

# CARDROSS PROJECT

*Chillagoe District, North Queensland*

## EPM 15078 “Cardross North”

### PARTIAL RELINQUISHMENT REPORT

JANUARY 2010

#### Tenement Holder

Ozmin Resources Pty Ltd

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**ABSTRACT**

The following is a partial Relinquishment Report on Exploration Permit 15078, “Cardross North Project” and a summary of all exploration activities conducted on the areas to be relinquished for the total time of tenure. A total of 5 sub-blocks within the group have been identified as non-prospective and are to be released.

Activities have included;

- Literature reviews of historical exploration data, technical and annual reports.
- Site visits to assess the permit areas for access options for ground-based exploration activities
- Compilation of historical data and database entry
- Soil sampling
- Rock chip sampling

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## **1. Introduction**

This report is a summary of the exploration activities conducted on Cardross North EPM 15078 (Figure 1), between the 5th December 2007 to 4th December 2009 for the purpose of the relinquishment of 50% of the EPM's current sub-blocks. The current EPM area covers approximately 32.8km<sup>2</sup> and expires on the 4<sup>th</sup> November 2012. Ozmin Resources Pty Ltd currently has 100% interest over the EPM.

EPM 15078, "Cardross North" is situated 35 km northwest of Chillagoe. It lies within the extensively mineralized northern margin of the Nundah Batholith.

Widespread generally structurally focused base and precious metals mineral occurrences are known throughout the batholiths and around its margins. In this area, known mineralization is hosted within both the Dargalong Metamorphics and the Nundah Granodiorite. The EPM is of strong interest as it covers the NE extension of the Cardross Shear which has both shear-hosted copper-gold, +/-zinc and magnetite as well as epithermal gold-arsenic mineralization. The source of this mineralization is conceivably porphyry intrusive and/or breccia-hosted mineralization at depth.

As a result of Ozmin's substantial investigations at Cardross (initially on ML 20003) since 2006, it became clear that the entire area around Cardross was highly prospective. The company set out to establish a solid workable ground position with the express purpose of exploring, under virtually one group of tenements, the extensively mineralized Nundah Batholith and its surrounds. EPM 15078 forms part of the tenement group.

Exploration conducted on EPM 15078 by Ozmin Resources during the course of tenure has included an examination of previous exploration data, acquisition of the available regional airborne geophysical data, geological field reconnaissance, rock chip, soil sampling and mapping. No ground exploration has been performed over the sub-blocks to be relinquished.

### **1.1 Tenure**

EPM 15078 "Cardross North" was granted to Gray's Resources Pty Ltd on 5<sup>th</sup> December 2007 for a period of five years (expiring on 4<sup>th</sup> December 2012). The tenement was assigned (100%) to Ozmin Resources Pty Ltd on 15<sup>th</sup> April 2008.

The exploration tenement currently comprises 10 sub-blocks as tabled below (Figure 1):-

<u>BIM</u>	<u>Block</u>	<u>Sub-blocks</u>
Town	865	k
Town	866	b c d e f g h j k

The Environmental Authority No. is MIM500337705, no earthworks or ground disturbing activities were carried out over the areas to be relinquished.

The NW tip of mining lease 20003 "Cardross" held by Ozmin encroaches onto the southern area of the EPM.

## **1.2 Relinquishment**

As required by the DME Queensland, 50% of the sub-blocks are due to be relinquished by 4<sup>th</sup> November 2009. The remaining 5 sub-blocks selected are tabled below now covering an approximate area of 16.4km<sup>2</sup>:

<u>BIM</u>	<u>Block</u>	<u>Sub-blocks</u>
Town	866	c d f g h

Refer Figure 1.

## **1.3 Location, Access and Topography**

EPM 15078 is located approximately 35km northwest of Chillagoe in North Queensland (Figure 2). Access is via the Burke Development Road and the graded road servicing Blackdown Station and surrounds. There are limited 4WD tracks and fence lines enabling access into the area.

The EPM covers parts of two cattle properties as follows:-

- Blackdown Station: Land-holder/s - JR McEwen Pty Ltd, Ross Gardner Copland, Mick Land Pty Ltd, and
- Rookwood Station: Land-holder/s – Iris Margaret, Ivy Adelaide, Patricia Lucia, Raymond David, Ronald Ferguson, Kay Dorothy Simpson

The EPM is located on the Mungana (7763) 1:100,000 and Atherton 1:250,000 map sheets.

Ozmin's field camp and office facilities, established on ML 20003, are well placed to support exploration activities in the Cardross North area.

The topography consists of moderate to steeply undulating hills, with varying open to dense vegetation. The main creek system is the Walsh River, which runs through the northern sub-blocks of the EPM. Muldiva Creek joins the Walsh R. in the NE corner of the EPM. Two other tributaries, Sandy Ck and Cardross Ck, drain northward through the EPM into the Walsh R (Figure 2).

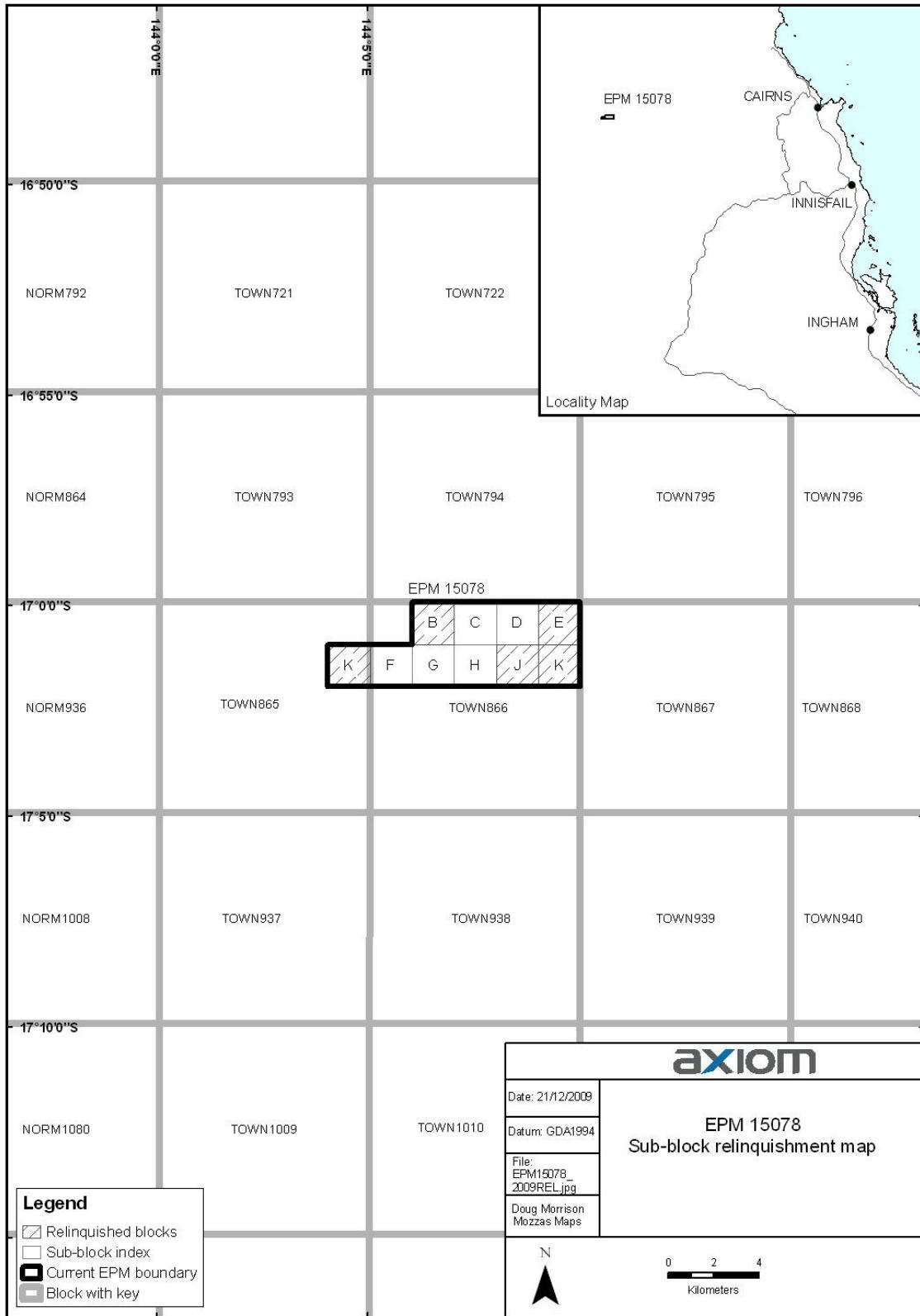


Figure 1. EPM 19078 Tenure Map

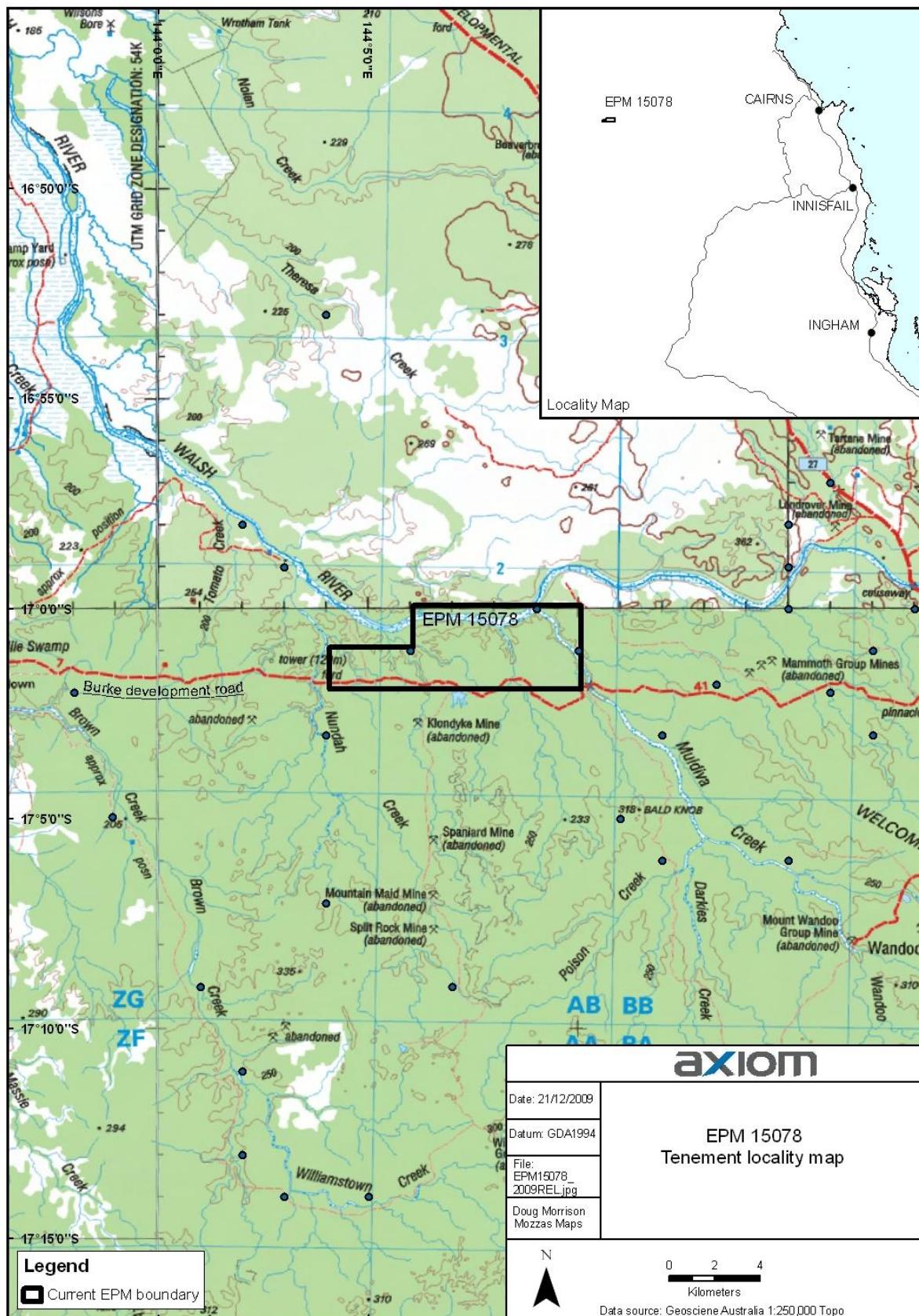


Figure 2. EPM 15078 Locality Map

## 2. Geology Overview

EPM 15078 lies within the Proterozoic Dargalong Inlier, west of the major north-west trending Palmerville Fault System in North Queensland (Donchak and Bultitude, 1998). Proterozoic muscovite schist and gneiss are the oldest rocks and occur throughout the eastern and south-eastern part of the tenement. These metamorphic rocks are extensively intruded by Late Ordovician to Early Silurian Nundah Granodiorite, occurring mainly in the western sub-blocks of the tenement. Felsic dykes (probably Permo-Carboniferous) have been mapped intruding the metamorphic rocks. These generally have a north-westerly strike, cutting through (but sometimes along) the north-easterly striking Cardross Shear and adjacent shear systems.

A well defined east-west contact zone between the Late Carboniferous Pratt Volcanics and the Nundah Batholith lies immediately to the north of the northern EPM boundary. Indications are that this contact may be related to a structural splay off the Palmerville Fault, making it highly prospective (**Figure 3**).

The Chillagoe region of North Queensland is known for its mineral deposits, some economic including copper, gold, silver, lead, zinc, tin, tungsten, molybdenum, bismuth, fluorite and marble of Permo-Carboniferous age (De Havelland, 1989). The principal target in the EPM area is for shear-hosted copper-gold vein mineralization, with the potential for stockwork and/or breccia-hosted and possibly porphyry-related mineralized source rocks at depth. There is also potential for epithermal-style gold associated with altered porphyritic intrusives.

The following gold and base metals prospects and abandoned workings (MinOcc Series) are located throughout the EPM:-

Nelson, The Greek, Arizona, Aurora Mine, Andromachy Mine, Scalliwag, Dictator, The Trojan, Yankee, Argosy, Caroline Mine, Leidenroth Mine, Leviathan Mine, Sink-i-loo, and several other unnamed prospects (**Figure 3**).

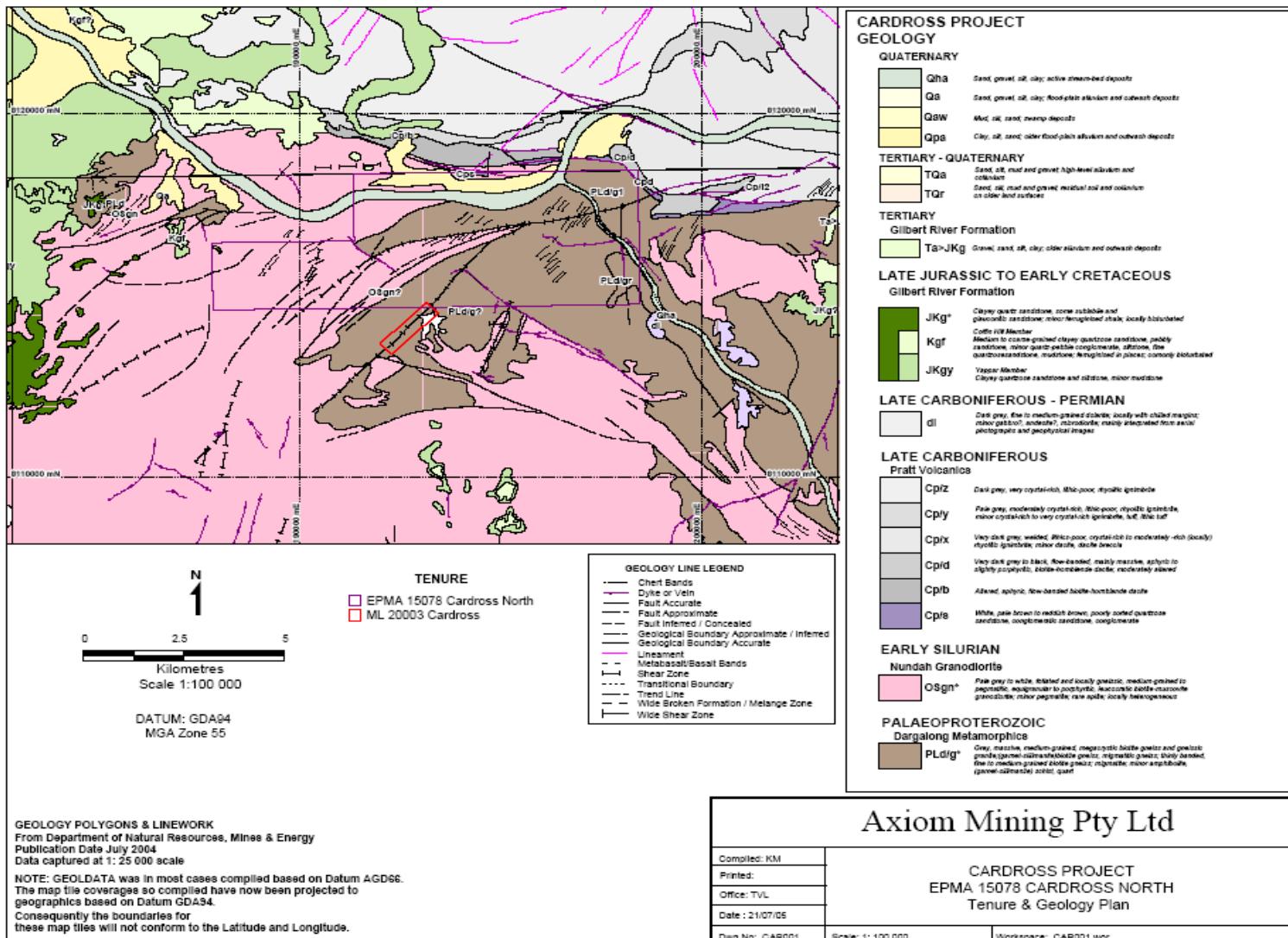


Figure 3. EPM 19078 Geology Map

### **3. Summary of Work Completed**

Apart from fairly comprehensive exploration, including drilling, within ML 20003, there has been limited previous exploration covering the ground encompassed by EPM 15078 itself.

#### **3.1 Historical Exploration**

Between 1969 and 1973, Cyprus undertook mapping, stream sediment and soil sampling, costeanning, and ground geophysical surveys (IP and magnetics). Most work was on ML 20003, but one Cyprus percussion drill hole (6C-13) was drilled in the Cardross Shear zone a short distance to the north of the ML. Only weak sulphide mineralization was encountered, but the hole was vertical, and could have missed the main sub-vertical zone of mineralization.

In 1982, CRAE drilled 10 percussion holes over 1,800m strike length of the Cardross Shear, testing for both copper and gold. Most of this drilling was on ML20003.

The drilling yielded best results of 3m at 1.6% Cu from a depth of 64m within a broader zone of 15m at 0.5% Cu in PD82CA3, located just south of the Chieftain Mine, toward the northern end of ML 20003. One hole (PD82CA1) was drilled in the Cardross Shear to the north of ML 20003 on ground now within EPM 15078. This hole intersected weak copper mineralization and there was no follow-up to the NE.

In 1988, Costain Australia Limited mapped the Cardross Shear, historically referred to as the “L Line”. The mapping extended north east from ML 20003 onto the current EPM area, but was not followed up by further work. Costain was focused on the gold potential of the area, with their 18 drill hole program achieving several significant (+1g/t) gold intersections, but all within the ML.

#### **3.2 Recent Exploration Summary**

Exploration in Term 1 included:-

- A review of previous exploration carried out within and surrounding Cardross.
- Acquisition of the Explorer 3 data.
- Data entry into the Ozmin Database.
- Acquisition of the available regional airborne geophysical data and preliminary assessment of the magnetic imagery.
- Acquisition of 1:100,000 IKONOS imagery.
- Reconnaissance work using established tracks and fence lines.
- Familiarization with the map units as represented by the government Mungana 1:100,000 geological mapping.
- An 87 sample orientation soil traverse from the Arizona workings to the Cardross Shear.
- Collection of 91 rock chip and mullock samples throughout the EPM and analysis for Au, base metals and major and trace elements.
- 2009 Soil sampling program along NE extension of the Cardross shear.

The EPM was reconnoitered using IKONOS imagery, published geological mapping, and available Explorer 3 geochemical data. The main control for the work was the system of sub-parallel silicified, mineralized, and ferruginized shear zones, and in some cases porphyritic felsic dykes intruding within the same shear system. In addition, the area lies at the broad intersection of the NE-trending Cardross Shear system and the NW-trending Cardross-Muldiva structural corridor, in the northern extremity of the Nundah Batholith.

The Explorer 3 data records a number of significant anomalous stream sediment and rock chip copper sample results in the western and central sub-blocks of the EPM. The anomalous stream sediment results are located in the Cardross Ck drainage. This probably reflects the extent of historic disturbance in the Cardross Shear, ML 2003, and Arizona areas.

This led to examination and sampling (soils, rock chips, & dumps) of most of the previously identified historic workings and mineral occurrences, and production of an interim working map (Figure 3).

## 4. Summary of Results

A soil orientation survey was conducted during 2008 along the southern boundary of the EPM. A total of 87 samples were collected every 50m between the area of the Arizona workings and the Cardross Shear. Samples were sieved to -3mm, and assayed at a Townsville Laboratory for a multi-element suite by ICP, and AA for gold.

With 20 of the samples returning values in excess of 10ppb Au, it appears there is an elevated gold background in the area. A high gold value of 222ppb was obtained at one location, but this was not repeated in a duplicate sample. Further evaluation of the data is required to determine its level of application to the project area, and confidently identify anomalies for ground follow-up.

The majority of rock chip and dump samples collected were deemed typical of the country rock. Samples were assayed at a Townsville Laboratory for multi-element suite by ICP with or grade digest for >10,00ppm, and AA for gold.

Of the 91 samples assayed, 26 returned gold values greater than 0.1g/t, with a high of 16.55g/t Au, while 21 returned copper values greater than 1%, with a high of 14.1% Cu. Both the high grade samples were from the Arizona area, in the west of the EPM. This appears at surface to be the most prospective area in the EPM, although the Cardross Shear is still believed to have potential at depth.

The high gold sample also returned high silver (208g/t) and lead (1.34%) values. Sporadic anomalous Bi, Zn, As, and Ag values are noted. The Sink-i-loo prospect on the Cardross Shear returned a copper value of 7.1%.

The 2009 Soil sampling program was conducted along the NE extension of the Cardross shear. 264 samples were collected at 50m intervals on 100m spaced lines and covered an area 2100m by 550m.

Gold was found to be sporadic with 17 of the samples returning values in excess of 10ppb. The highest value returned at 104ppb with one adjoining sample >10ppb. Copper returns the most coherent anomaly in the southwest corner of the soil grid with a 300m long by 250m wide, 50ppm anomaly which is open to the south and clearly is related to the Cu-anomalous Cardross shear. Peak value was 482ppm. A coincident 100ppb Silver anomaly (peak 2.5ppm) is also located here.

## 5. Reasons for Relinquishment

Geological studies conducted over the EPM has concluded that mineralization is associated with specific structural zones within the EPM. This understanding has enabled further refinement of targets and therefore those sub-blocks to be relinquished are not deemed as prospective by Ozmin in comparison to the retained ground.

## 6. References

De Havelland, D.W., 1989. Gold & Ghosts Volume 4 Queensland, Northern & Northwestern Districts. *Hesperian Press*

Donchak, P.J.T, and Bultitude, R.J., 1998. Atherton (2<sup>nd</sup> ed.), Queensland 1:250,000 geological series—explanatory notes to accompany Atherton 1:250,000 geological map, sheet SE 55-5: *Geological Survey of Queensland, Department of Mines and Energy*

Axiom Prospectus 2006