



EXPLORATION LICENCE  
EL66/2007  
GLADSTONE, NORTH EAST TASMANIA

ANNUAL REPORT  
FOR THE YEAR ENDED  
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## 1 EXECUTIVE SUMMARY

EL66/07 forms part of Macquarie Harbour Mining Limited's (MHML) North East Tasmanian Project. Adjoining tenements EL2/2007 and EL3/2007 comprise the company's remaining licences in the Gladstone area. The commodities sought on EL66/2007 are gold and tin.

Work conducted in the first year of tenure consisted of literature research and database compilation, sampling of old workings, examination and sampling of old drill core, and soil geochemistry using a Niton XRF Analyser. Most of the field work took place immediately to the south of Gladstone along Fly by Night Creek where the main concentration of historical gold and tin workings occurs.

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*Note: All coordinates in this report are AGD66*

## 2 INTRODUCTION

This is the first annual report on EL66/2007 which is held in the name of Goldstock Mining Pty Ltd, a wholly owned subsidiary of Macquarie Harbour Mining ("MHM"). The tenement (see Fig.1) covers an area of 11 sq km and is bounded to the east and south by MHM's EL2/2007 and EL3/2007. There is also a common boundary with ML15M/2004 held by Van Dieman Mines Pty Ltd. which excises part of the tenement on its northern limb. Gladstone lies in the southern part of the licence.

Much of the land tenure is designated as "Regional Reserve" or "Proposed Regional Reserve" which are regarded as 'Special Management Areas' and require specific environmental conditions to be met in the course of exploration. The field work carried out by MHM was of minimal impact with no vehicles taken off existing roads or tracks and traverses on foot not requiring any clearing to be undertaken. Access into the licence is facilitated by the main roads which lead into Gladstone from Bridport, South Mt Cameron, Musselroe, and Cape Portland.

Surface geology (see Fig.2) comprises Quaternary stream, marsh and marine terrace deposits as well as Tertiary gravel, sand, silt and clay deposits in the north; Mathinna Beds in the central portion and mainly granite in the south of EL66/2007.

The Mathinna Group in the Gladstone area have been intruded by granitoids in three main phases. The oldest granitoid is a hornblende-biotite granodiorite forming the northern part of the Gardens pluton. This has been intruded by adamellite of the Poimena pluton, which in turn has been intruded immediately to the east and south of the town by granitoid described as granite/adamellite. This body contains cassiterite-bearing greisens which are found within EL66/2007. The Mathinna Beds have been thermally metamorphosed with resulting aureoles at Gladstone about 2 km wide.

Gold-bearing quartz veins occur in a zone trending NNE from Gladstone, the most southerly occurring in Fly by Night Creek close to the contact with the Poimena pluton and extending through Coarse Gold Creek northerly to Popes before passing into adjoining EL2/2007. They strike in a north westerly direction and are normally steeply dipping.

### 3 REVIEW OF PREVIOUS MINING AND EXPLORATION

#### Introduction

EL66/2007 has a history of both gold and tin mining, commencing around 1880 with the discovery of the Royal Tasman gold reef and "Fly by Night" tin deposit immediately south of Gladstone. By 1883 production of gold (from several reefs) had dwindled but further prospecting work was carried out in 1909, 1916 and 1931. Approximately 55kg of gold was produced of which more than 51kg came from Royal Tasman No.1 and No.2.

The main gold-bearing reefs are orientated in a NW-SE direction and lie parallel to the course of Fly by Night Creek, the Royal Mint on its southern side and Fleming's, Royal Tasman No.1, Royal Tasman No.2 (North Tasman) and Royal Standard to the north. Coarse Gold Creek is another parallel reef north of the township. Another gold deposit of interest known as Popes Prospect lies 3km to the north of Gladstone. The reefs to the south of Gladstone lie close to the granite contact and are known to contain small amounts of cassiterite.

The primary sources of the tin mineralisation in the district are cassiterite bearing greisenised granites confined to irregularities in the upper contact of younger muscovite-biotite granite with an older granite or sediment.

One such greisen, the Fly by Night tin mine is located 700m to the south east of the Royal Tasman workings. There are also several old Chinese alluvial tin workings in a subsidiary of Mt Cameron Creek to the west.

#### Gold Mining and Exploration

Twelvetrees (1916) describes in detail the mines of the Gladstone district. He refers to the three main line of reefs, the Royal Standard, Royal Tasman and Royal Mint as being in full swing in 1881 and 1882, with at least two batteries operating with very high assay returns obtained from the Royal Tasman No. 1 with average head grades in excess of 1oz/tonne. Grades dropped off at depth because much of the gold was contained in pyrite and unable to be effectively recovered. Twelvetrees states that "the characteristics of the reefing belt may be summed up shortly and in a general way by saying that the occurrences comprise numerous shoots of gold-bearing stone, frequently with high values; but that, on the whole the pay streaks are short. The shortness of the shoots may possibly be compensated for by their frequency."

A summary of each of the main gold reefs in the Fly by Night area is shown below:

North Tasman (584 700m E, 5464 450m N) 1.8m wide, 14g/t Au, max. depth worked 33m, outcropping strike length of 40m. Workings consist of a vertical shaft to 33m with levels at 11m, 20m and 33m (the latter being an adit which runs approximately northwards from Fly by Night Creek for more than 100m). Stopping occurred along lengths of 18-24m down to the 20m level. The higher grades are found in fine grained "marble-like" quartz, sometimes with limonitic fractures; Anglo-Australian (1996) returned assays from three mullock samples of 82.5g/t Au, 16.6g/t Au and 28.2g/t Au. The reef appears to be cut off by faulting at 30m and thrown to the north by 3.6m, having a dip of 60-70 degrees west. It has been suggested that the North Tasman Reef may be a faulted extension of the Royal Tasman but Nye (1932) felt this to be unlikely.

Royal Tasman No.1 (584 750m E, 5464 680m N) 0.6m wide, 17.3g/t Au, vertical, max. depth worked 22m, outcropping strike length of 73m. Workings consist of stoping to 76m to the 9m level and for 45m above the 22 level. Grades at surface were up to 612g/t Au falling at depth to 4.5g/t Au but as the returns did not include the gold content of the sulphides this may not have been so great. Thureau (1881) suggested that the old workings may not have located offset portions of the reef. Drilling of two diamond holes (46m and 47m) underneath the Tasman No.1 workings by Anglo Australian (1996) intersected the main reef at about 40m and a second zone of quartz veining at a shallower depth. Only some portions of the core were analysed but assays in all cases were below 0.05g/t Au.

Royal Mint (584 680m E, 5464 580m N) 1.2m wide in places much narrower in others, max. depth 20m, length unknown but possibly >250m if satellite workings (faulted offsets?) included, two cross veins 27m apart cut the reef, one being 0.45m thick and vertical. Both of these appear to have contained payable gold. Worked by the Royal Mint G.M. Co. 1881-83, Dreadnought G.M. Co. 1909 and Victory G.M. Co. 1931.

Royal Standard (584 750m E, 5464 900m N) Width varies from 0.9m to 6.7m but averages about 4.5m, length 300m, dip steep northerly?, max depth 30m. Visible gold with accessory cassiterite, arsenopyrite and chalcopyrite. The so-called "Wolfram Lode" crosscuts the reef near its northern end and contains cassiterite, wolfram and minor gold. Royal Standard was worked in the 1880's and 1930's. Nye (1932) refers to the possibility of faulting displacing the high grade surface portion of the reef at depth.

A number of other smaller reefs were opened up but many were abandoned at the prospecting stage because they did not appear to contain any appreciable quantity of gold. It is worthwhile however mentioning Fleming's Reef immediately south of Royal Tasman, which has coarse arsenopyrite associated with gold and silver. Nye (1932) states that high assays from Fleming's (>20oz/tonne) indicate that although no free gold is visible arsenopyrite is probably not the principal source. Tests from two samples proved that practically all could be extracted with mercury and all of it is soluble in a cyanide solution.

Recent exploration for gold has comprised two programmes; one by Santos Ltd. (1981-83) and the other by Anglo Australian Resources NL (1995-96).

The Santos work included geological mapping and geochemical sampling at 50m intervals using a hand auger. Of 208 samples assayed, 16 returned significant (>0.3g/t Au) values including six samples in the range 2.5 -5.6g/t. These anomalous samples are clustered adjacent to a granite-sediment interface south of the main workings. Follow-up work involved a programme of infill geochemical sampling, geological mapping and trenching.

The trenching comprised three long (100m +) trenches across the trend of the old workings as well as three shorter (approx. 50m) trenches to investigate isolated high soil gold anomalies.

Trench 1 (length 280m) Located to cut the Royal Standard and North Tasman Lodes.

The results were disappointing with the highest gold assay over a 2 metre interval being 0.85g/t Au. This was associated with a zone of close-spaced quartz veining trending 290 degrees and dipping 80 degrees south. Values of 0.18g/t Au and 0.73g/t Au were also

associated with a Tertiary gutter which masked the underlying bedrock. Arsenic, silver, copper, lead and zinc were also very low.

Trench 2 (length 134m) This is located in the area where the Royal Mint workings are shown in the MRT Deposits Database but referred to by Santos as "West Tasman".

Gold assays again "disappointingly low considering the intensity of alteration and quartz veining over a substantial width". Low grade gold (0.05-0.15g/t) over at least 50m. The highest assay recorded was 0.57g/t Au over 2 metres and was associated with a 20cm wide shallow (65 degrees) quartz greisen vein dipping to the SW. Arsenic was anomalous (+500ppm) over a 10m zone 20m west of the line of shafts but there was no direct correlation with gold values. The highest arsenic assay (2250ppm As) was associated with the quartz greisen vein mentioned above.

Trench 3 (length 176m) Located at what Santos refers to as the South Royal Mint but MRT name Birkett's and Moore's Shaft in the Deposits database.

Gold assays low and conclusion drawn that as the main granite – Mathinna Beds contact is approached either laterally or vertically the nature of the gold mineralisation changes from being narrow, higher grade and primarily associated with quartz veins to that of a much lower grade but more disseminated.

Trenches 4, 5 and 6 Located outside the main zones of workings with Trench 4 and 5 near the creek to the west of Fly by Night Creek and Trench 6 south of the Fly by Night tin mine.

Low gold values mainly attributed to Tertiary detrital material.

The main work in the area by Anglo Australian Resources NL consisted of two angled diamond drill holes (94m total) in 1996, both at the Royal Tasman No 1, designed to intersect the reef 15m to 20m below the reported maximum depth of the old workings. A small portable rig was used. In GL1 the main reef was intersected from 38.1m to 40.3m (true width 1.8m) and a second zone of veining from 24.8m to 29.5m. Only the main reef was assayed, returning 1.2m at 0.018 g/t Au and 1.0m at 0.022g/t Au from 39.3m to 40.3m. In GL2 the main reef was intersected from 43.2m to 44.0m (true width 0.65m) and a second zone of quartz veining between 15.5m and 18.5m. Again only the main reef was assayed and 0.08m at 0.022g/t resulted.

Limited mullock sampling from Flemings, Royal Tasman No 1 and North Tasman resulted in the only economic gold grades (82.5g/t, 16.6g/t and 28.2g/t) coming from the North Tasman reef.

### Tin Mining and Exploration

Limited hardrock tin mining has taken place on EL66/2007N. The Fly by Night mine was probably discovered around 1880 and early mining was considered very successful. It may have continued profitably (albeit with limited production) for about 40 years. Two companies, Geopeko (1978-79) and Santos (1981-83), have explored the Fly by Night greisen deposit for its bulk mining potential in recent times.

Geopeko, in an option agreement with Ron Lawry over the Fly by Night mine carried out a programme of gridding, surveying, geological mapping (1:1,000 scale), RC drilling on 50 metre centres (95 holes totalling 536m with average depth of 5.64m and deepest

hole to 15m), percussion drilling (2 holes, one of 14m and other 10m) and a single diamond hole to 24.4m. Based on the results of this work Geopeko calculated a probable reserve of 658,000 tonnes at 290ppm Sn + or – 50ppm and a possible reserve of 2.6 million tonnes at 110 – 316ppm Sn. The company concluded that insufficient tonnage, low cassiterite grade, erratic distribution of the mineralisation, and difficulty in tin recovery meant that the ore body was uneconomic and the agreement was terminated.

In 1981 Santos acquired title to 14 contiguous mining leases and immediately drilled two diamond holes totalling 150.5m. An intersection of 2 metres of 0.89% Sn (DFBN 5) related to quartz fissure veining indicated further work should be undertaken. In 1982 a programme of gridding, geological mapping and geochemical sampling across the leases defined four areas (Harden's Ravine, Fly-by-Night, 400m West of Fly by Night, Enterprise) worthy of follow-up exploration and diamond drilling for tin, but this did not eventuate because emphasis shifted to the gold targets.

Harden's Ravine Two of four samples from a quartz-muscovite greisen body, some 200m wide and of unknown strike extent returned values of 300ppm and 580ppm Sn.

Fly by Night An area of muscovite greisen at least 200m wide and elongated NW-SE returned eight assays in the range 210-460ppm Sn.

400m West of Fly by Night A 250m wide sub-circular feature of +200ppm Sn overlaps greisen developed at a tri-contact between older porphyritic feldspar granite, younger altered granite and altered Mathinna Beds. The situation is complicated by a Tertiary gutter (defined by a 500ppm Sn contour) and shallow eluvial wash.

#### 4 EXPLORATION COMPLETED DURING THE REPORT PERIOD

Initially a literature review was conducted of all relevant information covering EL66/2007. Of particular interest for gold and tin prospectivity are Open File reports by Geopeko Ltd, Santos Ltd, and Anglo Australian Resources N.L available from Mineral Resources Tasmania. A bibliography of the most useful references is found in this report.

A number of field visits were made to the licence during the course of the year. The company acquired a portable Niton XRF Analyser which provided an easy on-site means for collecting "semi-quantitative" data for rock and soil samples. The instrument is limited in that it cannot be used to analyse for gold at the low concentrations required in exploration geochemistry.

##### Gold Exploration

Field work concentrated on the Fly by Night area with several days being spent checking the locations of old gold workings and samples collected from mullock heaps adjacent . It should be mentioned that several mine locations were at variance with the UTM positions quoted by MRT using the same datum (see Table 1 and Figure 3) and others were not able to be located, possibly due to the development of the town subsequent to mining. Quartz at all mullock heaps was predominantly hard, white, and sugary in texture, with some pieces containing a large proportion of muscovite. No mine waste rock showed obvious signs of mineralisation. One sample was collected from each of the mullock dumps. with nine samples in total submitted to ALS for assay. Of these only three exceeded 1g/t (see Table 2); 2.01g/t at North Tasman, 6.97g/t at Royal Standard South, and 6.39g/t approximately 30 metres NW of Royal Tasman No. 2.

A NITON soil geochemical survey was carried out to the north of the Bridport road and west of the town of Gladstone. Shallow soil samples were taken at approximately fifty metre spacings, and although in most parts these were low or below the level of detection, some anomalous base metal values proximal to Gladstone itself. These are thought to be attributable to anthropogenic pollution in the vicinity of the town, but it may be of significance that a NNW trending regional magnetic anomaly corresponds with the topographic ridge on which the town is located.

A second survey at Popes Prospect, 2km NE of Gladstone was conducted along the E-W trending line of a number of shallow (<2m) workings extending over a distance of about 300m but no strong anomalies of any marker element were observed in the surface soil profile. Only three samples showed arsenic values above detection level and these were low tenor and centred on the old workings. This indicates that a sampling regime that tests the deeper soil profile is necessary to gain any useful information of the exploration potential in this area.

Drill core available at Mineral Resources Tasmania core storage facility from Anglo-Australian's 1996 drilling programme (see previous section this report) at Mornington was resampled in its entirety over 1m intervals using MRT facilities. This comprised two angled holes (GL1 and GL2) from Royal Tasman No.1 which had previously only been assayed selectively with poor results. The samples (GL1: NE 1723-1766, GL2: NE 1767-1810) which were analysed by ALS using Method Au-AA25 returned very disappointing results with the highest value being only 0.08ppm from 20-21m in GL1.

### Tin Exploration

Several days were spent mapping around the margins of the granite to the south of Gladstone between Mt Cameron Creek in the west and Star Hill in the east looking for continuations of the greisen seen in Fly by Night Creek and Hardens Ravine. Surface outcrop and float were tested for tin levels using the Niton with the results with the majority of the greisenised material showing a concentration between 150 and 1000ppm with an average of around 300ppm. This is in line with the grade of the reserve defined by Geopeko in 1979. Three samples (NE1817-NE1819) were submitted to ALS for tin analysis (Table 2), one of which (NE1818), from Hardens Ravine contained 8.87% Sn demonstrating the existence of higher grade zones within the greisen.

Based on overall grade the greisen is unlikely to be economic. As there are no direct geochemical or geophysical haloes to help define zones of higher tin concentration an extensive pattern drilling programme would be required to properly test this area.

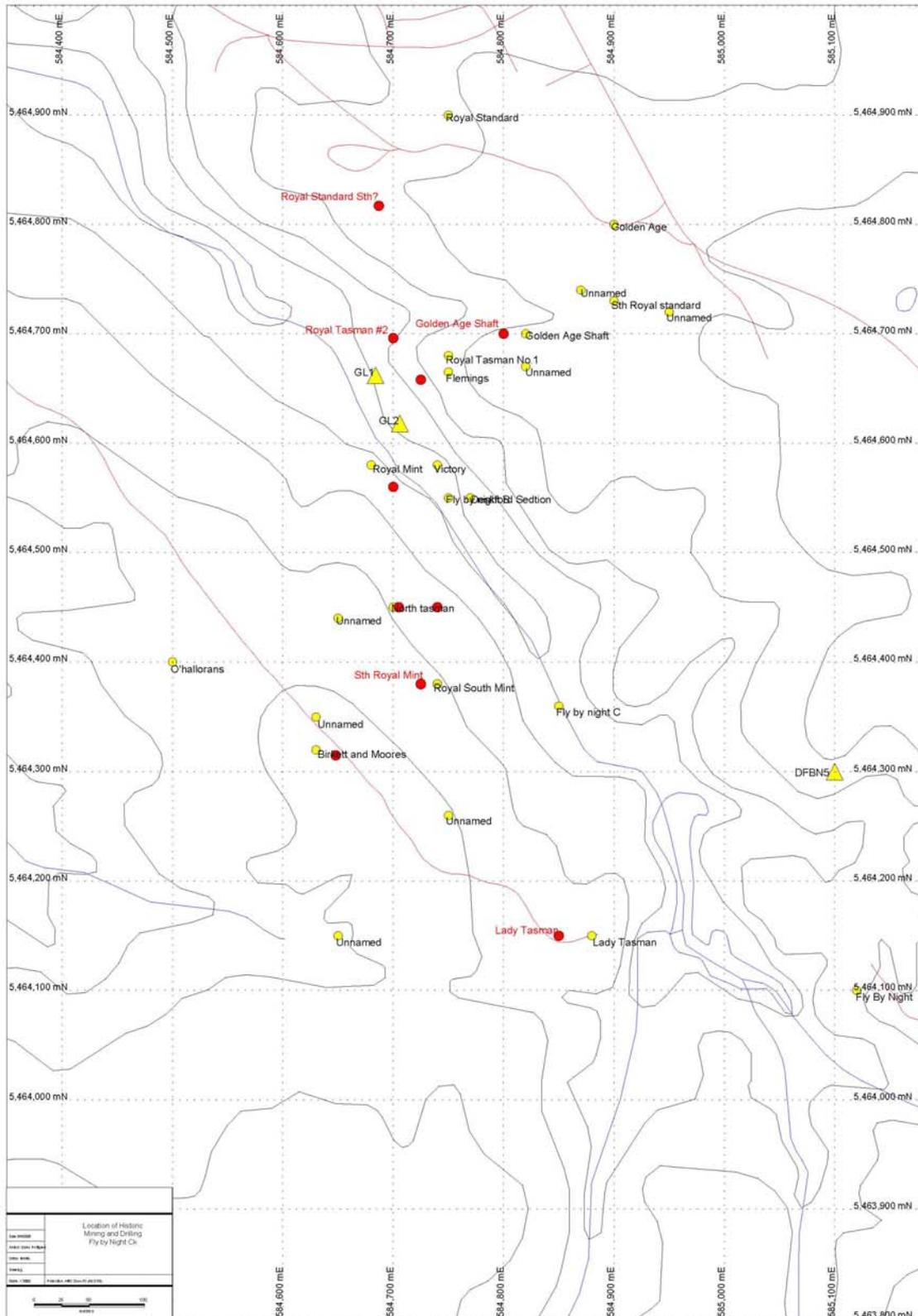


Figure 3. Map showing the locations of historic mines and drilling in the Fly by Night area. Yellow dots mark positions quoted by MRT, red dots mark the actual locations of mines and yellow triangles mark drill collars.

<b>Easting</b>	<b>Northing</b>	<b>Prospect</b>	<b>Metal</b>	<b>MRT Dep#</b>
584700	5464450	North Tasman	Au	316
584750	5464680	Royal Tasman No.1	Au	313
584680	5464580	Royal Mint	Au	311
584750	5464900	Royal Standard	Au	312
584140	5464520	Mt Cameron Ck	Sn	261
584750	5464665	Flemings	Au	296
584900	5464800	Golden Age	Au	298
584900	5464730	Sth Royal standard	Au	314
584740	5464580	Victory	Au	322
584650	5464150	Unnamed	Au	347
584870	5464740	Unnamed	Au	363
584820	5464700	Golden Age Shaft	Au	354
584750	5464260	Unnamed	Au	370
584630	5464350	Unnamed	Au	372
584770	5464550	Deskford Section	Au	295
585120	5464100	Fly By Night	Sn	297
584880	5464150	Lady Tasman	Au	302
584500	5464400	O'hallorans	Au	307
584740	5464380	Royal South Mint	Au	320
584850	5464360	Fly by Night C	Sn	333
584750	5464550	Fly by Night B	Sn,Au	349
584820	5464670	Unnamed	Au	362
584950	5464720	Unnamed	Au	362
584650	5464440	Unnamed	Au	369
584630	5464320	Birkett and Moores	Au	371
584850	5464850	South Royal Standard B	Au	361
584820	5464860	Unnamed	Au	367
584780	5464880	Unnamed	Au	366
584700	5464950	Flemings Wolfram lode	W	318
584650	5464850	North Tasman shaft	Au	306
584670	5464800	Royal Tasman no 2	Au	316
584550	5464700	West Tasman	Au	319
584430	5464850	Unnamed	Au	353
584430	5464850	Unnamed	Au	353
584300	5464900	Unnamed	Au	353
584000	5465000	Unnamed	Sn	374
584200	5465200	Unnamed	Sn	356
584450	5465150	Unnamed	Au	351
584400	5465250	Grand Centre	Sn	350
584700	5465050	North Royal standard	Au	317
584700	5465200	ML 10919	au	373
584600	5465500	Unnamed	Au	375
584810	5465550	Coarse Gold Creek	Au	294
585300	5468000	Popes	Au	308
585700	5466400	Bridge	Sn	342
585300	5466900	Mary	Sn	378
585600	5465700	Murray's Lode	Sn	341

**Table 1 Identified mineral deposits**

Sample	Easting	Northing	Metal	Au(ppm) (AuAA22)	Au(ppm) (AuAA25)	Sn(ppm)	Sn(%)	Notes
ne1812	603685	5453673	au	<0.001				qtz float in quarry
ne1813	604223	5453913	au	<0.001				partly ferruginised qtz rich porphyry
ne1814	604176	5453731	au	<0.001				ferruginous red/grey mudstone at margin of porphyry
ne1815	604214	5453722	au	<0.001				qtz vein material in flat at the margin of the porphyry
ne1816	594823	5444595	au	<0.001				qtz float in granite on the west margin of the Mathinna Beds
ne1817	585780	5464095	sn			716		muscovite/qtz greisen lumps in mine waste dump
ne1818	585952	5464936	sn			>10000	8.87	fine grained hard qtz-musc-cassiterite greisen float
ne1819	585601	5464742	sn			188		fine grained laminar qtz muscovite greisen with fine conformable qtz veins
ne1820	584720	5464380	au	<0.001				South Royal Mint: pink greisenous sugary qtz chips
ne1821	584705	5464445	au	>1.00	2.01			greisen like qtz chips
ne1822	584713	5464570	au	0.06				white icy qtz float at entrance to Royal Mint adit?
ne1823	584740	5464570	au	0.035				white fine sugary qtz waste rock at the entrance to the Victory adit
ne1824	584687	5464817	au	>1.00	6.97			sugary qtz at mine waste dump
ne1825	584741	5464632	au	0.904				fine sugary marble like qtz with some limonitic staining and some green staining along fractures
ne1826	584725	5464635	au	0.03				grey fine grained qtz from Royal Tasman waste dump
ne1827	584650	5464720	au	>1.00	6.39			white icy qtz with limonitic staining along fractures
ne1828	584535	5464622	au	0.081				white sparkly/sugary qtz with muscovite veinlets along fractures

**Table 2 Surface rock samples**

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## 7 EXPENDITURE

Total annual expenditure for EL66/2007.

<b>Geoscientific Costs</b>	
Geology	52,496.00
Geochemistry	1,764.00
Geophysics	
Remote sensing	16.00
<b>Drilling &amp; Gridding Costs</b>	
Gridding	
Drilling	
Earthmoving	
<b>Land Access Costs</b>	
<b>Feasibility Costs</b>	
Other Costs	2,310.00
Rental fees	
Vehicular track Construction	
Surveying, contract drafting etc	
Capital equipment purchase	
Administration Costs	5,207.00
(note: not to exceed 10% of annual expend)	
Legal	
Office & Admin	
<b>Total</b>	<b>61,793.00</b>