

# **KITCHENER MINING NL**

**EPM 17832 – ROBEY RANGE EAST**

**Partial Relinquishment Report**

**May 2011 – May 2013**

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**18<sup>th</sup> September 2013**

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## Summary

This report summarises exploration activity in EPM 17832 and its relinquished sub blocks for the first two terms (2011 – 2013). Eight sub blocks (50%) were compulsorily relinquished on 20<sup>th</sup> July 2013. The sub blocks were selected based on preliminary results of office based studies, which deemed them less prospective than the remaining eight sub blocks.

## Introduction

EPM 17832 – Robey Range East consists of an area that stretches from 15-25km south of Ravenswood, in the Dalrymple Shire, North Queensland (Figure 1). The tenement is accessed via the Burdekin Falls Dam Road.

The area covered by the permit is centred on the Mt Canton Permo-Carboniferous intrusive-extrusive complex and related ring dyke structure. The structure is considered prospective for gold and base metal mineralisation hosted by breccias or vein stock works within, or adjacent to an underlying intrusive rock. Previous drilling near Mt Canton has identified that gold mineralisation occurs within breccias of a locally significant ring dyke structure. The breccias outcrop on the western side of Mt Canton. Several areas of alteration and coincident soil geochemical anomalies have been identified by previous exploration efforts. A number of untested geoscan anomalies were also identified by airborne scanner, in surveys conducted by Union Oil Development Corporation in 1986. Additional exploration is warranted over these targets in light of the encouraging drilling results obtained from previous investigations in the area. Potential exists for locating gold mineralisation within a high level intrusive rock that is likely to have acted as a feeder to the mineralized breccias. Potential may also exist for locating higher grade vein type gold mineralisation in flat lying structures, generated by resurgent collapse within the underlying magma chamber. Diamond drilling to depths of 500m or more would be necessary to test the target.

## Tenure

Kitchener Mining NL was granted EPM17832, for a term of 5 years, on 31 May 2011 consisting of 16 sub-blocks. 8 sub blocks were compulsorily relinquished on the 20<sup>th</sup> July 2013 (Table 1). The remaining 8 sub blocks are listed in Table 2.

The tenement lies within the area covered by the Charters Towers 1:250,000 scale geological map sheet and the Ravenswood 1: 100,000 topographic map.

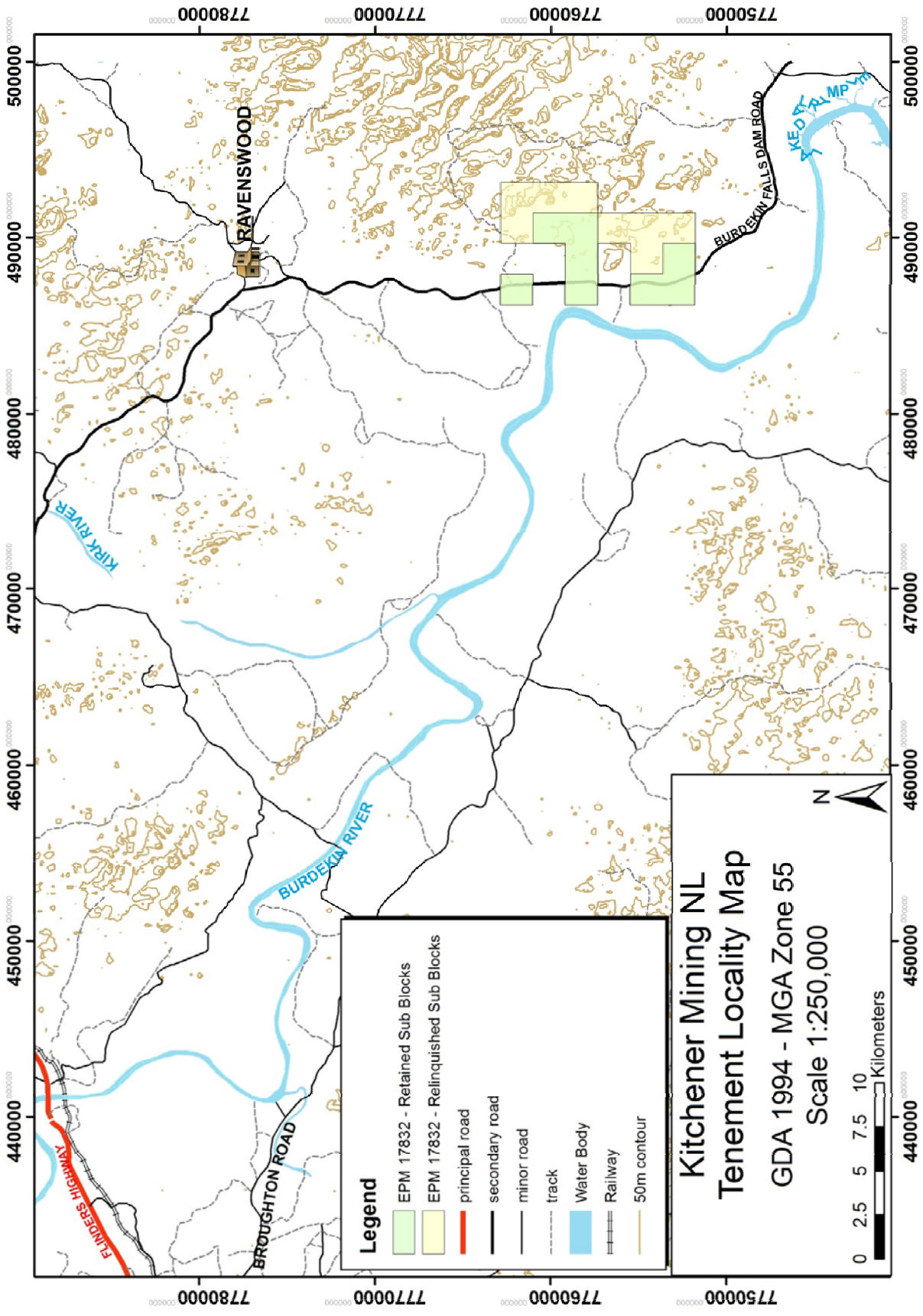
**Table 1 - EPM 17832 Block Identification Table Relinquished Sub Blocks.****Block Identification Map: Clermont**

<b>Block Number</b>	<b>Sub Block(s)</b>
179	Z
180	V
251	P, T, U, Z
252	A, F

**Table 2 – EPM 17832 Block Identification Table Remaining Sub Blocks.****Block Identification Map: Clermont**

<b>Block Number</b>	<b>Sub Block(s)</b>
179	X
251	E, H, J, K, S, X, Y

Figure 1 – EPM 17832 Tenement Locality Map.



## Geology and Mineralisation

The Robey Range East Project, EPM 17832, lies within the south-eastern margin of the Ravenswood Batholith (Figure 2). The Lolworth Ravenswood Block is dominated by a number of major plutons that together comprise the Ravenswood Granodiorite Complex. The Mt Canton Igneous Complex dominates the central portion of EPM 17832 and is one of a number of younger Permo-Carboniferous high-level intrusive-extrusive bodies that invade the Ravenswood Batholith. The complex is composed of brecciated intermediate and felsic rocks including varying proportions of feldspar porphyry, trachyte, rhyolite, and feldspar-biotite ± hornblende porphyry (Harmsworth, 1993). Mt Canton lies on a south-westerly trend that passes through Camp Oven Mountain, and onto Pajingo. Gold and base metal mineralisation is associated with many of the later sub-volcanic intrusive bodies with a diversity of mineralisation styles as typified by Mt Leyshon, Seventy Mile Mountain, Mt Wright, Ravenswood, Rishton-Hadleigh Castle-Charters Towers and Kidston. The main prospects at Mt Canton are related to a ring structure generated by cauldron subsidence on the margin of a Carboniferous age intrusive. The mineralisation near Mt Canton is characterized by gold-bismuth-arsenic- (molybdenum) geochemical association. The gold mineralisation is located in magmato-phreatic breccia and intrusive ignimbrite located on a radial ring dyke complex. Mineralisation is also associated with quartz veins and silicified areas in adjacent structures.

The north-eastern part of the tenement is dominated by the Robey Range granite, a pink, fine to medium grained porphyritic granite unit. Several north-west trending fractures run across the unit throughout the lease. Some minor historical gold (Au) workings/prospects are present in the north-eastern-most part (e.g. Queen of Sheba Breccia).

## Previous Exploration in the Area

Mining activity is reported to have occurred from the Mt Canton diggings in 1899, when 20 ounces of gold was recovered (Harmsworth, 1993). Additional production was obtained from creeks draining the area but the total production was only minor, probably less than 100 ounces.

The region has undergone various phases of exploration that has involved:

1. Alluvial gold search.
2. Quartz vein related gold-sulfide targets.
3. Exploration for porphyry copper deposits, undertaken in the 1960's and 1970's. Anaconda identified some anomalous stream sediments draining from Mt Canton during this period (Dalgarno, 1966).

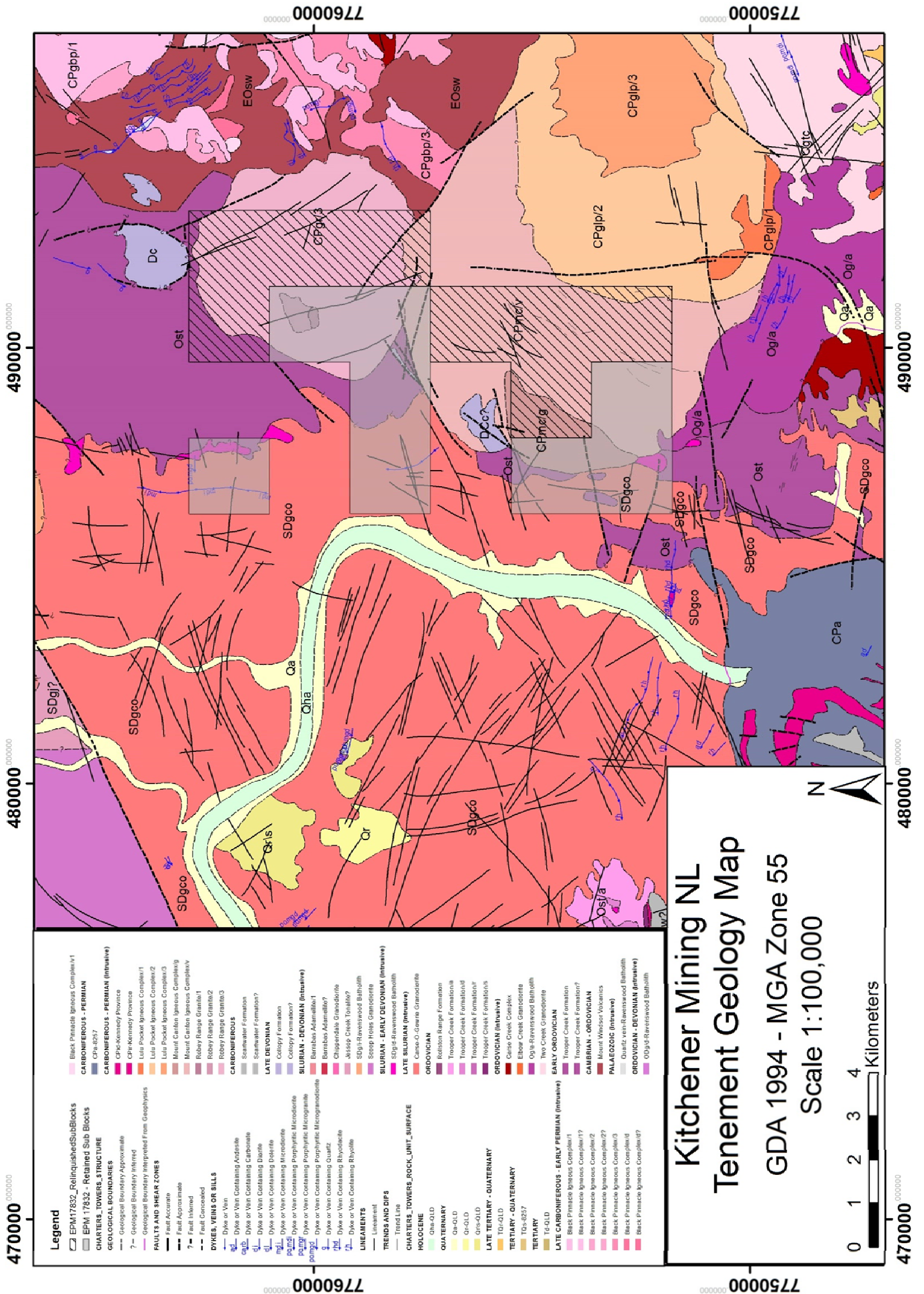
4. Base metal search using stream sediment sampling targeting volcanogenic massive sulfides conducted in the 1970's and 1980's, focused on the Mt Windsor volcanics. Some interesting Pb/Zn anomalies were located some 4km south of Mt Canton by Cormepar Minerals (Layton and Associates, 1974).
5. Epithermal and porphyry related gold exploration was conducted from 1980 to the present using stream geochemistry. Ranger Exploration obtained 0.2ppm and 0.55ppm gold values from BLEG samples, in the vicinity of Mt Canton. Follow-up resulted in the identification of a mineralized rhyolite breccia on the flanks of Mt Canton.
6. Union Oil Development Corporation identified gold in pan concentrates collected from streams located to the north of Mt Canton.

### ***Mt Canton Project – Poseidon Exploration (1989-1993)***

Poseidon conducted detailed follow-up work on EPM 5948-Mt Canton, over the mineralized breccia previously identified by Ranger Exploration (Henry, 1991&1992). Geological mapping, aerial photo and Landsat interpretations were completed over the region. An extensive exploration grid was laid out covering Mt Canton and over 1,947 soil samples and 216 rock samples were collected. All samples were assayed for BLEG Au, Cu, Pb, Zn and As. Petrology and lead isotope geochemistry was carried out on 60 rock samples. Geophysical work involved 120kms of ground magnetics, resistivity and IP-EM surveys covering the prospect.

Poseidon drilled 15RC holes (2,027m) and eight cored holes (1,516m) on three prospects. The holes targeted IP resistivity areas with little credence given to the soil geochemistry. The results of the RC drilling were very disappointing with only one sample returning > 1g/tAu. The diamond holes targeted geological features (alteration, brecciation and structural features) and returned some moderately encouraging results.

Figure 2 - EPM 17832 Regional Geology.





### ***Mt Canton Project – BHP Minerals Pty Ltd - EPM 9802 (1995 to 1996)***

BHP was granted EPM 9802 over Mt Canton in 1995-1996. They reassessed the work of Poseidon as part of a review of sub-volcanic target areas in North Queensland (Wilde, 1996). Some mapping and rock chip sampling was undertaken on Mt Canton with results peaking at 60g/t Au. BHP statistically levelled the soil geochemical data of Poseidon and the results highlighted a strong multi-element anomaly following the arcuate ring-dyke feature. Targets were also defined corresponding with the Breccia and Rhyolite Breccia Prospects that follow a NW trend, traversing the main ring structure. BHP decided to focus their drilling on the Three Peaks Breccia prospect located approximately 10kms to the east of Mt Canton on Rangeview Station. Additional drilling was completed by BHP on the Hanoverian and Star of the South gold prospects, NW of Mt Canton.

### ***Mt Canton Project -Haoma Mining – EPM 9802 (1996 to 1999)***

Haoma Mining NL acquired the Mt Canton Prospects from BHP in 1996. Haoma proceeded to drill test the main prospects over the old Mt Canton workings (MC1-4) and the Breccia Prospect (BP 03 to 10; Peters, 1998 and 1999). The MC1-4 holes were located under the old workings in the hanging wall and were not drilled in the areas of best soil geochemistry. The BP holes were designed to infill the Poseidon drilling program and most returned poor results. BP 10 was drilled towards the south to test a possible cross structure. BP09B was also drilled in a different direction. Both holes returned intersections better than 2g/t Au. The results imply that gold mineralisation may be controlled by a northwest trending structure that cuts across the ring-dyke. This interpretation is supported by surface soil geochemistry and warrants further investigation because previous drill orientations would not have adequately tested this target.

In 1997, Hamoa drilled an additional 16 RC holes in the south Mt Canton area to follow up on an interval of gold mineralisation found in SMC08 (4m @12.75g/tAu). The drilling revealed a number of thin (1-4m) intervals of gold mineralisation in the range 0.5 to 14g/t. These mineralized intervals have an irregular and apparently discontinuous distribution, and the drilling failed to locate a continuous zone of mineralisation. Pyrite is the most commonly observed sulphide and occurs associated with epidote alteration, in quartz-epidote veins and on microfractures in porphyritic andesite, granodiorite/tonalite, or fine grained felsic volcanics and silicic sediments (Peters, 1999).

Two holes were drilled at Mt Carlton North (MCN07 & MCN08) to follow up a 2m intersection in MCN03 of 5.55g/t Au. No continuous zone of mineralisation was encountered, although variably altered porphyritic andesite with minor quartz-epidote-pyrite veins and brecciation were present at 29-30m in MCN07. Hole MCN08

recorded 28m of siliceous sediment and from 28-54m variably sericite-epidote-silica altered porphyritic andesite. Another hole was drilled on the Breccia Prospect to follow up a 2m interval of 0.78g/t Au in BP12. Sericite-epidote-silica altered porphyritic andesite was encountered but no significant mineralisation was intersected.

To date approximately 7,000m of drilling has been completed on the Mt Canton gold prospects.

### ***Robey Range Project - Kitchener Mining NL EPM14038 (2004-2007)***

Kitchener Mining NL conducted several soil and rock chip sample programs in the area during this period. These revealed potential high-grade source rocks in a zone of alteration and silicification underlying a flow banded rhyolite, near the top of a breccia complex in the north Mt Canton area. The structure was reported to have a possible strike length of 100m (McKenzie, 2007).

Kitchener Mining NL (McKenzie, 2007) reported that exploration undertaken on Mt Canton to date has been extensive and over 7,000m of drill testing has been completed, with no significant gold deposits located to date. Rock chip and soil sampling (for 481 samples) has been completed and highlighted several different mineralization styles.

The geological setting and structure is favorable to a larger system of gold mineralization, and the possibility of locating gold mineralisation at greater depths warrants further investigation. Recent drilling by Newcrest at Mt Leyshon has intersected high grade gold mineralisation around 1000 meters below surface, and gold is known at similar depths at Mt Wright. The relative abundance of quartz-epidote veining at Mt Canton also suggests that the gold mineralisation is near the top of an alteration system. The relatively small size of the breccias also indicates location in the upper level an underlying stock (or possible lack of hydrothermal fluids).

### **Work Completed in the Surrendered Sub Blocks**

During the first two terms of EPM 17832, no field work was undertaken on Kitchener tenements in Queensland.

An extended disruption to Kitchener's operations occurred between October 2011 and August 2012 resulting from staff changes and cyclonic damage to site offices and records at Bamboo Creek in Western Australia.

Office based evaluation resumed in May 2012 including:

- compilation and review of historic data,
- detailed analysis of the geological setting within the tenement,

- evaluation of existing prospect areas and previous exploration methodology,
- prioritisation of known targets and appraisal of new zones using archive and public domain geophysical data

Resumption of field exploration activities in the Ravenswood area was planned in the last quarter of 2012, however, the program did not commence due to failure to obtain landholder agreements. Further delays have prevented any fieldwork being done to 30 May 2013.

The sub blocks listed in Table 1 were deemed as least prospective, in EPM 17832, and chosen for compulsory relinquishment founded on preliminary results of office based studies.

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## Appendix 1

### Acknowledgement and Warranty

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