# Lancaster Resources Pty Ltd

# Gladstone Project

# E14/2011

# ANNUAL EXPLORATION REPORT

## Reporting Period

## 23/03/2012 – 22/03/2013

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Author: J Cooke

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**Project Name: Gladstone**

**Tenement Numbers:** EL14/2011

**Tenement Operator:** Lancaster Resources Pty Ltd

**Tenement Holder:** Lancaster Resources Pty Ltd

**Report Type:** Annual Exploration Report

**Report Title:** Annual Exploration Report

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**Author:** J Cooke

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**Target Commodity:** Au

**Keywords:** Literature Review, Geological Mapping

**ABSTRACT**

**Location:** E14/2011 is located in the North East of Tasmania with the regional centre of Gladstone occurring in the central north area of the tenement.

**Geology:** Surface geology comprises Quaternary stream, marsh and marine terrace deposits as well as Tertiary gravel, sand, silt and clay deposits towards the north; Mathinna Beds and granitoids occur in the south.

**Work Done:** Surface mapping and interpretation, boundary surveying, literature review.

**Results:** A comprehensive review of the previous exploration activities has identified a number of targets warranting further investigation.

**Conclusions:** A systematic geochemical survey is proposed to be conducted across the identified targets in conjunction with geological mapping to get an understanding on the controls and extents of mineralisation.

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# 1. INTRODUCTION

Lancaster Resources Pty Ltd ("Lancaster") is the current holder and operator of E14/2011, Gladstone Project. The tenement was granted on the 23rd of March 2012.

# 2. LOCATION, LAND STATUS & ACCESS:

The tenement is centred around the regional centre of Gladstone in North Eat Tasmania. The land is comprised predominantly forest with intensive farming to a lesser extent. The region has an extensive history of alluvial tin and gold mining. The majority of the project area is gently undulating with more rugged topography occurring to the south of the project area. Access is very good through many tracks and road in and around the township of Gladstone.


**FIGURE 1: SATELLITE IMAGERY**

# 3. TENEMENT STATUS:

**TABLE 1: TENEMENT STATUS**

| Tenement | Type | Status | Holder | Grant Date | Expiry Date | Legal Area | Units |
|---|---|---|---|---|---|---|---|
| EL14/2011 | Exploration Licence | Live | Lancaster Resources Pty Ltd | 23/03/2012 | 22/03/2017 | 7 | $Km^2$ |

# 4. PROJECT GEOLOGY

The surface geology of the project area is dominated by Quaternary stream, marsh and marine terrace deposits as well as Tertiary gravel, sand, silt and clay deposit. Mathinna Beds and granitoid intrusions lie to the southern extent.

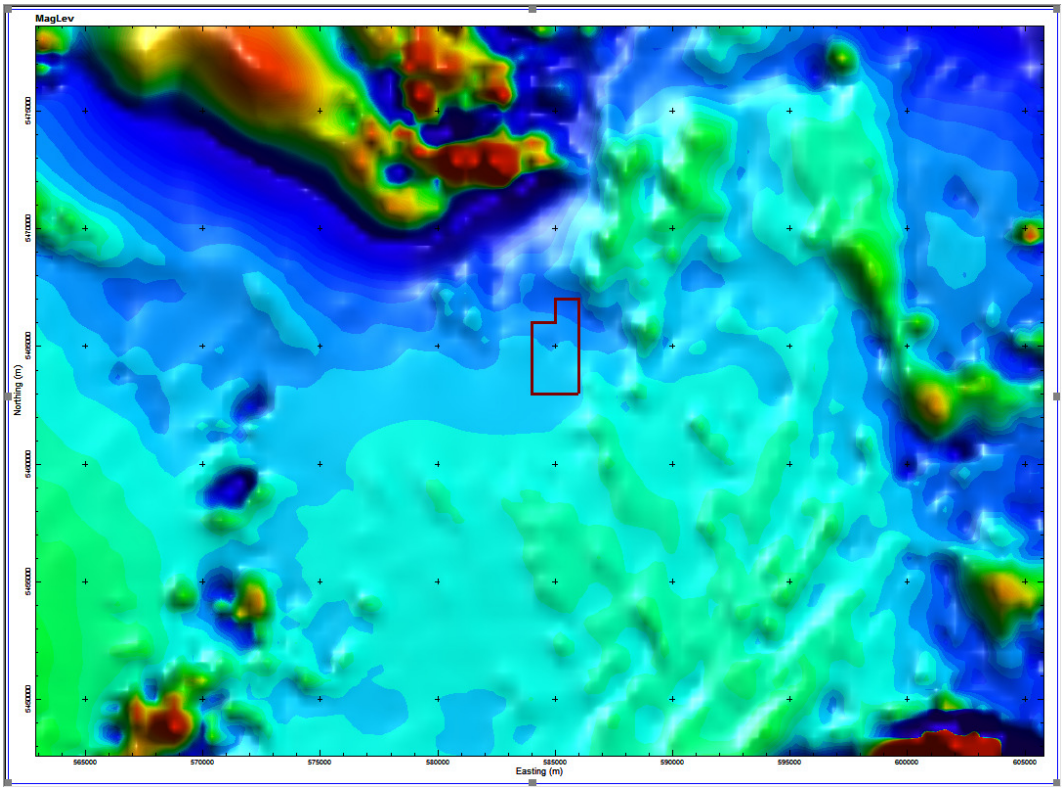


**FIGURE 2: REGIONAL MAGNETICS**

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 an adamellite of the Poimena Pluton, which in turn has been intruded immediately to the east and south of the project area by another

granite/adamellite. This body contains cassiterite- bearing greisens which are found within the project area. The Mathinna beds have undergone contact metamorphism on the margin of the intrusive bodies grading into regional metamorphism distal to the intrusives.

## 5. MINERALISATION

Gold bearing quartz veins occur in a zone trending north-north-east 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. They strike in a north westerly direction and are normally steeply dipping.

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.

## 6. HISTORICAL MINING & EXPLORATION

Historical mining in the region commenced around 1880's with the discovery of the Royal Tasman gold reef and "Fly By Night" tin deposit immediately to the south of Gladstone. By 1883 production of gold (from several reefs) had declined. Further prospecting activities was conducted 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 the Fly by Night Creek the Royal Mint on its southern side and Fleming's, Royal Tasman No.1 , Royal Tasman No.2 and Royal Standard to the north.

Coarse Gold Creek occurs as a parallel reef to the north of the township. Another gold deposit of interest is known as Popes Prospect, 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.

### a. 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). Stoping 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.

### b. 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.

### c. 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. Mine worked by the Royal Mint G.M. Co. 1881-83, Dreadnought G.M. Co. 1909 and Victory G.M. Co. 1931.

### d. 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.

# 7. EXPLORATION COMPLETED

During the reporting period an extensive literature review was conducted which involved the acquisition, evaluation and where relevant the digitisation of relevant historical exploration information. Available geophysical data was also acquired and where relevant reprocessed to assist with the understanding of the project geology and mineralisation potential.

From the preliminary interpretation of the exploration activities historically completed a number of targets were identified which warrant further investigation.

# 8. CONCLUSIONS AND FUTURE WORK PROGRAMME

On the basis of the information identified from the comprehensive literature evaluation and data compilation a systematic geochemical survey is proposed to determine the controls and extent on mineralisation. This program will be conducted in conjunction with a detailed geological mapping program to further understand the structure and potential repetitions of delineated mineralised trends.

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