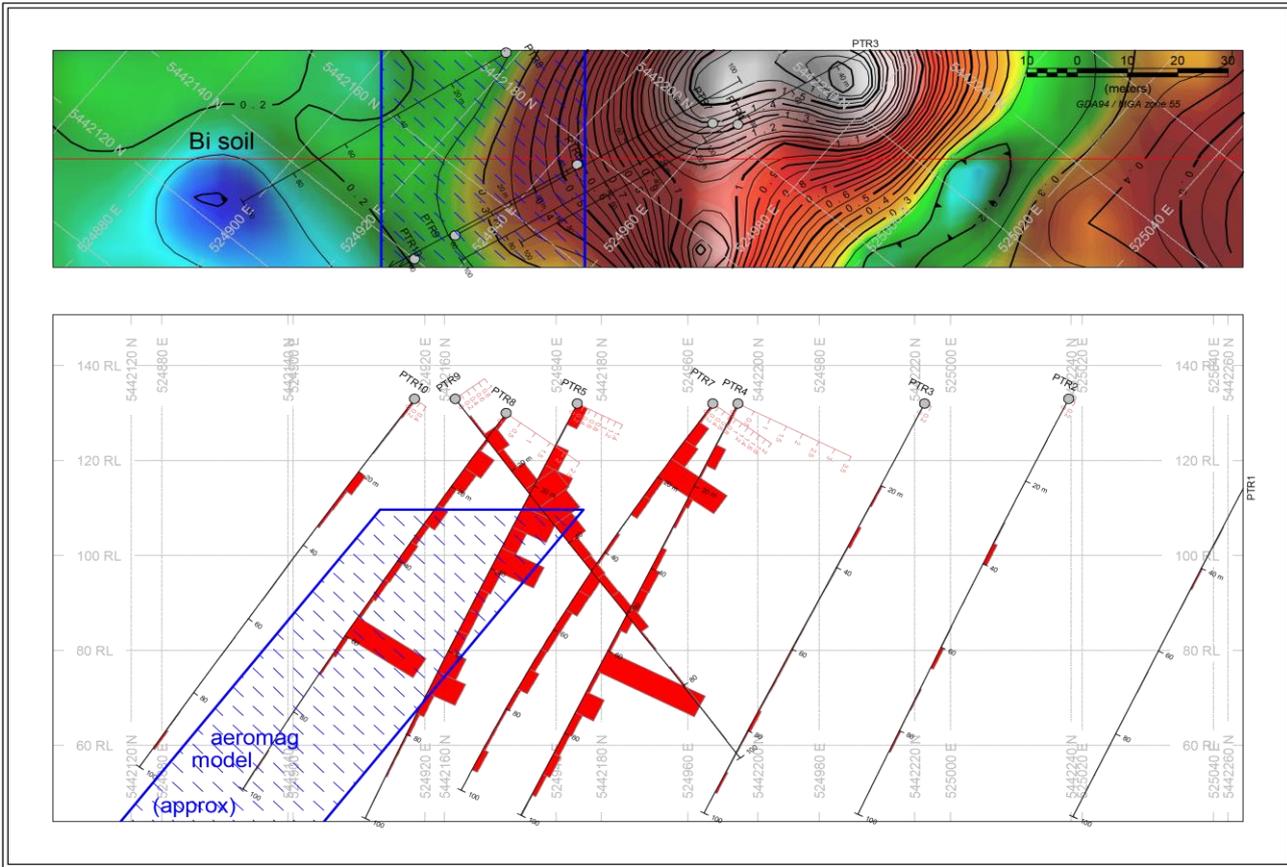
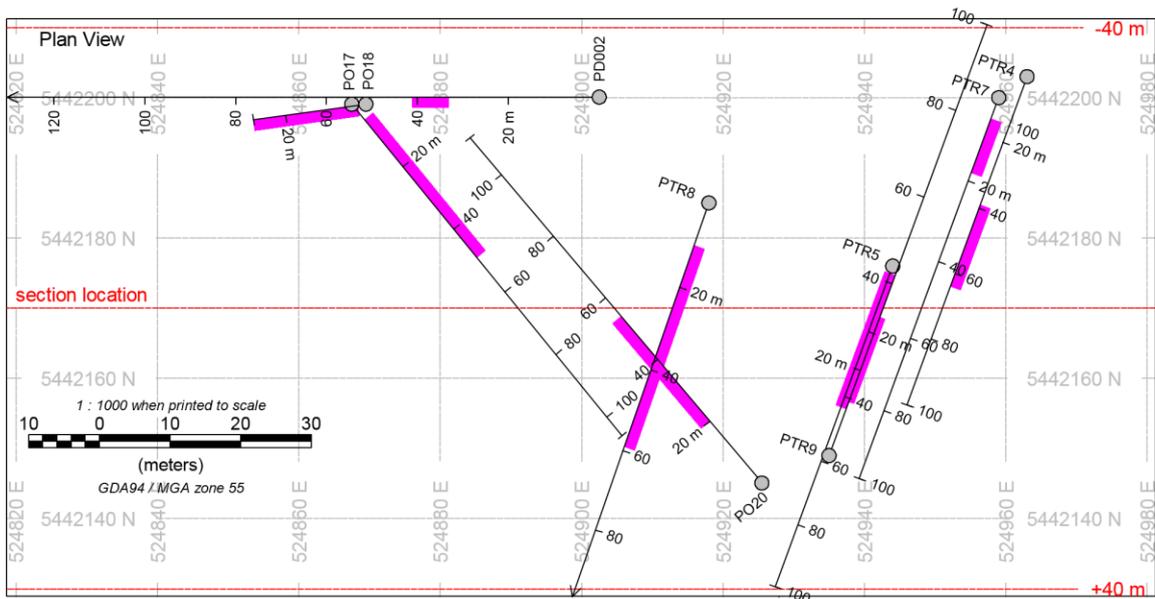
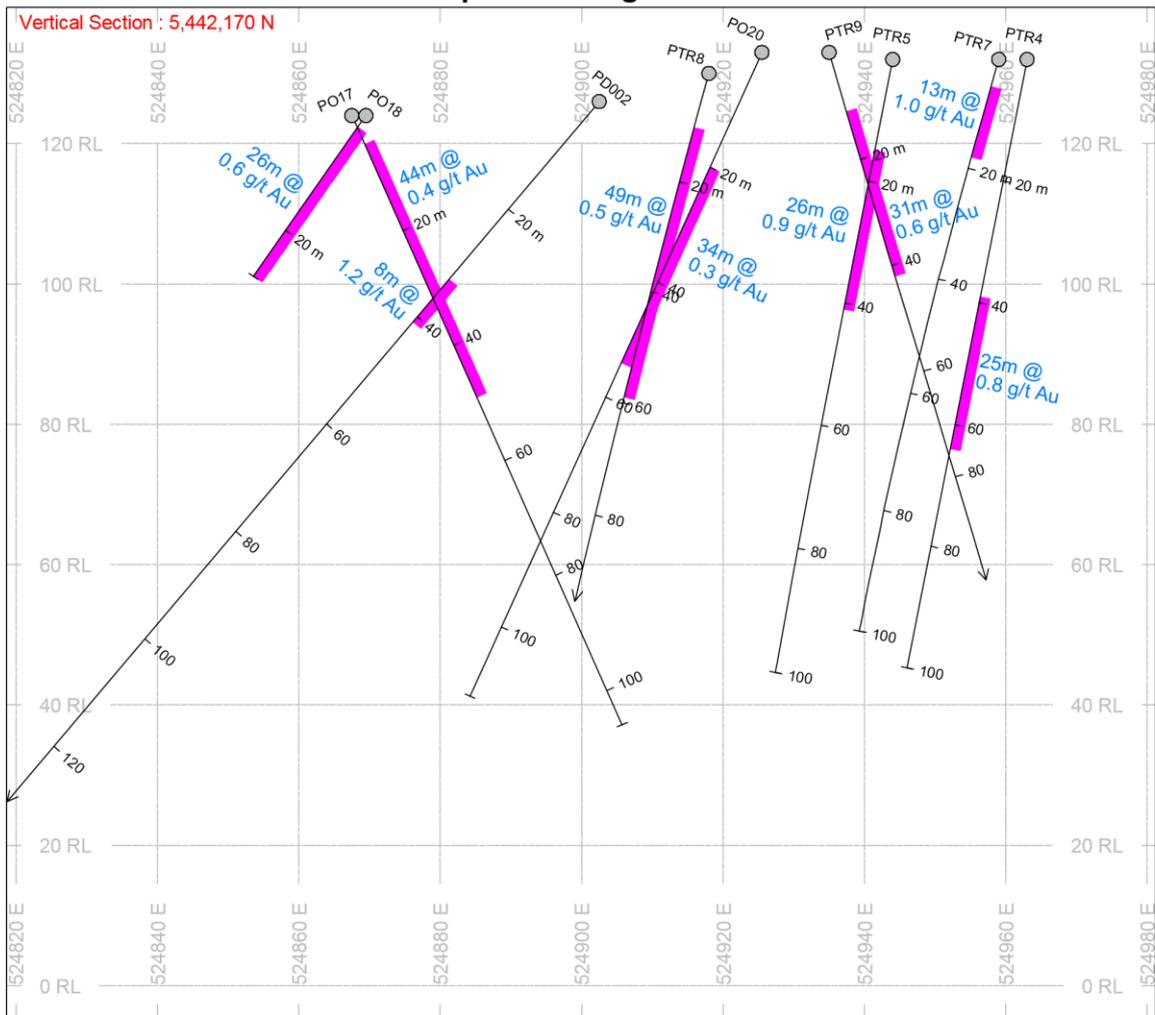


Figure 4. Bi Soil anomaly



**Potoroo Prospect - best gold intersections**



updated 17/12/2016

**Figure 5. Strike section.**

In combination, the three holes were designed to test: mineralisation continuity along strike (PTR-8), whether the mineralised zone dipped to the south, conformable with the modelled magnetic source (PTR-9), and the potential for southerly extension to the mineralisation beyond previous drilling (PTR-10). The results are depicted on the dip and strike sections Figures 3, 4 and 5. PTR-8 intersected a shallow mineralised interval of 49m @ 0.47 g/t gold, which correlates well with previous Tamar Gold and earlier drilling (and confirms continuity of the mineralisation along strike. PTR-9 was drilled on a NNE azimuth and intersected the mineralized zone approximately at the pierce point positions of previous holes PTR-5, -7 and -4, drilled on the same dip section but in the opposite direction. PTR-9 also demonstrated convincing support for a steep SSW dip to the mineralised zone and therefore the previous PTR series drilling was parallel to the mineralisation. The source core to the aeromagnetic high, modelled as a steeply SSW dipping tabular plate by Phil Muir, SMEG, correlates quite well with the mineralised zone, with an offset of about 30 metres in the dip direction. The correlation between mineralisation and the magnetic high is consistent with the magnetic pyrrhotite (and the near absence of magnetite) observed during the drill sample logging.

PTR-10 essentially drilled along the southern contact of the Potoroo granodiorite intrusion, intersecting repeated alternations of hornfels and granodiorite and no significant mineralisation.

The results of this program, combined with results from all previous Tamar Gold and TasGold/Frontier Resources drilling at Potoroo have enabled Tamar Gold to evaluate the potential of the prospect, and of the EL overall, with the following conclusions made by the Company.

### **Conclusions and Future Potential on EL 30/2006**

- Additional drilling and metallurgical investigation is required at Potoroo before a valid JORC compliant resource can be estimated, however sufficient exploration data, derived from drilling and magnetics, exists to predict the geology, size and grade potential of the deposit. The results to date indicate a near surface, granodiorite-hosted deposit with a consistent grade averaging about 0.5 g/t. The deposit extends along strike for approximately 150 metres and dips steeply to the SSW, with a horizontal thickness of approximately 50 metres and a depth cut off at approximately 50 vertical metres below surface. There appears to be a structural control on the location of the deposit in the southern half of the Potoroo intrusion and the apparent abrupt depth cut off suggests the structural control may include an en echelon stack of sub horizontal fractures and veinlets.

In summary, a deposit of approximately 10,000 oz. @ 0.5 g/t appears to be the scope of the Potoroo deposit. The mineralisation style, grade and host geology closely resemble the type IRGS deposits in Alaska, such as Fort Knox with a stated pre-mine resource of about 200MT @ 0.5 g/t Au). Potoroo is clearly way too small to support

a standalone mine and Tamar Gold conclude that no further exploration expenditure is justified on both Potoroo and the entire EL, given that it is now 10 years old.

- The upside potential on EL 30/2006 is that two greenfields prospects remain untested. The magnetic granodiorite north of the old Panama underground workings is much larger than the Potoroo granodiorite and is untested for Potoroo style mineralisation, despite being surrounded by numerous old prospector diggings. In the Cradle Creek area, the sandstone strike ridge separating Cradle Creek from Tobacco Creek generated a surface gold anomaly from Tamar Gold soil, rock chip and stream sediment geochemistry, with no follow up work to date. In combination with Potoroo, these two prospects have potential to define a viable resource if further successful exploration is undertaken.

## **Environment**

The report on the rehabilitation of the three drill holes follows below. Collar locality data is in Appendix 4. Three 100 metre angled RC percussion holes (PTR-8, -9 and -10) were drilled at Potoroo. The holes were drilled by Spaulding Drillers using their track mounted G&K 850 rig and the drill pad earthworks were excavated by local contractor Kelly Gerke.

The three RC drill holes were sited on previously disturbed. On completion, the PVC collars were pushed below ground surface by the rig mast. The PVC was then blocked off by rocks, wood and paper. Finally, an expanding foam cap was sprayed in and then covered by more rocks and soil. The samples were used to backfill the drill holes prior to capping and excess was spread around the drill site. All sample bags were removed from the drill sites and disposed of at a recognised tip site. A recent site inspection by Tamar Gold Ltd and MRT had trouble locating the collars. The photographs of the rehabilitation have been held up by a technical problem and will be forwarded to MRT by the rehabilitation contractor.

## **Expenditure**

Expenditure to June 2017 is estimated to be \$38 000.

## References

Morrison, K.C. and Pemberton, J. 2014. Annual Report EL 30/2006 Golconda Tamar Gold Ltd June 2014. *Unpublished Annual Report, Mineral Resources Tasmania.*

Morrison, K.C. and Pemberton, J. 2015. Annual Report EL 30/2006 Golconda Tamar Gold Ltd June 2015. *Unpublished Annual Report, Mineral Resource Tasmania.*

Pemberton, J. and Morrison, K.C. 2013. Annual Report EL 55/2008 Lone Star Creek Tamar Gold Ltd May 2013. *Unpublished Annual Report, Mineral Resources Tasmania.*