

16 February 2012

### HARVEST METALS INDEPENDENT EXPERT'S REPORT RELEASED

#### Key Points:

- **COALBANK** has received the Independent Expert's Report which provides a technical review of the prospectivity of the Group's metals projects held via its 100% subsidiary, **Harvest Metals**.
- The Company is very excited about the prospectivity of Harvest Metals' projects highlighted by the Expert's Report.
- COALBANK has recently received increasing corporate interest in its Harvest Metals subsidiary.

**COALBANK LIMITED (ASX: CBQ)** is pleased to release the Independent Expert's Report (**attached**) received for its 100%-owned copper-gold subsidiary **Harvest Metals** Pty Ltd (Harvest Metals).

COALBANK commissioned an Independent Expert during late 2011 to review its EPMs covering its Chillagoe (North Queensland) and Mount Morgan (Central Queensland) metals projects which have been transferred to Harvest Metals.

From the results of the Expert's review, the Company is very excited about the potential for its Chillagoe and Mount Morgan area copper-gold projects and the future possibilities for Harvest Metals.

The Company will now pursue its commercial options for Harvest Metals during the coming months. This may involve farm-out of the metals projects, de-merger, or outside investment in/spin off of the Harvest Metals subsidiary. The Company's legal and tax advisors have been commissioned to prepare advice and make arrangements for a possible Shareholder's Meeting to seek approval for preferred commercial options.

In recent months, the Company has received approaches with increasing frequency from corporates with interest in reviewing the technical materials for Harvest Metals. The completion of the Independent Expert's Report by Salva Resources provides a comprehensive review of the relevant data and highlights the strong prospectivity of Harvest Metals' copper-gold projects.

#### **Ends**

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#### **About COALBANK LIMITED**

COALBANK LIMITED is an ASX-listed company (ASX:CBQ) that invests in and develops early stage upstream energy projects.

The Company holds one of the largest coal exploration permit areas in Australia, and is primarily focused on coal exploration in Queensland. Significant value is added to the Company's projects through its team's exploration expertise and commercial discovery experience.

COALBANK's future strategy includes the involvement of strategic industry partners for its key projects to accelerate their development from exploration to production. Given COALBANK's core focus on coal exploration, the Company will consider joint venture partners or spin-off opportunities for our petroleum subsidiary Surat Gas Pty Ltd, and for its metals subsidiary, Harvest Metals Pty Ltd.

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# **Independent Expert's Review on Harvest Metals Chillagoe and Mt. Morgan properties**

16.02.2012

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The Directors,  
Harvest Metals Limited,  
Second Floor, 101 Edward Street,  
Brisbane, Queensland, 4000  
Australia

16/02/2011

Dear Sirs,

Salva Resources Pty Ltd (“Salva”) has been commissioned by Harvest Metals (Pty) Limited (“Harvest Metals”) and Coalbank Limited (“Coalbank”) to provide an ‘Independent Expert’s Report’ (“IER”) covering their main exploration assets in the Mt. Morgan and Chillagoe regions of Queensland.

It is understood that the IER is required for inclusion in a prospectus to support the listing of Harvest Metals on the Australian Securities Exchange (“ASX”).

Harvest Metals is currently wholly owned by ASX listed Coalbank Limited (“CBX”), the current holders of the project assets. Prior to the listing, Harvest proposes to enter into an agreement with Coalbank to acquire the rights to all the metals assets whilst Coalbank focuses on developing their energy projects in the Western Surat and Clarence-Moreton Basins in Queensland.

Salva has based its review of the projects on information provided by Harvest and from publically available open file data. Salva has endeavored, by making all reasonable enquiries, to confirm the authenticity and completeness of the technical data upon which the IER is based. A final draft of this report has been provided to Harvest Metals along with a written request to identify any written errors or omissions. Exploration and evaluation programs summarized in this report amount to a total expenditure of approximately \$5,310,000 for the first two years following listing.

The IER on which this summary is based has been prepared in accordance with the “Valmin” code (the Code and Guidelines for Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports), which is binding for members of the “AusIMM” (Australian Institute of Mining and Metallurgy) and “AIG” (Australian Institute of Geoscientists), and the “JORC” Code (the Code for Reporting of Mineral Resources and Ore Reserves). The report is also consistent with the rules and guidelines issued by such bodies as ASIC and the ASX which pertain to IER’s.

The report was compiled by Mr. Tom Charlton B.A.Sc. (Geology Honors), and by Beverly Fillmore BSc (Earth Science). The report was peer reviewed and edited by Dr. Louis Schurmann PhD (Exploration Geology), Pr. Sci. Nat, FSEG, MAusIMM.

Mr. Charlton is a Geologist with nearly 20 years’ experience in the mineral exploration industry having held senior positions with several mineral exploration companies and consultancies, and gaining exposure to a range of gold and base metals exploration projects. Mr. Charlton is a member of the Australasian Institute of Geoscientists (“AIG”), and has the appropriate relevant qualifications, experience, competence and independence to be considered an ‘expert’ under the definitions provided in the Valmin Code and a ‘competent person’ as defined in the JORC Code.



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Mrs. Fillmore is a Geologist with over 6 years' experience in the mining industry with a background of both iron ore and base metals.

The report's peer reviewer Dr. Schurmann is a Geologist with over 27 years of experience in exploration geology and project management, being a key driver behind various exploration and mining companies in Africa. Dr. Schurmann is a member of AusIMM, has the appropriate relevant qualifications, experience, competence and independence to be considered an 'expert' under the definitions provided in the Valmin Code and a 'competent person' as defined in the JORC Code.

Salva considers that both the Chillagoe and Mt Morgan projects to be "advanced exploration projects" as applicable to the Valmin Code Clause D20; in that sufficient work has been conducted on a prospect within the tenements where targets have previously been identified that warrant further detailed investigation.

Neither Salva, nor the authors of the report have any material interest in Harvest Metals or Coalbank, or any interest in the properties reviewed in this report. Salva has prepared this report in return for previously agreed commercial rates and the payment of these fees is in no way contingent on the results of this report.

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Tom Charlton – Principal Metals Geologist  
Geologist

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Beverly Fillmore – Senior Metals

Peer Review by:-

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Dr. Louis Schurmann – Principal Metals Geologist



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## Executive Summary

This Independent Experts Report has been prepared by Salva Resources (“Salva”) on behalf of Harvest Metals (Pty) Limited (“Harvest Metals”), a wholly-owned subsidiary of Coalbank Limited (“Coalbank”), to assist with a listing on the Australian Stock Exchange (“ASX”) and associated capital raising. The report is a review of copper and gold prospects held by Harvest Metals within their Mt. Morgan and Chillagoe Tenements.

Harvest Metals has obtained a strategic geological position in the Mt. Morgan and Chillagoe regions of Queensland. Previous exploration has revealed a number of prospective copper and gold deposits that require fairly modest expenditures to advance the level of understanding of the mineralization.

A structured approach to the exploration of the Chillagoe and Mt. Morgan Tenements is likely to improve the geological understanding of the project areas and enable better definition and prioritization of drill targets with very good potential for future success, particularly in areas of known mineralization.

Salva considers the mineral properties in which Harvest Metals has an interest, most notably Leane’s Prospect in Chillagoe, and Discoverer Two Prospect in Mt. Morgan, to largely represent ‘advanced exploration areas’ as applicable to the Valmin Code Clause D20; in that sufficient work has been conducted on a prospect within the tenements where targets have previously been identified that warrant further detailed investigation.

There is very good potential within the Company’s Queensland tenements for the discovery of new copper-gold deposits.

Notwithstanding the speculative nature of exploration, Salva considers that the projects have been acquired on the basis of sound technical merit and are sufficiently prospective for gold, copper and associated minerals to warrant further exploratory work and follow-up assessment of their economic potential.





## Introduction

Salva has been commissioned by Harvest Metals to provide an IER covering their two project areas in Chillagoe and Mt. Morgan.

The principal author of this report is Mr. Thomas Charlton, Principal Metals Geologist at Salva, and also a member of the Geological Society of Australia (GSA). The author has appropriate and relevant qualifications, experience, competence and independence to be considered an 'expert' under the definitions provided in the 'Valmin Code' and as a 'competent person' under the 'JORC Code' definition.

Neither Salva, nor the authors of the report have, or have had any material interest in Harvest Metals, Lodestone Exploration Limited ("Lodestone Exploration"), Lodestone Energy Limited ("Lodestone") or Coalbank.

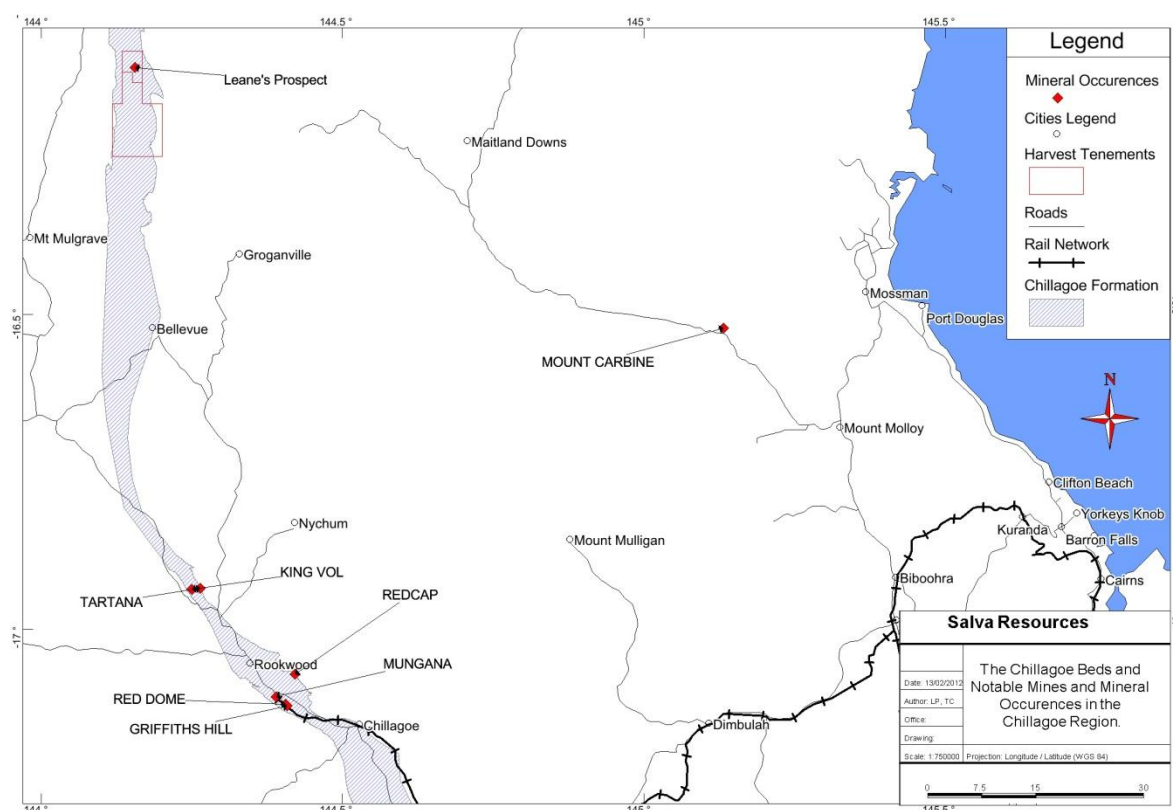
Harvest Metals has an exploration portfolio of 3 mineral exploration project areas (two granted and one application), comprising an aggregate area of 386.14km<sup>2</sup>. The licenses are located in the historically significant Mt. Morgan and Chillagoe regions of Queensland (Figure 1).



**Figure 1: Location Map of Harvest Metals Tenements**



Significantly, the portfolio consists of advanced copper and gold targets which include Leane's Prospect in Chillagoe and Discoverer Two prospect in Mt. Morgan.



**Figure 2: Location Map of Harvest Metals Tenements in Chillagoe relative to the local mines and the Chillagoe Formation.**

The Chillagoe Tenements are situated approximately 100km to the north of the Mungana and Red Dome Copper-Gold mines, within the same geological units of the Chillagoe Formation, and 130km north of the Chillagoe Township in North Queensland (see Figure 2 insert). Exploration is focused on the delineation of porphyry copper-gold, skarn and massive sulphide copper-gold, lead and zinc style deposits similar in style to Mungana and Red Dome. Copper mineralization has been discovered by Lodestone geologists at Leane's Prospect that is similar in mineralization style and occurrence to Mungana and Red Dome. At Leane's, a >200ppm copper-in-soils anomaly much larger in area than the soil anomaly prior to mining at Mungana occurs over a strike length of over 1200m. The majority of Australia has been extensively searched by explorers, and it is very rare these days that a previously undiscovered copper prospect such as Leane's can be found outcropping at the surface.

The Mount Morgan tenement is centered around the old Mount Morgan copper-gold mine in the Mount Morgan Township, near Rockhampton in Central Queensland (see Figure 3 insert). The Mount Morgan Mine commenced operations in 1882 and mining continued through to 1981 when primary production ceased. Over its lifespan, the mine produced approximately 262 tonnes (8,400,000 Oz) of gold, 287,000 tonnes of copper and 37 tonnes of silver (1). Exploration shall be focused around the Discoverer Two Prospect where an intrusive is



Figure 3: Location Map of Harvest Metals Tenements in Mt. Morgan relative to the local mines

known to contain disseminated copper mineralization at a grade of a few hundred ppm Cu, surrounded by an annulus of fracture controlled mineralization grading around 0.2% Cu. A very high grade >500ppm copper-in-soils anomaly occurs over an area of 1300m X 800m.

### The company

Lodestone Exploration was formed in 1996 to explore for gold and base metals projects. In 2009 Lodestone Exploration changed its name to Lodestone Energy Limited (“Lodestone”) to reflect the company’s change in focus from minerals to energy exploration. In 2011 Lodestone changed its name to Coalbank Limited (“Coalbank”) to recognize its strong coal focus. In 2011, following an assessment of the company’s gold and base metals exploration assets, the Board of Coalbank decided to ‘wrap’ their metals projects into a newly formed subsidiary called Harvest Metals (Pty) Limited (“Harvest Metals”). This IER is a key component into a possible decision by the Directors of Coalbank as the whether to spin off Harvest Metals from the parent company.

### Tenure

An expert’s determination of the status of the current ownership and legal standing of the tenements has not been conducted for this report. For issues relating to tenure, Salva Resources has relied upon the information supplied by Harvest Metals.

### Chillagoe



The two permits are situated physically adjacent to one another; EPM 11980 is situated north of EPMA 18325. Harvest Metals owns 100% of these two permits.

EPM 11980 (Limestone Creek) was applied for by Lodestone Exploration in 1997, with the permit granted in June 2005. The permit currently consists of 5 sub-blocks and is 16.5km<sup>2</sup> in area. The permit was granted under Lodestone Exploration and originally consisted of 18 sub-blocks. The tenement does not include any protected areas as defined under the act. The renewal was granted in December 2010 for a term of 3 years until 2<sup>nd</sup> June 2013.

EPMA 18325 (Bald Hills) was applied for by Lodestone Energy in 2009, and the permit has not yet been granted. The permit application consists of 30 sub-blocks and is 98.94km<sup>2</sup> in area. The tenement does not include any protected areas as defined under the act.

### Mount Morgan

EPM 17850 (Mount Morgan Consolidated) was applied for by Lodestone Energy in 2008, with the permit being granted in April 2010. The permit currently consists of 86 sub-blocks and is 270.7km<sup>2</sup> in area. The permit originally consisted of a series of contiguous licenses granted to Lodestone Exploration. The tenement does not include any protected areas as defined under the act. The next renewal date is set for 15<sup>th</sup> July 2012 where 43 sub-blocks will need to be relinquished.

Application has been made to the Department of Employment, Economic Development and Innovation for EPM's 11980 and 17850 to be assigned from Lodestone Energy to Harvest Metals. Upon grant of EPM 11832 an assigning application in favour of Harvest Metals will be made.

### **Exploration Budget Summary**

Salva considers Harvest Metals' aggressive exploration strategy to be sound and technically feasible given the size and prospectively of the landholding. Budgets have been designed covering the initial two years of exploration, and are indicated in the following Table 1:

**Table 1: Two year proposed exploration budget**

<b>Region</b>	<b>\$ Year 1</b>	<b>\$ Year 2</b>	<b>\$ Total</b>
Chillagoe	870,000	1,280,000	\$2,150,000
Mt. Morgan	1,340,000	1,820,000	\$3,160,000
<b>Totals</b>	<b>\$2,210,000</b>	<b>\$3,100,000</b>	<b>\$5,310,000</b>

The progression of each exploration program is subject to exploration results, on-going evaluations and statutory approvals.



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## Chillagoe

### Overview

Exploration is focused on the delineation of porphyry copper-gold, skarn and massive sulphide copper-gold, lead and zinc style deposits within the highly prospective Chillagoe Formation which hosts the Mungana and Red Dome Mines.

Copper mineralization was discovered in 2007 by Lodestone geologists at Leane's Prospect. This copper mineralization is similar in geology and characteristics to both the Mungana and Red Dome Mines 100km to the south, near Chillagoe. A >200ppm copper-in-soils anomaly occurs at Leane's over a strike length exceeding 1200m. This copper anomaly is bigger in size and magnitude than the soil anomaly at Mungana prior to mining.

### Location, Access and Physiography

EPM 11980 is located immediately south of the Palmer River, approximately 100km north of the township of Chillagoe, and 210km north-west of Cairns. The EPM is located on Palmerville Station.

Access to the project site from Cairns is via the 'Mulligan Highway', turnoff via the hamlet of Desailly. The track passes by the old Palmer River Goldfields south of the old abandoned ghost town of Maytown. Due to heavy summer rains, road access is restricted to the dry season.

The project area's physiography varies widely, from flat open plains to weathered rugged limestone hills. Much of the region is covered by lightly timbered open eucalypt woodland and grasses. The limestone supports a distinctive vegetation of vine thickets and softwoods, and in Google Earth these can be seen as a distinct vegetation anomaly.

### Exploration and Mining History

#### Exploration

There has been minimal exploration within the tenement area in the past. Chinese and European gold miners were known to have mined small copper and gold veins within the area in the late 1800's.

The general mineralized region within close proximity to Chillagoe has received most of the exploration since these times, which has defined several small rhyolitic intrusive bodies, alteration zones, breccias, and sporadic evidence of copper and gold mineralization. The permit area has had no modern systematic exploration attention in the past <sup>(25)</sup>.

The nearest reported thorough exploration was conducted by Lamorna Mines (Pty) Ltd who reported a zone of gold mineralization approximately 1km to the east.

From 1967 to 1970, AMAD under the tenure of AP430M completed the first ever post-war exploration program, collecting regional -80# stream sediment samples. They mostly assayed for Cu, Pb and Zn, but failed to identify any anomalous drainages.

From 1970 to 1971, CRA explored the regional area under the tenure of AP738M. Work comprised of panned concentrate sampling for scheelite, rock chip sampling, and soil



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sampling of small copper veins in the Kangaroo Creek and Mountain Creek Drainages. Gold was commonly observed in the panned concentrates, especially in the Sandy Creek area to the east of the current EPM. Due to the low gold price during the 1970's, the source of this gold was not followed up. Regional base metals showed sporadic low order geochemistry except around the Mountain Creek Prospect, (not on the EPM) where soils covering a microgranodiorite stock with accompanying skarn and silicified zones averaged 50ppm molybdenum. Anomalous copper and cobalt was identified within "manganiferous-ferruginous quartzite" in the upper 'Limestone Creek' and 'Looking Glass Bluff' areas; however the source was not identified <sup>(25)</sup>.

From 1981 to 1982, CSR explored the general area under AP2866M. The main focus of their exploration program was for scheelite and was based on the Mittersil Model (scheelite within cherty exhalites). A secondary target was Carlin-style deposits. The company collected panned concentrate and -80# stream sediment samples at only 26 locations. Results however were poor. Stream sediment sample number 145366 returned 88ppm Cu and was the only sample in the survey which was within the drainage of the copper mineralization discovered by Lodestone at Leane's. A weakly anomalous -80# gold sample (Sample number 117982) was reported from the north of CSR's tenement which also drains the northern portion of Harvest Metals EPM 11980 <sup>(25)</sup>.

In 1984 BP held the area adjacent to Leane's Prospect under AP3551 and AP3552 <sup>(28)</sup>. BP engaged in a comprehensive stream sediment sampling program with over 609 samples collected which equates to an average of 1 sample for every 3km<sup>2</sup>. Some 46 rock samples of existing known prospects were collected during this program. No anomalous results were found and BP concluded that the area is "*too remote from the mineralizing intrusives at Chillagoe*" which contradicted their own reports on individual prospects at Mountain Creek, Kangaroo Creek, Red Bluff and Hill 211, Hill 286, and Hill 366, and all of which displayed evidence of mineralizing activity (intrusives, skarns, breccias, quartz stockworks, silicification, etc.).

From 1983 to 1989, Lamorna Mines (Pty) Ltd held the general area surrounding Leane's Prospect under AP3753. The program involved -80# stream sediment sampling, panned concentrate, BLEG ("Bulk Leach Extractable Gold") sampling, rock-chip sampling and surface mapping <sup>(29)</sup>. Lamorna reported an elongate north-northwest trending gold-bearing fault structure with rock chip assays up to 7.2ppm Au and 3.25% Pb. This anomaly in the central north east sector of EPM 11980 was later followed up by Lodestone however was not located.

From 1989 to 1992, Placer held the area under AP5594. A helicopter BLEG sampling program collected 96 samples at an average of 1 sample for every 3km<sup>2</sup>. The best result was 2.4ppb Au in 'Running Creek'. Placer concluded that "*The BLEG outlined an area of elevated gold background, which corresponds with the occurrence of ferruginous cherts, which failed to return anomalous gold values in rock chip sampling*" <sup>(30)</sup>.

From 1992 Dominion Mining held the general license area under EPM 8549. They built on the work done by Placer and collected more stream sediment samples to increase the existing sample density to 1 sample per 1.6km<sup>2</sup>. A broad zone of anomalous results extended from 3-





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5ppb was detected from this program. Thirty six (36) rock chip samples were collected as a follow-up to this program.

From 1996 Niugini Mining held the adjacent area under EPM 10813 and completed a review of past exploration, air photograph and Landsat interpretation, and low level helicopter reconnaissance <sup>(31)</sup>. Exploration budget cuts resulted in the termination of this exploration program.

From 2006 to present Lodestone Energy conducted field-based reconnaissance and in 2007 located previously undiscovered copper-gold mineralization outcropping in an area that was subsequently named Leane's Prospect. The exposure of mineralization is mostly obscured by scree cover, which may in part explain why it has never been discovered by previous prospectors and explorers. It must be noted here that the discovery of surficially exposed, previously undetected copper mineralization in Australia is becoming an increasingly rare event.

Lodestone followed up with a rock chip and soil sampling program in the same year at a line spacing of 200m along the structurally controlled limestone contact. Detailed geological mapping ensued.

### **Mining**

Chinese and Australian alluvial gold miners were known to have worked downstream from Lodestone's tenements in the late 1800's. The Mungana group of old workings were mined between 1888 (when the first mine opened at Girofla) and 1926 when the Chillagoe smelters closed. Historical production from the field was 31,831 tonnes of Pb, 7,907 tonnes of Cu, and 3,229 Moz Ag from 333,591 tonnes of ore <sup>(23)</sup>.

#### **The Red Dome Mine**

The Red Dome mine is located 3km southeast from the Mungana Mine. It was discovered in the early 1970's. The mine was operated as a joint venture between Elders Resources and Niugini Mining and commenced operations as an open cut pit operating from 1986 to 1996. The mine was a porphyry related gold-copper-silver-molybdenum deposit which was responsible for producing in total over 1Moz of gold and 30,000 tonnes of copper.

Kagara Zinc acquired the deposit in 2003 and commenced deep exploration drilling to define additional resources below and along strike from the abandoned open cut pit. In 2009 a resource estimate of 40Mt @ 0.79ppm Au and 0.3% Cu was established at 0.35ppm AuEq cut-off <sup>(23)</sup>.

Both Red Dome and Mungana deposits comprise porphyry intrusions (Carboniferous age), with associated hydrothermal breccias (usually present as caps to the mineralization) hosted by limestones and clastic sediments. Zones of peripheral mineralization and alteration are present as skarns (See Figure 4). Gold mineralisation is present within quartz veining and brecciation zones within a silica/skarn mineral matrix <sup>(24)</sup>.

#### **Mungana Mine**



The Mungana Mine is located 3km northwest of the Red Dome Mine, and 18km west-northwest of the town of Chillagoe. As with Red Dome, the mine was operated by a joint venture between Elders Resources and Niugini Mining and commenced operations as an open cut pit. The mine operated from 1986 to 1996. During this time, the mine produced approximately 15Mt @ 2g/t Au and 0.5% Cu.

The Mungana decline commenced operations in 2006. The deposit currently has a resource of 1.96Mt @ 14.4% Zn, 2.8% Cu, 2.2% Pb, 187 g/t Ag, and 1.14 g/t Au <sup>(24)</sup>. During financial year 2011, a total of 227,365t of high-grade polymetallic ore grading 9.6% Zn, 1.8% Cu and 0.7% Pb was mined from the Mungana underground resource.

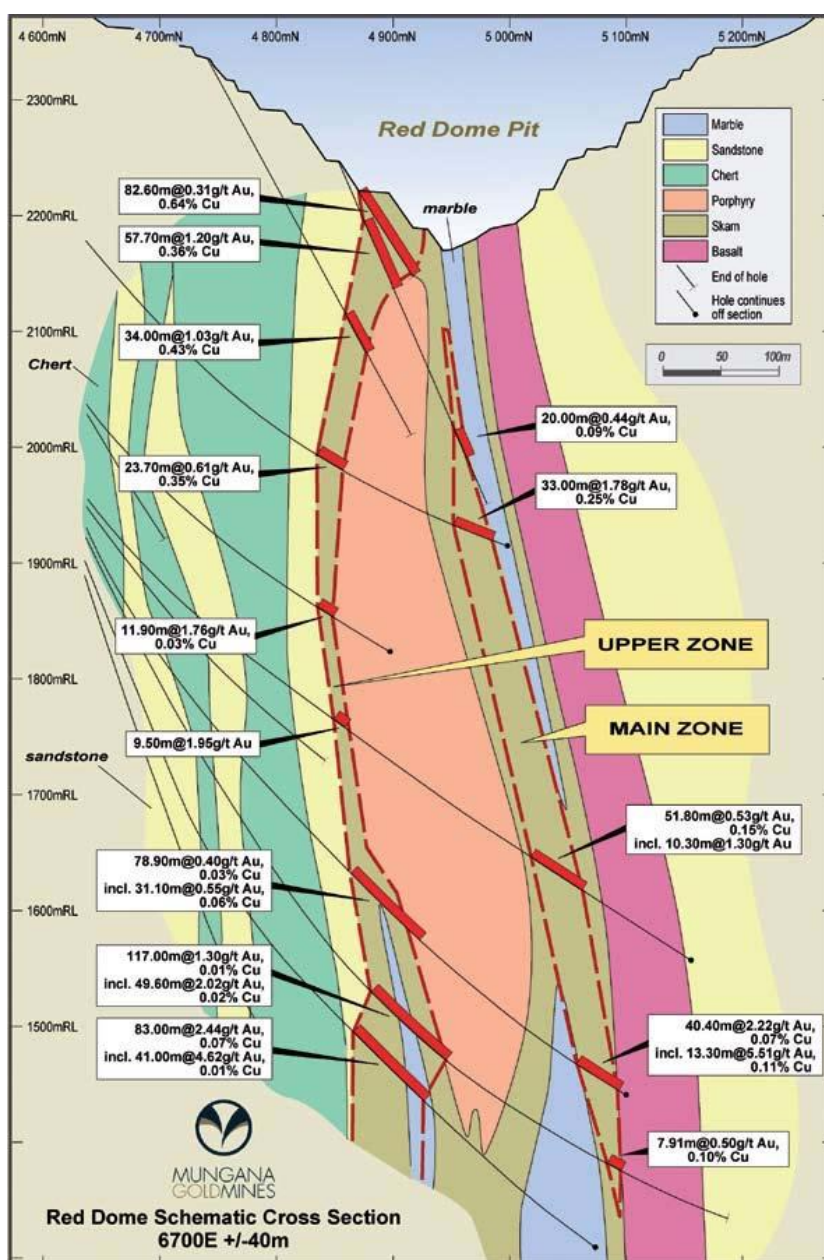


Figure 4: Red Dome Schematic Cross-Section <sup>(23)</sup>





The mine is currently being operated by Kagara Limited, and 'spinoff' company Mungana Goldmines Limited, which listed on the ASX in 2010 is investigating the development of the adjacent Red Dome-Mungana copper-gold resource (combined 2.5 Moz resource). The deposit is classified as a "low sulphidation porphyry zinc-copper-gold skarn deposit developed within carbonate and aluminosilicate host rocks" (Figure 5). The ores are polymetallic and occur within structurally controlled, tabular, steeply south-ward dipping replacement sulphide zones localized at the skarn-altered and faulted contacts between limestone and clastic sediment sequences. A local porphyry intrusion carrying significant gold mineralization has also remobilized an earlier base metals deposit. Extensive tectonic brecciation is common. Some massive sulphide zones are known to be very high grade, with occurrences of several metres at over 30% Zn, 2% Pb, and 5% Cu being common <sup>(24)</sup>. One such intercept was from Drill hole DDH888 from 700.7 to 724.7m: 24m @ 6.1% Cu, 13.4% Zn, 510 g/t Ag, and 1.3 g/t Au <sup>(40)</sup>.

Tectonic brecciation is common throughout the deposit. A strata-bound base metal lode is also present and hosted in limestone cuts across the gold mineralization and is currently being mined by Kagara <sup>(40)</sup>.

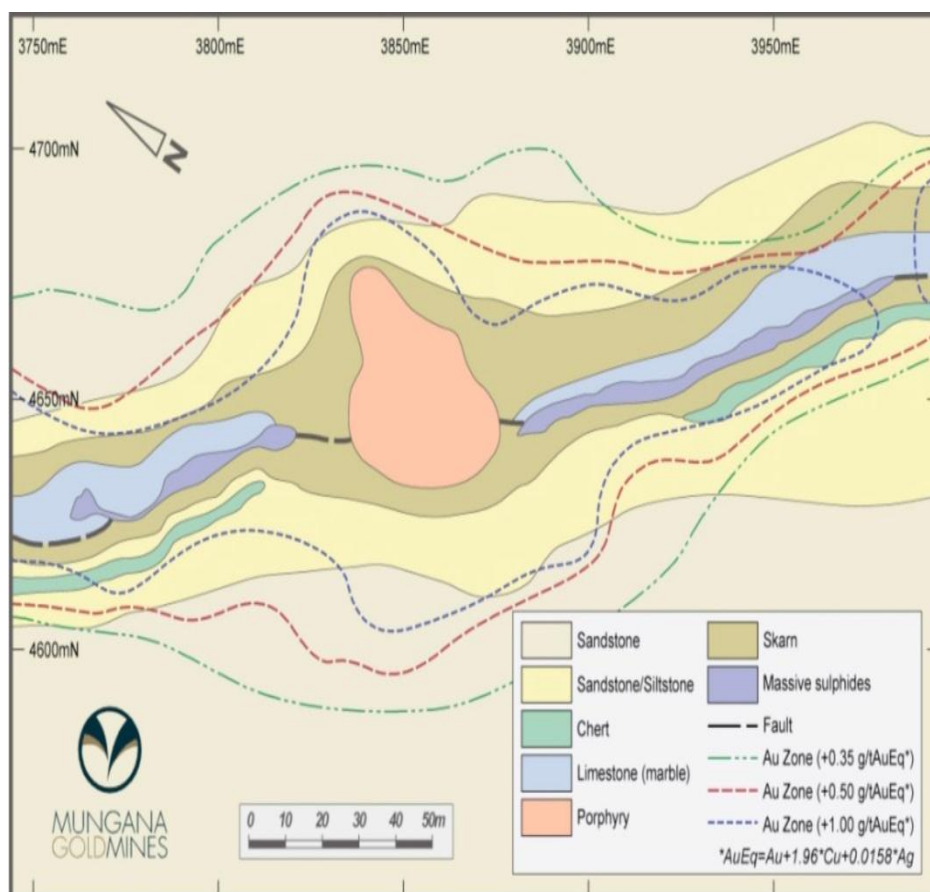


Figure 5: Mungana Mine – Geological plan view <sup>(23)</sup>

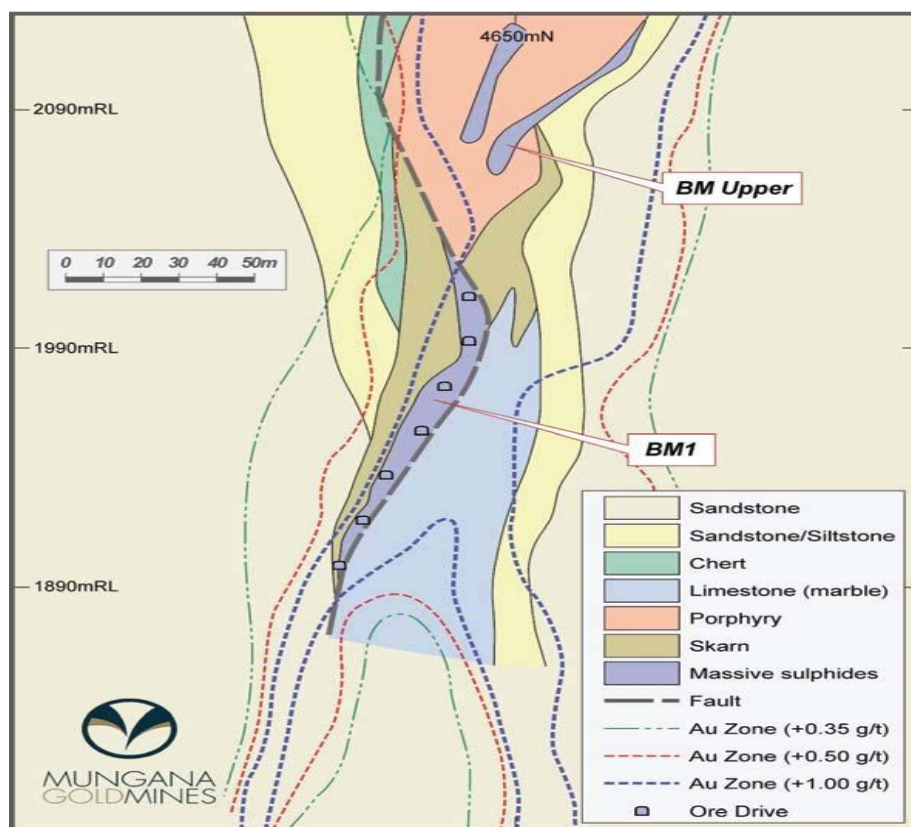


Figure 6: Mungana Schematic cross-section illustrating the geological relationships. Note: BM = Base Metal Zone (23)

Figure 6 depicts a schematic cross-section of Mungana and the main geological relationships. Note the similarities of Mungana to the Red Dome schematic cross-section.

### Mount Garnet

Mount Garnet is situated within the southernmost exposed localities of the Chillagoe Formation, 150km southwest of Cairns. Mining and smelting of copper in the general region commenced in 1898. Copper ore was mined out by 1902. The last lead oxide was produced by 1926.

Kagara purchased the mine from Perilya in 1998. A concentrator was constructed which became the central hub for the treatment of base metal ores in the general region for a 160km radius. The mine is currently on care and maintenance however the remaining resource is 683,000t @ 6% Zn, 0.4% Cu and 13ppm Ag. In FY 2011, a total of 250,000t of polymetallic ore grading 9% Zn, 1.8% Cu, and 0.7% Pb was mined from the Mount Garnet operations <sup>(39)</sup>.

The Mount Garnet Zn-Cu-Ag deposit is hosted by a garnet, pyroxene and magnetite dominated skarn, as a metasomatic replacement of a north-south striking marble lens. The mineralization is dominated by two high-grade shoots of massive Fe-rich sphalerite with minor chalcopyrite. Lower grade breccia zones occur between these shoots and replacement of crinoid stems and coralline fossils by sulphides is common <sup>(39)</sup>. The mineralization at Mount



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Garnet illustrates that ore bodies can occur within the Chillagoe Formation at some distance from the central Chillagoe mines of Red Dome and Mungana.

#### Griffith's Hill

Griffith's Hill is a high-grade copper resource adjacent to the eastern end of the Red Dome pit. The copper zone was initially identified in August 2010 by Kagara's subsidiary Mungana Goldmines Ltd.

An inferred resource of 1.05Mt @ 3.06%Cu, 0.62 g/t Au, and 64 g/t Ag has been established at the contact between the marble and the sandstone <sup>(24)</sup>.

#### King Vol

King Vol is an advanced project owned by Kagara and is currently ready for a start-up of operations in 2012. The deposit is located 25km northwest of Mungana, and only 75km south-southwest of the Limestone Creek Tenements. The ore is hosted within a steeply skarn-altered sequence of limestone and clastic sediments within multiple high-grade zinc-copper-lead lenses. The strike length of the mineralization is over 400m. Current inferred resource is 1.97Mt @ 14%Zn, 1.1%Pb, 0.9%Cu and 43 g/t Ag <sup>(24)</sup>.

#### Redcap / Victoria

An inferred resource of 3.4Mt @ 5.1% Zn, 1% Cu 0.14 g/t Au and 22 g/t Ag has been established for the Victoria ore body. The Victoria main zone extends for over 700m strike and is hosted within a 'multi-phase' garnet-pyroxene-magnetite skarn. Bismuth and molybdenum are commonly at elevated levels <sup>(24)</sup>. The locality of the Redcap and Victoria prospects is indicated in Figure 7.

Significant zinc-lead-copper mineralization has been intersected in magnetite-pyroxene skarn along the Redcap/Morrison's Thrust. The Redcap zone extends for over 1500m along the Redcap Fault and forms a prominent ridge of ferruginous breccia and skarn. No resource has yet been established for Redcap; however one of the best intersections was from hole 1099 comprising 3.64m @ 23.1% Zn, 4.6% Cu, 7.2% Pb and 371 g/t Ag <sup>(24)</sup>.

#### Tartana Mine

The Tartana Copper Mine is a small mine that is currently producing copper ore. The workings are in a 1m wide shear zone. Some diamond drilling has been carried out in the area. A lease application for this area was lodged by Carpentaria Exploration in 1970, renewed in 1974, and transferred to N. Adams in 1986.

Other prospects within the Red Dome and Mungana area include Annie, Girofla, Hookworm, Shannon, Fluorspar, and Lady Jane. The localities of some of these abovementioned prospects and mines are indicated within Figure 7.

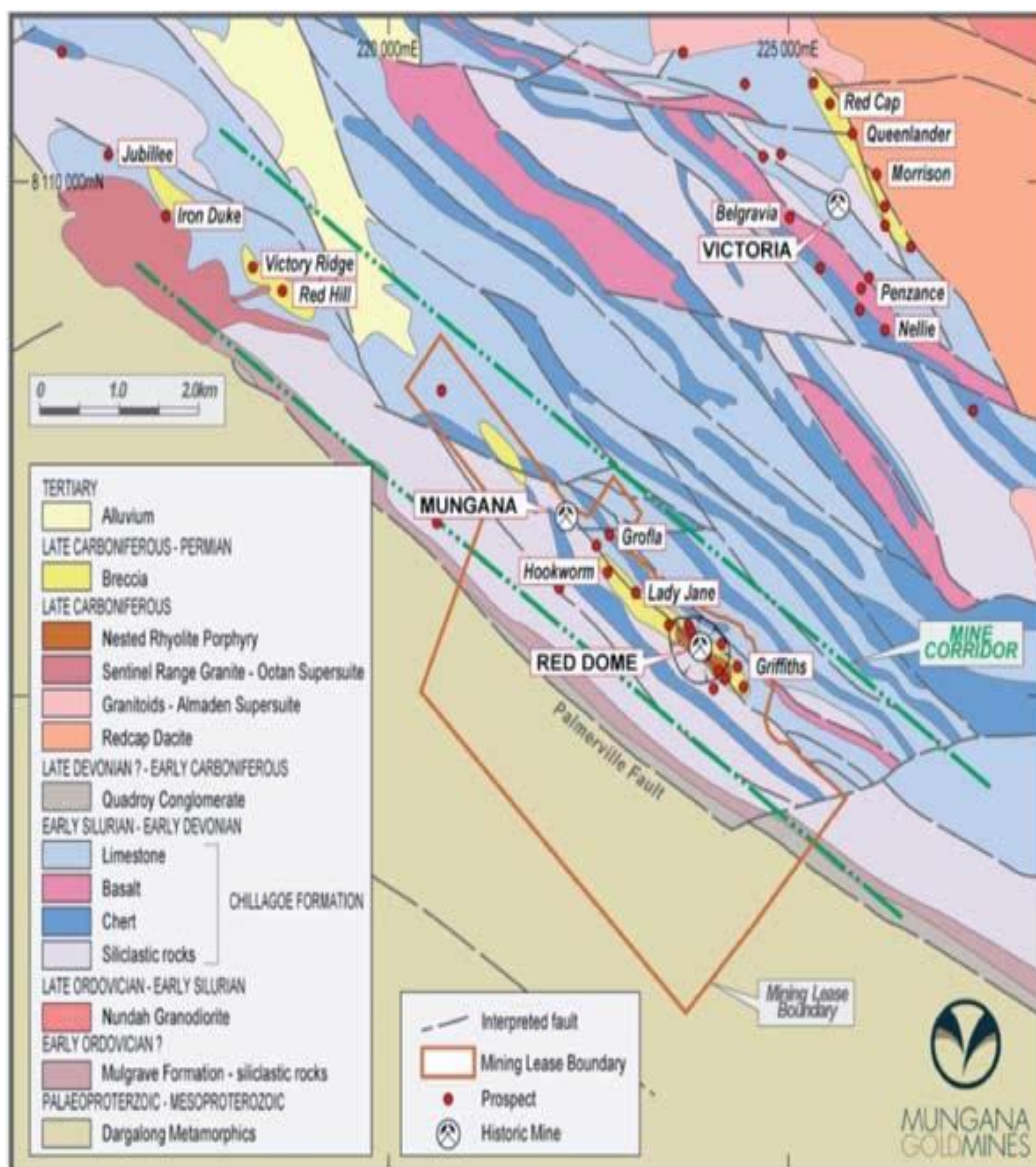


Figure 7: Mungana - Red Dome 'Mine Corridor Geology' (23).

## Geology and Mineralisation

EPM 11980 lies within the Middle Palaeozoic Hodgkinson Province (represented by the Mulgrave, Chillagoe and Hodgkinson Formations) and is separated from the Middle Proterozoic Dargalong Metamorphics to the west by the Palmerville Fault, a major NNW trending structure.

The Siluro-Devonian 'Chillagoe Formation' hosts the most significant mineralization within the Chillagoe area, and this Formation shall be described in more detail here. The Formation comprises intercalated limestone, conglomerate, sandstone, wacke (generally upper units of the Formation) and siltstone, shale, chert, minor mafic volcanics, and basalt (generally lower units of the Formation). Sedimentary breccias are also known to occur. Bedded, locally ferruginous chert occurs as numerous thin units that typically form the crests of ridges and hills.





Extensive thrusting during Late Devonian to Mid Carboniferous deformation events produced steep sub-vertical dips and resulted in significant structural thickening to the formation. The steeply dipping thrust faults trend north-west, sub-parallel to the stratigraphy and the Palmerville Fault. Late Carboniferous to early Permian igneous activity resulted in widespread intrusion of granitic rocks and extrusion of felsic volcanic rocks, plus localized emplacement of high level rhyolitic porphyry stocks in the Chillagoe Region. Mineralization is typically related to this Permo-Carboniferous activity.

Within the general permit area, the Chillagoe Formation trends in a north-north-westerly direction. As with the Mungana and Red Dome Mines, many of the lithological contacts within the Chillagoe Tenements are potentially structural in nature.

The limestone ridges of the Chillagoe Formation can be clearly traced in Google Earth satellite imagery for a strike length of more than 200km from a point roughly 60km to the north of the Limestone Creek tenements through to a point roughly 25km south of Chillagoe.

No systematic modern exploration has been thoroughly carried out over the area, and until Lodestone applied for the tenement it has been essentially under-explored. Lodestone originally embarked on a follow-up reconnaissance program of previous strong rock chips but failed to identify any alteration, mineralization or significant assay results. Lodestone then embarked on a regional rock chip sampling program and located previously undiscovered copper mineralization at Leane's Prospect with rock chip results up to 31.1% Cu.

The principal exploration targets are:-

1. Red Dome and Mungana skarn-style copper-gold-silver-lead-zinc ore bodies situated below mineralized breccia pipes;
2. Buried porphyry copper systems along the highly prospective Chillagoe beds or at depth beneath Leane's Prospect.

Total gold endowment in the Mungana-Red Dome-Griffiths Hill Mine corridor to the south comprising historic production and current resources exceeds 2.8Moz Au <sup>(24)</sup>.

It should be noted that the richly endowed Palmer River alluvial gold workings are situated only 16km to the northeast of the Limestone Creek tenements. Gold was discovered along the Palmer River in 1873, and a gold rush ensued with up to 50,000 people reported to be living in the area at the time. This relatively large goldfield produced a quantity of gold estimated by Denmead (1932) to the end of 1932 to be 71,400kg (2,404,237 Oz Au) of which 3,196kg (103,140 Oz Au) was gold derived from reefs <sup>(41)</sup>.

## Geochemistry

Regional stream sediment samples have been collected by a number of companies, with the majority of stream sediment samples tracking along the general strike of the highly prospective Chillagoe Formation. Only a few stream sediment samples within the company's Chillagoe tenements would be considered anomalous in copper.

A few soil traverses across the tenement area have been collected by previous explorers. These were successful in detecting mild copper anomalism both north and south of Leane's



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along the main mineralized structure; however the anomalous results were never comprehensively followed up. Lodestone was the first company to conduct a thorough soil sampling program within the tenement area. All soils collected within the tenement have been thematically mapped for copper and these are illustrated in Figure 8.

Regional rock chips have been collected by previous explorers within the tenement area however only a few rocks would be considered anomalous.

## Geophysics

Some regional geophysics (aeromagnetic) has been flown in the past by the State Government. At the time of writing, it is believed that no localized geophysical programs have been conducted within the general vicinity.

## Leane's Prospect

### Introduction

Lodestone has discovered copper porphyry-skarn mineralization at Leane's Prospect in North Queensland by soil sampling, mapping and drilling. Leane's has the potential to be a similar porphyry-breccia-skarn geological model to Mungana polymetallic mine near Chillagoe.

### Geology

Regional 'Phase One' reconnaissance in 2006 failed to locate any evidence of mineralization.

In 2007, this work was followed up by the 'Phase Two' soil sampling program which consisted of soil traverses across the north-northwest trending lithologies in search of mineralization associated with structural contacts. This work detected a copper-in-soils anomaly which was followed up by geological mapping which showed that some copper mineralization outcrops as malachite veining along a regional fault that juxtaposes limestone to the west against quartz-muscovite-schist-minor chert and basic volcanic rocks to the east. Mylonitic limestone was observed containing 'wisp's' of copper mineralization.

Phase Three follow-up soil sampling in 2007 at a line spacing of 200m demonstrated that anomalous copper occurs over a strike length of 1200m.

Phase Four in 2008 consisted of closer spaced 50x50m soil sampling and more detailed geological mapping which revealed several hydrothermal breccias (Figure 9), similar in style and occurrence to the breccias observed at the uppermost zones of the Mungana and Red Dome Mines (pre-mining) <sup>(32)</sup>.

Phase Five fieldwork in 2009 revealed that the zone of hydrothermal breccia is linear in outcrop. These breccias post-date the mylonitic limestone and schist along the faulted contact, but probably as re-activation along the original structure. The breccias pinch and swell and range in width from 2 to 40m along the main 700m long outcropping zone. Breccias vary from (a) "monomictic" clast-supported with angular fragments, to (b) "polymictic" matrix-supported "milled" breccias with rounded clasts. The silica flooding of the matrix and the clasts is common in these widest zones, implying a mineralizing heat source at depth, which is most likely to be an intrusive <sup>(32)</sup>.

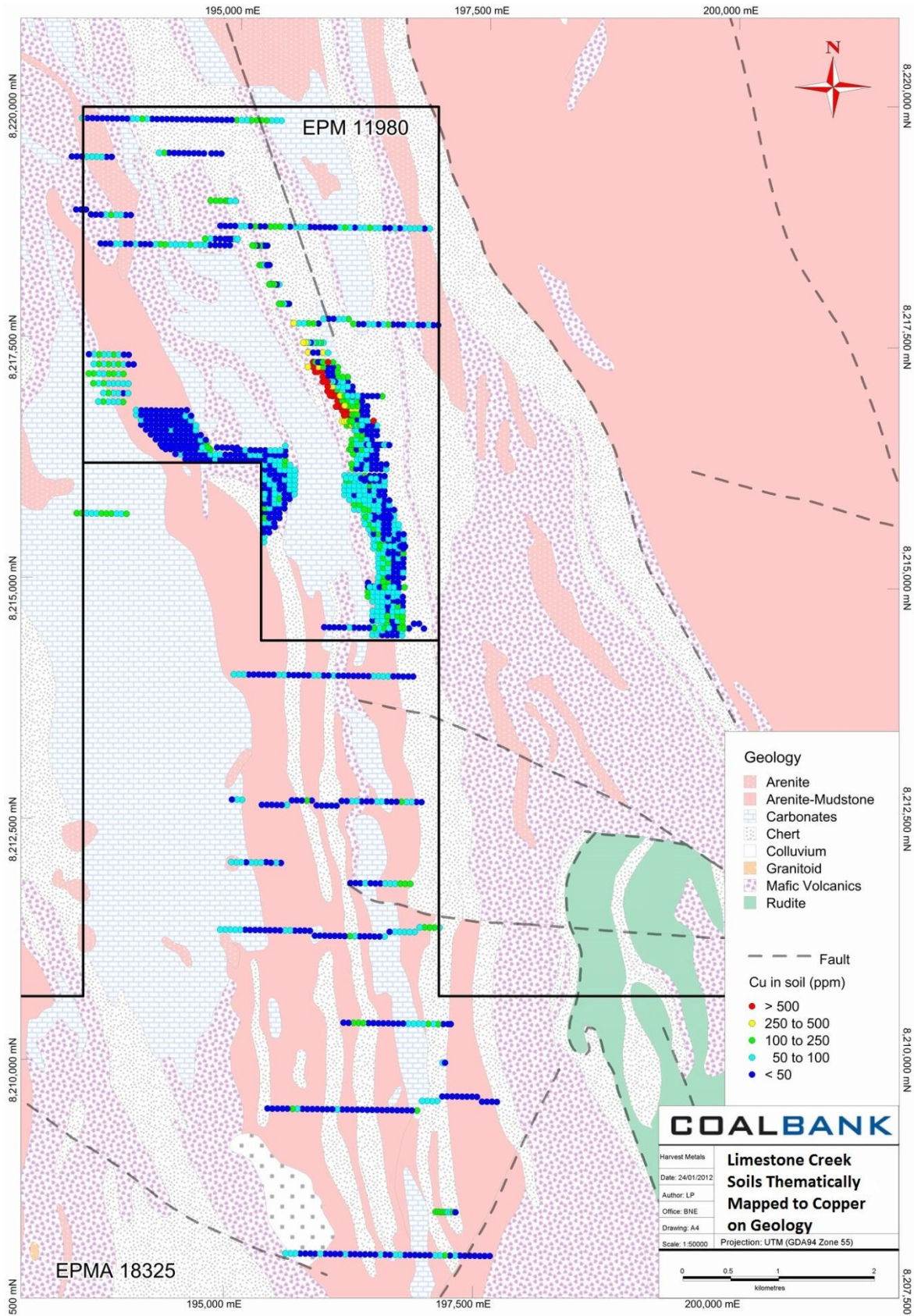


Figure 8: Limestone Creek: All soils thematically mapped to Copper on Geology.





It is interesting to note that the milled breccias (Figure 10) occur in the zones of maximum breccia width, and these zones coincide with the maximum copper-in-soil anomalies. The bulging of the breccia system within the central area suggests the potential for a porphyry system at depth. This bulging and superimposed elevated geochemistry is similar to the geology of the Mungana-style ore bodies along the same Chillagoe Formation units over 100km to the south. At Mungana, the surface exposures of the porphyry plug are so highly acid leached (quartz grains within clay) that they have the appearance of “clay rich sandstones” and are almost un-recognizable.

The limestone has been metamorphosed to marble; such zones of marble tend to outcrop in a generally more subdued fashion. Outcrops of marble are generally good indicators of a heat source (intrusive) at depth.



**Figure 9: Matrix-supported breccia with sub-angular clasts of fine sugary quartz.**

The schists on the eastern side of the mineralized zone only occur as outcrop along the mineralized zone (due to their nature to weather and break apart easily (Nethery, pers. comm.)). High amplitude airborne magnetic intensity signatures suggest that a mafic volcanic unit extends along and parallel further east to this contact.

Phase Six fieldwork returned significant intersections of copper mineralization in six of ten Reverse Circulation (RC) drill holes, details of which are discussed below in the Geochemistry section.

### **Structure**

Intense regional deformation occurred during the Permo-Carboniferous time period and produced a northerly trend with steep to sub-vertical dips. The Chillagoe Formation rocks, up to 9km in width, are situated east of the regional Palmerville Fault.





**Figure 10: Leane's milled breccia with leached sulphidic chalcocite-bearing clasts**

The breccia zone at Leane's extends for 700m along a highly sheared pre-existing mylonitic contact between limestone and schist and can be up to 50m in width. The mylonitic zone within the limestone is generally approximately 10m in width, and extends along the entire length of the zone mapped by Nethery (Pers. Comm.). The mylonite zone occurs as subdued outcrops. Fine malachite veinlets, less than 10mm in width, occur as tiny dilations parallel to and across the mylonitic fabric <sup>(32)</sup>.

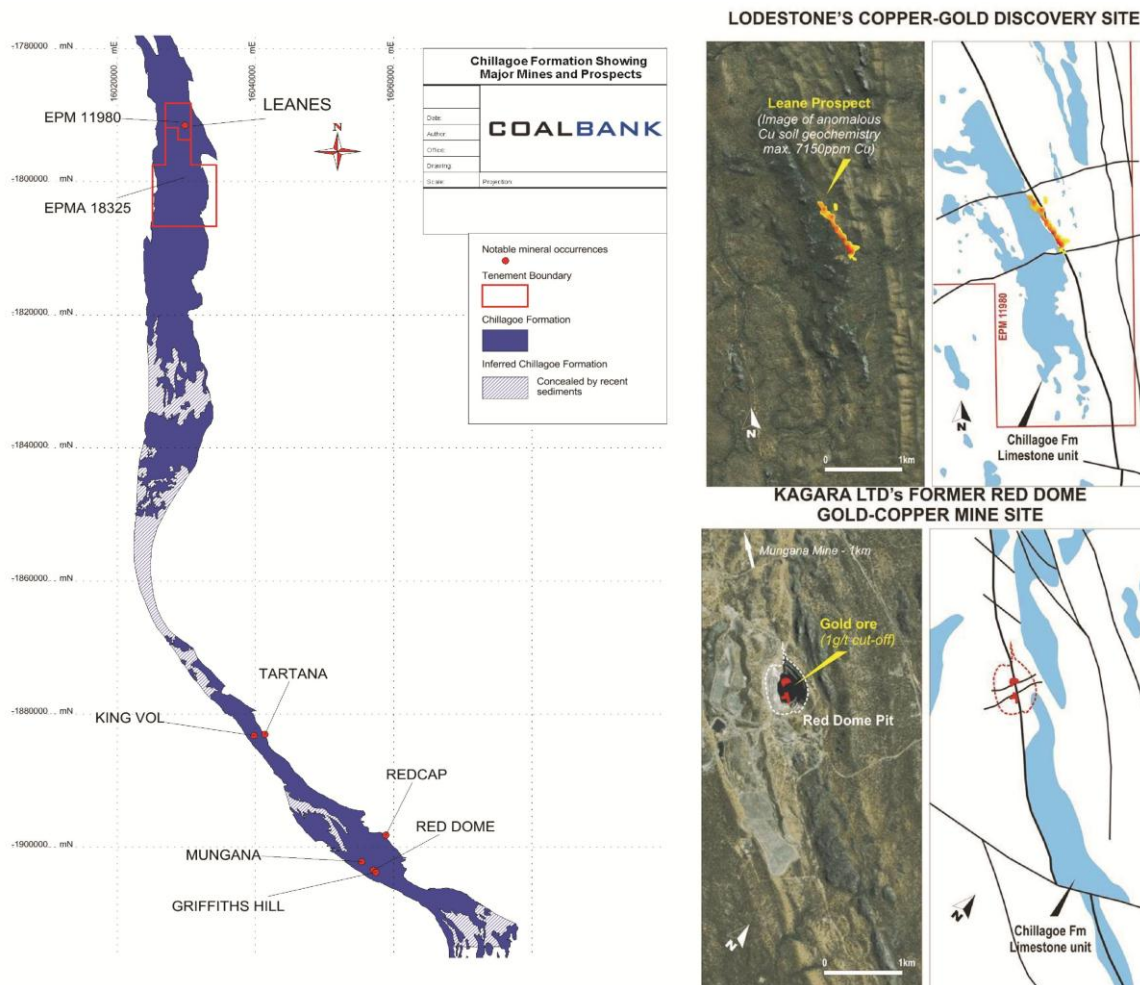
The breccias may be related to the interference between the main north-north-westerly striking mylonite zone and west-north westerly / west-south-westerly striking faults. The interpreted porphyries at depth could have intruded up along zones of dilation caused by the interaction between these three fault systems. The mineralization and associated bulging breccias at Leane's are interpreted to be situated spatially above these interpreted intrusives.

The majority of the lithological contacts at Leane's are structural. The mylonitic fabric consistently dips roughly 70° to the east and strikes in a north-north-westerly direction. This explains why the drill holes (as discussed below) were drilled towards 270° at a 60° dip.

A total of three main structural orientations have been detected through mapping of the Leane's prospect. Figure 11 illustrates the regional occurrence of the Chillagoe Formation and the similarity of Red Dome and Leane's structural settings within the Chillagoe Formation.

### **Geochemistry**

The best exploration results collected by previous explorers reported indicated significant rock chip assays up to 7.2 ppm Au, 3.25% Pb, 2.29% As and 2.4ppm Hg (under A to P 3753M). This was one of the primary reasons why Lodestone acquired the tenement, however unfortunately follow-up sample reconnaissance of the sample site failed to identify any significant results.



**Figure 11: Chillagoe Formation showing major mines and prospects plus comparison of Red Dome and Leane's Lithological / Structural regimes (32).**

In 2007 Lodestone conducted field based reconnaissance and this work located previously undiscovered copper-gold mineralization outcropping at Leane's Prospect. The mineralisation exposure is mostly obscured by scree cover coming off from the main elongate central limestone ridge.

Lodestone followed up with a rock chip and soil sampling program in the same year at a line spacing of 200m along the structurally controlled limestone contact. A total of 201 rock chip and 717 soil samples were collected from east-west traverses which demonstrated that the anomalous copper-in-soils zone (ranging from 200ppm to 15,000ppm) runs along a strike length of 1200m. Nethery (Pers. comm.) has quoted that the copper-in-soils anomaly at Leane's is actually "better" than the copper anomaly at Mungana (which was a 200m X 200m zone of >200ppm Cu. The maximum copper-in-soils value at Mungana was 4000ppm).

The gold-in-soils anomaly at Leane's (which peaks at 25ppb Au) is, however less than the gold-in-soils anomaly at Mungana, which peaks at 938ppb Au. Rock chip analysis and drill testing at Leane's has also returned low gold values, however this does not rule out the potential for gold mineralization at depth.



The best rock-chip results for copper were 31.1%, 23.9%, 5.53%, 3.55%, 1.32%, and 1.29%. Zinc, antimony and molybdenum results were also slightly elevated along the copper-rich zone. The best gold result was only 0.09ppm. A zone of gossanous quartz blows extending possibly along the same structure over 1.6km to the south of Leane's and returned anomalous rock chips up to 0.9ppm Au.

In 2009, airborne reconnaissance using a Robinson R22 mustering helicopter covered the EPM at a low-level line spacing of less than 200m with the aim of spotting any silicified outcrops and landing to sample any outcrops of interest. Some small gold-bearing zones were defined up to 2km to the south of Leane's and 2km to the west. Soil sampling was extended to cover these areas.

Follow up soil sampling in 2009 extended the grid and in-filled selected areas to a 50 X 50m soil spacing. The westernmost limit of each soil line was abruptly cut off by the prominent outcrop of karst limestone, commonly forming low cliffs, and lacking in any soil development. This meant that the western most sample of each soil line was collected above the mineralized zone, giving the appearance after thematically mapping the data of an 'open anomaly' to the west. A 700m long zone along the mineralized contact was noted to consistently exceed over 1000ppm Cu, with the highest value being 7100ppm Cu. See Figure 12 for thematically mapped copper-in-soils at Leane's.

Although gold values at Leane's are low, it is interesting to note that a subdued 500m X 200m >10ppb gold anomaly exists to the south of Leane's that has not been drilled or followed up (the drill hole LRC10 was drilled 200m to the north of this anomaly – see Figure 13). It would be worthwhile to follow up this gold-in-soil anomaly as part of any future exploration program.

In 2010, a 10 hole RC drilling program totaling 492m was designed to test three targets. The main target was the main breccia zone, anomalous rock chip zones and copper-in-soil anomalies at Leane's Prospect, where 8 short holes totaling a combined 412m tested a 500m strike length.

Of these 8 holes, 6 intersected intervals of copper mineralization worth noting. These intervals are exceptionally good for a first pass drilling program. The best intervals are summarized Table 2.

Numerous problems were encountered with the drilling of the breccias as they were consistently water-charged and caving was common. As a result several drill holes were abandoned due to concerns that the hammer and drill string may be lost. These problems were also encountered during the drilling of the breccia zones at both the Mungana and Red Dome deposits. A plot of these drill holes on copper-in-soils is in Figure 12.

### Geophysics

An aeromagnetic survey was carried out across the Limestone Creek tenements. At the time of writing the author did not have access to the data from the Geophysical program. Ground based EM or airborne VTEM (conductivity Geophysics) in conjunction with radiometrics and more detailed aeromagnetics has been recommended for the Leane's prospect.



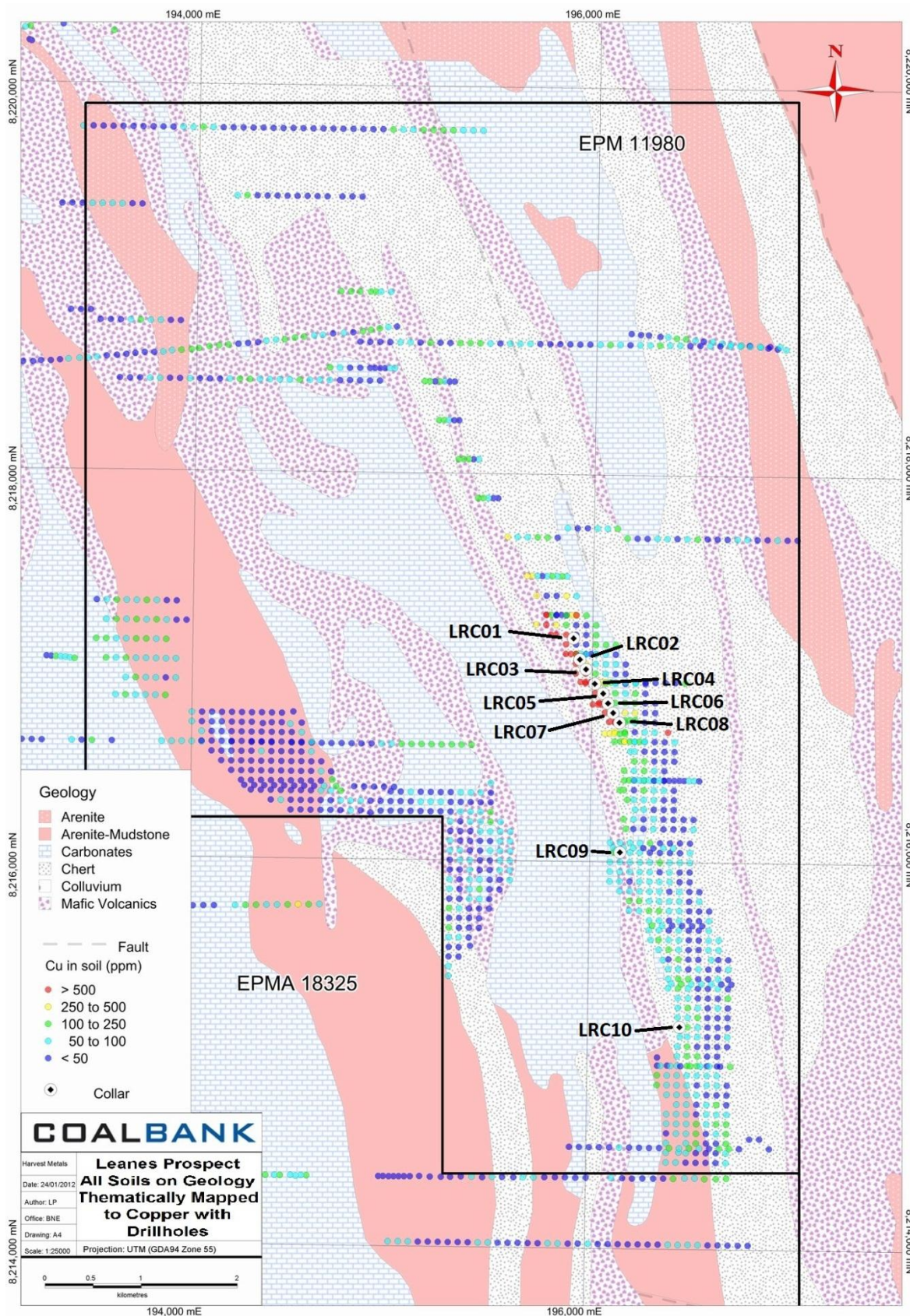


Figure 12: Copper-in-soils at Leane's, geology and drillhole locations



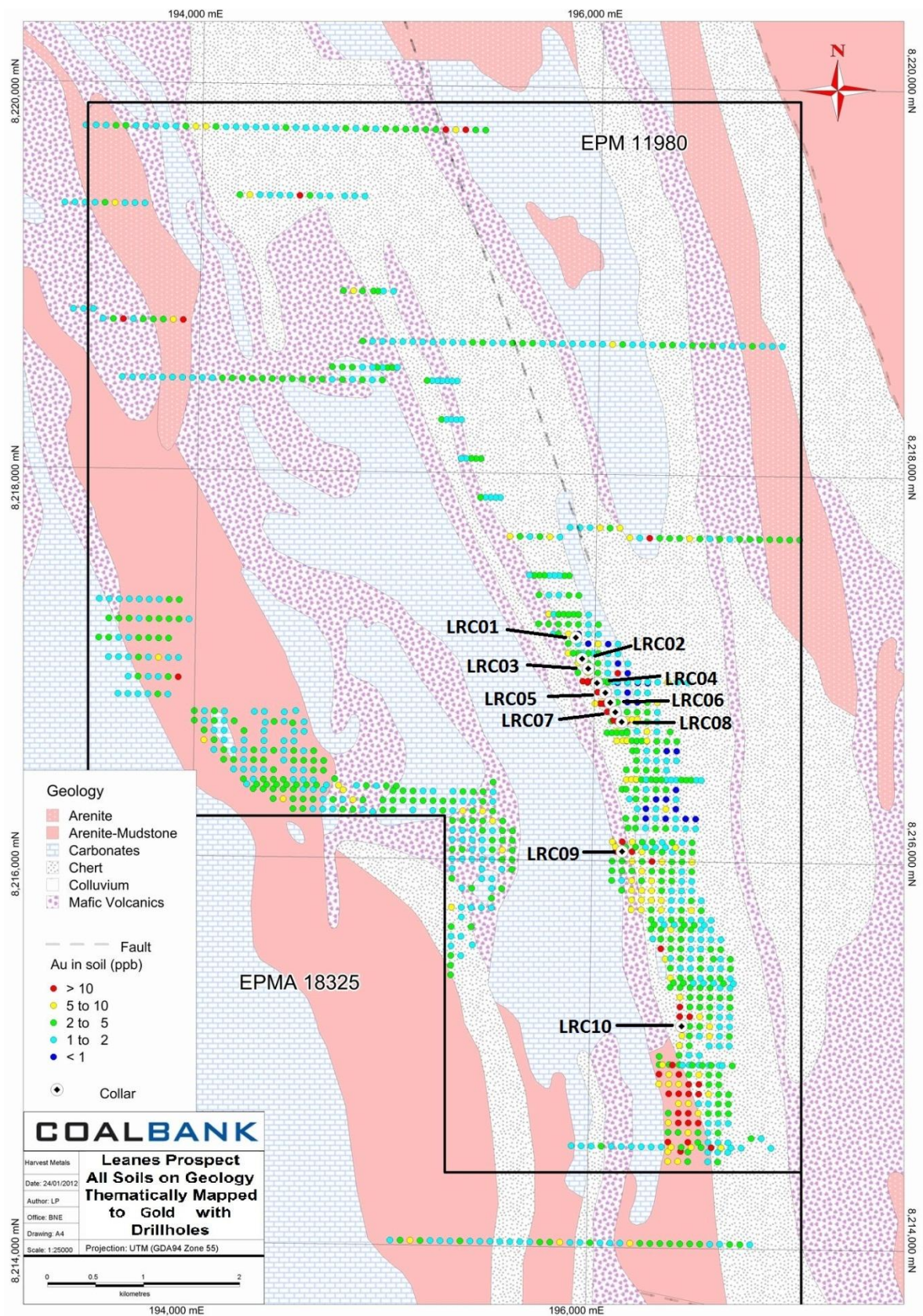


Figure 13: Gold-in-soils at Leane's, geology and drillhole locations



**Table 2: Leane's Drill hole summary table**

Drill hole	Company	Date	Final Depth	Dip	Az (TN)	Best Copper interval	Reason for drilling / comments
LRC01	Lodestone	2010	82	-60°	270°	1m @ 0.0608% Cu	To test surface breccia and soil anomaly. No notable intersections.
LRC02	Lodestone	2010	48	-60°	270°	13m @ 0.31% Cu	To test surface breccia and soil anomaly. Hole terminated in breccia. Excessive water flow and caving.
LRC03	Lodestone	2010	73	-60°	270°	4m @ 0.55% Cu	To test surface breccia and soil anomaly. Breccia zone only 1.5m true width at depth.
LRC04	Lodestone	2010	55	-60°	270°	33m @ 0.49% Cu	To test surface breccia and soil anomaly. Breccia zone around 7m true width. Peak grade of 2m @ 1.1% Cu.
LRC05	Lodestone	2010	37	-60°	270°	3m @ 0.35% Cu	To test surface breccia and soil anomaly. Narrow 1m true width of breccia.
LRC06	Lodestone	2010	58	-60°	270°	9m @ 0.17% Cu	To test surface breccia and soil anomaly. Breccia roughly 6m width.
LRC07	Lodestone	2010	31	-60°	270°	1m @ 0.0319% Cu	To test surface breccia and soil anomaly. Did not reach target mylonitic limestone due to water flow and caving.
LRC08	Lodestone	2010	30	-60°	270°	7m @ 0.27% Cu	To test surface breccia and soil anomaly. Breccia is less than 1m wide.
LRC09	Lodestone	2010	40	-60°	270°	1m @ 0.0369% Cu	To test 82ppb Au-in-soils anomaly. No sign of brecciation or alteration.
LRC10	Lodestone	2010	39.2	-60°	270°	1m @ 0.0197% Cu	To test surficial outcrop of hydrothermal milled breccia with rock chip sample assaying at 0.9ppm Au.

### Mineralization

The mineralization at Leane's consists of malachite veining along what has been interpreted to be a regional NNW-trending regional fault that places limestone to the west against chert and basic volcanics to the east. The outcropping mineralisation is mostly obscured by broken scree and debris adjacent to the outcropping limestone ridge.

The breccia commonly contains minor malachite, cuprite and chalcocite (these are all copper-bearing minerals). In the initial drilling program, the black chalcocite was originally misconstrued as being manganese oxides (pyrolusite).

### Exploration Potential

The exploration potential at Leane's prospect is extremely high. The analogies between Leane's and Mungana are very strong and discussed in point form below:



- A 1200m long >200ppm copper-in-soil anomaly is present at the surface;
- Analyses of surface rock chips have given good copper results;
- It is strongly evident that Leane's represents the uppermost portions of a mineralising system that strikes along the structural contact between limestone and schist;
- Surficial outcrops of hydrothermal breccia that are similar in style and shape to those found at Mungana, Red Dome, Victoria and elsewhere along the Chillagoe Formation;
- Thus far only eight of ten short holes drilled have intersected breccia and display copper grades very similar to the uppermost portions of the well-known Mungana and Red Dome breccia systems;
- Milled breccia imply reworking of the breccia and most likely multiple mineralising events;
- The zone of milled breccia at Mungana was only 20m in width, and at Leane's the zone is roughly the same width;
- The highly elongate dimensions of the porphyry and related mineralisation at Mungana and also Red Dome extend to over 1000m in depth.

The polymetallic grades at Mungana or Red Dome can be at times exceptionally high, 'bonanza' style mineralization. Such grades are usually intercepted at depth and not within the surface breccia zones. Only low levels of copper were found within the surface breccia zones at Mungana and Red Dome. Good exploration potential lies at depth under Leane's Prospect.

#### Recommended Exploration Program

- It is highly recommended that Harvest Metals conducts a VTEM (Electromagnetics) Geophysics programme across both tenements to test for zones of electrical conductivity at depth. Prior to this, if the data is available, previously done electrical conductivity models of the Mungana or Red Dome Deposits should be investigated for the purposes of comparison.
- The VTEM programme should be flown in conjunction with radiometric and more detailed aeromagnetic surveys. Following the VTEM programme, it is highly recommended that a line of 8 X 200m deep RC holes are drilled totalling 1600m, spaced 50m apart and positioned to drill at a dip of 60° west underneath the previous drill holes. This is to test for extensions of the mineralisation at depth (the mineralised window at Mungana is over 500m in depth).
- Since the 'windows' of mineralisation at both Mungana and Red Dome are over 1000m in depth, it is also recommended to step back and drill a 500m deep drill hole underneath the best zone of mineralisation, to test for depth extensions to the mineralisation. It is hoped in this deeper hole that evidence of a porphyry plug may be intersected through either porphyry clasts in the rock or the intersection of the actual porphyry itself.
- The critical sections of all holes where mineralisation is interpreted to be intersected shall be cored in order to obtain maximum geological and structural information.
- Any future drill holes should be tested by down-hole EM Geophysics.
- Extensions of the structure / mineralising zone should be tested both to the south and to the north. The structure continues to the south across Harvest Metals licence application EPMA 18325 "Bald Hills".
- Harvest Metals should also consider reapplying for the "Collaborative Drilling Grant" available from the Department of Minerals and Energy (DME) to assist with the funding of drilling at Leane's.
- The expenditure commitment required for EPM 11980 for year 2012 is \$250,000.





## Bald Hills prospect

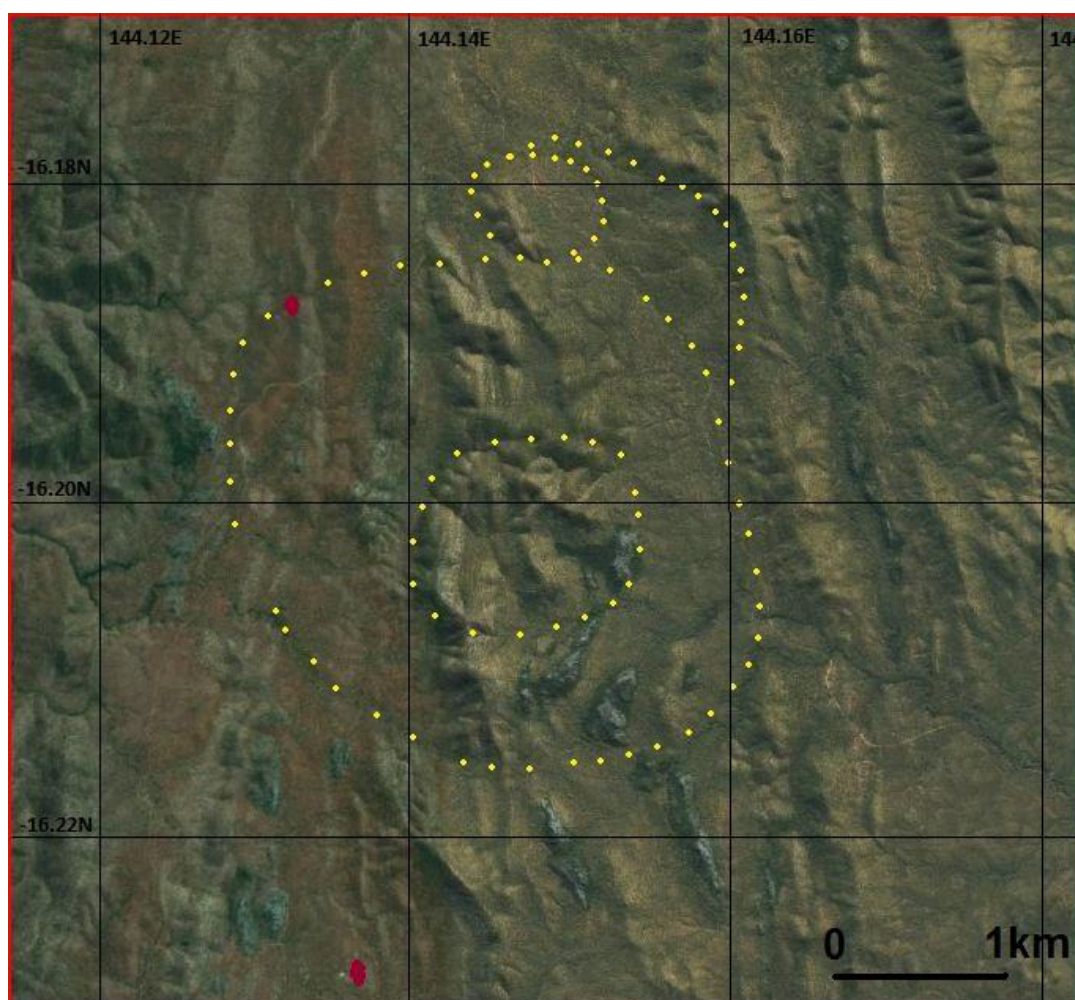
### Introduction

In 2009, a major regional mega-fold was identified in DME radiometric data. Lodestone's senior consultant, John Nethery recognized a potential circular intrusive centre from interpreting both Landsat and Google Earth data. Nethery (32) suggested that Lodestone lodge an application for this area which sits directly south of Leane's Prospect.

### Geology

A 1km wide central raised circular zone is situated within a subdued circular perimeter.

Some northwest trending faults and multiple arcuate circular and radial features are present within proximity to microdiorite plugs. An east-west cross trend of partial magnetite destruction is present that trends through a 4km wide ring structure of magnetic highs within a central subdued zone (refer to Figure 14). Recessive breccia and alteration zones have been located through ground based traversing.



**Figure 14: Bald Hills ring structure evident in Google Earth**

A moderately enhanced total count of U-K-Th is evident in the regional radiometric Landsat remote sensing data. Small abandoned copper workings known as Mountain Creek lies within





this ring structure. These workings will need to be investigated as part of any future exploration program.

### Previous Exploration

Prospect and associated ring structures were delineated by Lodestone. There has been minimal exploration in the past; however some soil lines have been completed by previous explorers across the main intrusive centre. Some modest copper and gold-in-soils values have been recorded. The highest gold rock chip within the area was 0.26ppm Au.

### Exploration Potential

The exploration potential at Bald Hills is good. Thematically mapped copper-in-streams indicates possible extensions to the mineralization from Leane's along the Chillagoe Formation through the Bald Hills tenement and onwards to the south. See Figure 15, which depicts a thematically mapped image of copper in streams generated from open file data which illustrates the clear stream sediment copper anomalism that follows the trend through the license and to the south.



**Figure 15: Copper anomalism - Google Earth illustrating an area anomalous in copper to the south of Bald hills**

Note the area of anomalous copper to the south of Bald Hills.

Also note that the copper-in-streams anomalism around Leane's is actually quite low which implies that Leane's would not have been found through stream sediment sampling alone.

### Recommended Exploration Program

- The Bald Hills EPMA is currently under application, so no work can commence in the next year unless the permit is granted. Once granted, it would be recommended to conduct some ground-based investigations to search for evidence of intrusive activity, alteration, or mineralisation. Some soil traverses should be conducted across the



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circular structure at 50m spacing on lines 500m apart. The southerly continuation of the structural contact from Leane's should be mapped.

- It is recommended that -80# soil samples should be collected along soil lines of 50 X 250m across this structure. These soil lines should continue at 500m spacing to the most southerly portions of the EPM to cover the zone of copper anomalism in streams on the southern border of the licence.
- Soil lines spaced at 250m apart across the main structure would minimise the chances of missing any potential narrow breccia zones.
- The zone of anomalous copper in streams to the south of Bald Hills should be followed up by a series of 250m spaced soil lines with soils at 50m intervals along these lines.

### Exploration Strategy and Budget

It is planned that the following activities will be carried out over the Chillagoe Tenements.

Initially a full data compilation shall be conducted on both Chillagoe Tenements. The data from previous exploration reports across the general area shall be assessed and recommendations made for possible follow up exploratory work.

Geophysics has not yet been flown over the Chillagoe projects. It is hereby proposed that Harvest Metals fly VTEM, magnetics and radiometric surveys across the Chillagoe Tenements. Ground-based EM (Electro-Magnetic) work at Leane's Prospect should be considered to detect potential conductors below the surface. These above-mentioned techniques are proposed after the rights have been granted.

A follow-up RC drilling program of 7 X 160m drill holes stepped back 30m and drilling directly under the previous best intersections of mineralization (holes LRC02 – LRC08) should be conducted at Leane's. By stepping back 30m to the east, these holes should intersect points directly 50m below the previous mineralized intersects. If cavities within the rock are intersected as per the original program in 2009 then diamond holes should be considered and budgeted for.

As part of this program, two further deeper 240m exploratory holes should also be drilled by stepping back 60m east from the existing line. These holes should intersect at a point 100m below the previous best intersections. It is recommended that these deeper holes be diamond cored from 60m to final depth to gain a better understanding of the lithologies present.

This program should have a total combined meterage of 1,600m.

The exploration program for Year Two will ultimately depend upon the possible granting of Bald Hills (EPM 18325), and also the results of the Year One program and may be revised or varied in accordance with either those results and/or the granting of the EPM.

Should Bald Hills EPM 18325 be granted then regional soil sampling lines should be conducted across this tenement. The cost of these lines has not been budgeted since the tenement has not yet been granted.

A total budget of \$2.15 million for the Chillagoe Tenements are proposed by Harvest Metals for the next two years, to be broken down in Table 3 as follows:



<b>Proposed Expenditure within the Chillagoe Projects</b>			
<b>Activity</b>	<b>\$ Year 1</b>	<b>\$ Year 2</b>	<b>\$ Total</b>
Compilation and assessment of previous exploration data	50,000	NA	50,000
Remote Sensing	10,000	10,000	20,000
Geophysical surveying and interpretation	70,000	30,000	100,000
Geochemistry	150,000	300,000	450,000
Reverse Circulation Drilling	150,000	350,000	500,000
Diamond Drilling	100,000	200,000	300,000
Geological Salaries and Consultancy charges	200,000	200,000	400,000
Field costs	100,000	150,000	250,000
Tenure and administration	40,000	40,000	80,000
<b>TOTAL</b>	<b>870,000</b>	<b>1,280,000</b>	<b>2,150,000</b>

**Table 3: Proposed Expenditure within the Chillagoe Projects**

## **Mount Morgan**

### **Overview**

Harvest Metals has one exploration permit (EPM 17850) in the Mount Morgan area, centred around the highly prospective old Mount Morgan Gold Mine. The general area has been extensively explored under a number of tenements since 1996 through Harvest Metals parent company Lodestone Exploration Limited. Un-prospective portions of these tenements have since been relinquished and the tenements including the most prospective targets have since been consolidated under one EPM. Exploration is focused on the delineation of porphyry copper-molybdenum, skarn and volcanogenic massive sulphide (VMS) copper-gold, lead and zinc style deposits.

Gold mineralization was discovered in the famous Mount Morgan area in 1865 by local prospectors. The Mount Morgan mine commenced operations in 1882.

Harvest Metals has six major prospects within the one EPM.

The 'flagship' Mt. Morgan prospect 'Discoverer Two' has a >500ppm copper-in-soil anomaly over an area of 1300m X 800m. The prospect was discovered in 1968, however insufficient exploratory work has been done in the past, with the majority of exploratory holes being too short at under 120m depth. A low-grade copper-bearing porphyry stock is present with an



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annulus of fracture controlled copper mineralization in the country host rock. The presence of limestone in the area implies that skarn potential could be high.

### **Location, Access and Physiography**

EPM 17850 is located in Central Eastern Queensland, approximately 25km south-southwest of the major provincial city of Rockhampton. The tenement completely encompasses the old mining town of Mount Morgan. Access from Rockhampton is a short drive southwest along the Burnett Highway, which passes through the western part of the tenement 8km to the north of Mount Morgan. A network of sealed and unsealed roads servicing the rural population can be used to access each of the tenement areas. Access to the eastern portion of the tenement and the Discoverer Two prospect is along the sealed 'Struck Oil Road', which turns off the Burnett Highway 4km north of Mount Morgan.

The area is favorably located close to regional electricity; rail and port infrastructure and access to personnel can be from either Rockhampton or Mount Morgan.

Most of the project area is freehold or leasehold land. It is mainly light timbered, cattle country, selectively cleared with small pockets of cultivation and horticulture. Approximately two-thirds of the terrain is flat or undulating, and the remainder fairly rugged.

### **Exploration and Mining History**

#### **Exploration**

Previous exploration under the current tenure include: Geopeko, Consolidated Zinc, RGC (Renison Goldfields), Getty Oil, BHP, CRA, Goldfields Exploration Limited, Hunter Resources, Pasmaenco, Poseidon, Newcrest, and Eagle Mining.

From 1968 to 1979, Geopeko conducted a major regional exploration program looking for Mount Morgan VMS, porphyry copper, or skarn style deposits. They collected extensive stream sediment samples, soil samples, rock samples and conducted drilling programs on the many prospects that they delineated from their exploratory work.

From the mid to late 1980's, Goldfields Exploration explored the region with exploration focusing on the Morganite Prospect, Thomases Gossan, Short Cut and Hill Climb Prospects.

Exploration rights of the general tenement area were granted to Hunter Resources in 1989, with the formation of a joint venture with Poseidon Exploration Limited in 1991. Poseidon took control of the management of the permit and conducted a combined follow-up stream sediment sampling, rock chip sampling and geological mapping program. An aeromagnetic and radiometric survey was flown, images from which are presented in this report as Figures 17, 18, 21 and 22. Poseidon withdrew from the JV in 1993.

From October 1993, Newcrest Mining entered into a new JV with Hunter Resources and took control of the management of the tenement. Exploration activities included regional geological mapping, with the emphasis placed on old historical workings, intrusives, and studies of the alteration patterns. Work concentrated around the 'Discoverer Two (Struck Oil)' and 'Ironstone' prospects. Reconnaissance geochemical sampling of selected areas



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highlighted during regional mapping was conducted. In year two of the JV, ground magnetic and geochemical sampling was carried out at the Discoverer Two and Ironstone prospects.

In 1996, Newcrest withdrew from the project and the joint venture reverted to Eagle Mining Corporation. Eagle Mining conducted reviews and compilations of data collected by previous explorers and collected rock, soil and stream sediment samples. They did not drill any portion of their permit and in 1999 they concluded from poor results that the tenement '*does not fit into the current exploration strategy*' and relinquished the ground.

In June 1997, a total of six applications were lodged by Lodestone Exploration over the general area, five of which were granted in 2000. From the year 2000, Lodestone has extensively explored these tenements, and in 2007, the company consolidated these permits into one EPM application for ease of tenement administration. Initial exploration by Lodestone focused on the south-south eastern extension to the mine corridor. In 2007 the company flew VTEM over selected prospects and discovered some previously unknown conductive anomalies (discussed in further detail below).

### **Mining**

Innumerable old small workings (too numerous to discuss in this report) are present within the Mount Morgan area; the majority of these are old, exhausted and currently inactive. A small portion of workings in the general area were mined for copper, however the majority of these workings which followed veins containing gold, were mined early last century.

Mining activity began in the Mount Morgan district in 1865 with the discovery of the Crocodile Creek alluvials. By 1869 Chinese workers were said to be working alluvial ground on the Dee River tributaries, Mundic Creek and Linda Gully in the vicinity of Mount Morgan.

Gold from the Mount Victoria Group was derived from basal Jurassic-aged pebbly sandstones. The payable formation was 8ft thick and carried from 6 to 70 dwt Au with average crushings of 1 ounce per tonne.

### **Dee Copper Mines**

William Mackinlay discovered the Dee Copper Mines in 1870 and may have discovered Mt Morgan some ten years later although the discovery of Mount Morgan is credited to Edwin Morgan in 1882. Activity in the area increased and Moonmera (1885), Clanricarde (1890) and Mount Victoria field (~1890) were discovered.

The Dee Copper Mines recorded production of 205 tonnes of Cu from 1800 tonnes of ore mined in the period 1876-1877. The ore is confined to a series of northeast trending fractures less than 5ft thick and mined down to 200ft in places <sup>(37)</sup>.

### **Clanricarde Mine**

The gold-bearing reef at Clanricarde Mine varied from several inches to several feet thick striking northeast dipping steeply to the southeast. It was mined to a depth of 92 feet over a distance of approximately 250 feet. Total production from the Clanricarde is recorded as 12 tonnes of ore producing 7 ounces of dwt Au <sup>(37)</sup>.





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## Mount Morgan Mine

The Mount Morgan Mine was one of the world's largest gold mines, with the original resource prior to the commencement of mining in 1882 being 52Mt @ 5.9g/t Au and 0.72% Cu).

The mine moved underground in 1906 and started producing gold and copper from its blast furnace in the same year. During a pay dispute in 1927, the workers set fire to the heavily timbered underground workings, and the mine was deliberately flooded to control the fire. As a consequence, the underground mine closed and the company went into voluntary liquidation. In 1929, 'Mount Morgan Limited' was formed, the open cut mine opened in 1932, and the mine continued operating until mine closure in 1981. A CIP plant commenced operations in 1982 to recover gold grading at 1ppm from the mine tailings, and this plant ceased production in 1990 having produced 449,441.3 oz Au.

It must be noted that the underground resource at Mount Morgan has not been completely exhausted.

The supergene enriched surface oxide cap at the commencement of mining in 1882 was high grade at 24ppm gold. Over nearly 100 years of production, the mine produced in total 9.4Moz Au and 360,000t Cu. Total value of gold extracted at the current gold price of US\$1750/oz is US\$16.5 Billion. Total value of copper extracted at the current LME quoted copper price of US\$7631 would be US\$2.7 Billion (total combined in-ground value US\$19.2 Billion). Minor amounts of silver and zinc were also extracted during mining.

## **Geology and Mineralisation**

EPM 17850 is situated in the Calliope Terrane, the stratigraphy of which is summarised in Table 4. The host sequence in the Mount Morgan area comprises Lower to Middle Devonian volcano-sedimentary rocks of the Capella Creek Group and Late Devonian co-genetic sub-volcanic granitoid intrusives ascribed to the Mount Morgan Tonalite. To the west, andesitic volcanics and sediments of the Mount Hoopbound Formation unconformably overlie these units.

The Capella Creek Group sequence consists of low potassium rhyolitic volcanic rocks, subaqueous pyroclastic flows and local exhalites and sediments. It is divided into the basal Mount Dick Beds, central Mount Warner Volcanics (including footwall andesites, the banded mine sequence, rhyolitic volcanics, jaspers and the hanging wall sequence of rhyolitic volcanics, jasper and limestone) and the Raspberry Creek Formation. The strata in the general Mount Morgan area typically dip at low angles eastwards <sup>(34)</sup>.

The oldest rocks in tenement are the Middle Devonian Capella Creek Beds. These comprise a lower intermediate sequence, a middle acid sequence, and an upper intermediate sequence.

The lower intermediate sequence, the Lower Capella Creek Beds, consists mainly of intermediate tuffs with minor interbedded limestone, quartz feldspar porphyry, feldspar porphyry and acid lithic tuff. This unit is only exposed in the 'Struck Oil' area east of Mount Morgan. North of the 'Struck Oil Fault' is a large mass of undifferentiated intermediate volcanic rocks considered to be part of the Capella Creek Beds <sup>(2)</sup>.



**Table 4: Stratigraphy of the Calliope Terrain**

Era	Formation	Lithologies
Jurassic	Precipice Sandstone (Razorback Beds)	Sandstone, siltstone
Permian	Bouldercombe Igneous Complex	Granodiorite to gabbro
Late Devonian	Mt Morgan Trondhjemite Mt Hoopbound Formation	Biotite-hornblende trondhjemite, quartz diorite, gabbro Andesitic to dacitic lavas, volcaniclastics and sediments
Middle Devonian	Capella Creek Group Raspberry Creek Formation Ginger Creek Member Mt Warner Volcanics Hanging-wall Sequence Banded Mine Sequence Silicified Rhyolite Sequence Footwall Sequence Mt Dick Beds Sedimentary Sequence Lava units	Andesite lavas and sediments, minor limestone Acid lavas and volcaniclastics  Acid volcaniclastics Jaspers and siliceous sediments Acid lavas and siliceous sediments Andesitic volcaniclastics  Siltstone and sandstone Andesitic, dacitic and rhyolitic lavas
Early Devonian	Mt Holly Beds	Acid lavas and sediments, limestones

The middle acid sequence, the Moongan Rhyolite Member, consists mainly of quartz-feldspar porphyry and feldspar porphyry, banded rhyolite, and some acid tuff. This unit is best exposed along the Dee Range south of Station Creek.

The upper intermediate sequence, the Walmount Beds, consists of intermediate tuffs with some impure limestone <sup>(2)</sup>.

The Capella Creek Group of rocks are surrounded and intruded extensively in the area by the Mount Morgan Tonalite, a complex heterogeneous plutonic complex, containing noritic gabbro, diorite, quartz diorite, trondhjemite, granite and alaskite, and other small intrusions of diorite, quartz diorite, quartz gabbro and porphyry. These rocks are part of the Mount Morgan Trondhjemite that forms the largest intrusions to the south and east of the Mount Morgan Mine. Mineralization in the Mount Morgan deposit occurs in the Mount Warner Volcanics within a transgressive porphyry body related to the Capella Creek Tonalite <sup>(34)</sup>.

The entire stratigraphic sequence was folded and faulted during the Permian along northwest trending axes. The key regional feature is the northwest trending Gracemere Anticline that separates two middle-Upper Devonian successor basins: the Raspberry Creek Formation to the East and the Mount Hoopbound Formation and younger rocks to the west. Dips on the flanks of the anticline are moderate and relatively consistent, while at the core of the anticline, the dips are somewhat more complex. There is abundant vertical block faulting within the Permian to Triassic intrusions, associated with that tectonic activity, and this activity has been responsible for some of the later mineralization in the region.



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More recently there has been some conjecture as to the placement of the rhyolites in the area: *“The GSQ map shows it as intrusive rhyolite, but RGC geologists regarded it as part of the Mount Warner Volcanics. Many drill holes show a complex interleaving of rhyolite and andesitic volcanics, with the andesite extending well beyond the southern limit of mapped andesitic volcanics. There is a possibility that the GSQ geologists are right and the rhyolite is intrusive. However, if this is the case, the rhyolite has been a very irregular high-level intrusion into the andesitic sequence prior to emplacement of the tonalite, not a post-tonalite feature. Alternatively, the volcanics could be bimodal, and represent interfingering of rhyolite with more intermediate to mafic volcanic”* (Arnold, 2005).

Mount Morgan ranked as Australia’s premier VMS deposit. The deposit had two main orebodies: the ‘Main Pipe Orebody’ of massive pyrite-silica, and the ‘Sugarloaf Ore body’ of siliceous stringer mineralization carrying less than 10% sulphides.

Thin stratabound horizons of sphalerite occur on the Main Pipe Ore body’s south-east flank, and stratabound iron sulphides were discovered 650 metres further south. These separate ore bodies were named ‘Carpark’ and ‘Slagheap’.

### Geochemistry

The open file geochemical data (stream sediment samples, soil samples, rock samples and drill hole samples) for the central Queensland region (compiled by Terra Search) is available from the Queensland Government. The soils component of this data has been thematically mapped and displayed in Figure 16. Note the relative intensity of the Discoverer Two copper anomaly.

This image highlights the intensity of the copper-in-soils anomaly at the Discoverer Two prospect relative to the relatively lower copper geochemistry elsewhere.

Not all the previous geochemical exploration data is present and this will need to be compiled and added to the database by Harvest Metals at a later date. The data for Station Prospect, Moongan, Midas, Hamilton West and Morganite will need to be compiled prior to the commencement of any future exploration program at these prospects. Some, but not all data from the Discoverer Two (Struck Oil) prospect has been compiled.

### Geophysics

Pasminco conducted regional magnetic and radiometric surveys over the Mount Morgan region in 2002. Two useful images generated from this survey are illustrated in Figures 17 (Magnetics vertical derivative), and 19 (Thorium 45c). In Figure 17, the interpreted magnetic lows within the tenement area have been highlighted by green outlines. The magnetic low is situated within a broader magnetic high around the Mount Morgan Mine workings is clearly visible. This low was most likely caused by the alteration and destruction of magnetite within the host rocks during the main mineralizing phase. Other similar style magnetic lows situated within magnetic highs are present within the tenement area, and these will need to be followed up as part of any future exploration program. One such low within a broad high exists within the eastern portions of the encircled Hamilton West prospect area along the main ‘mine corridor’. This low shares some similarities to the lows at Mount Morgan.



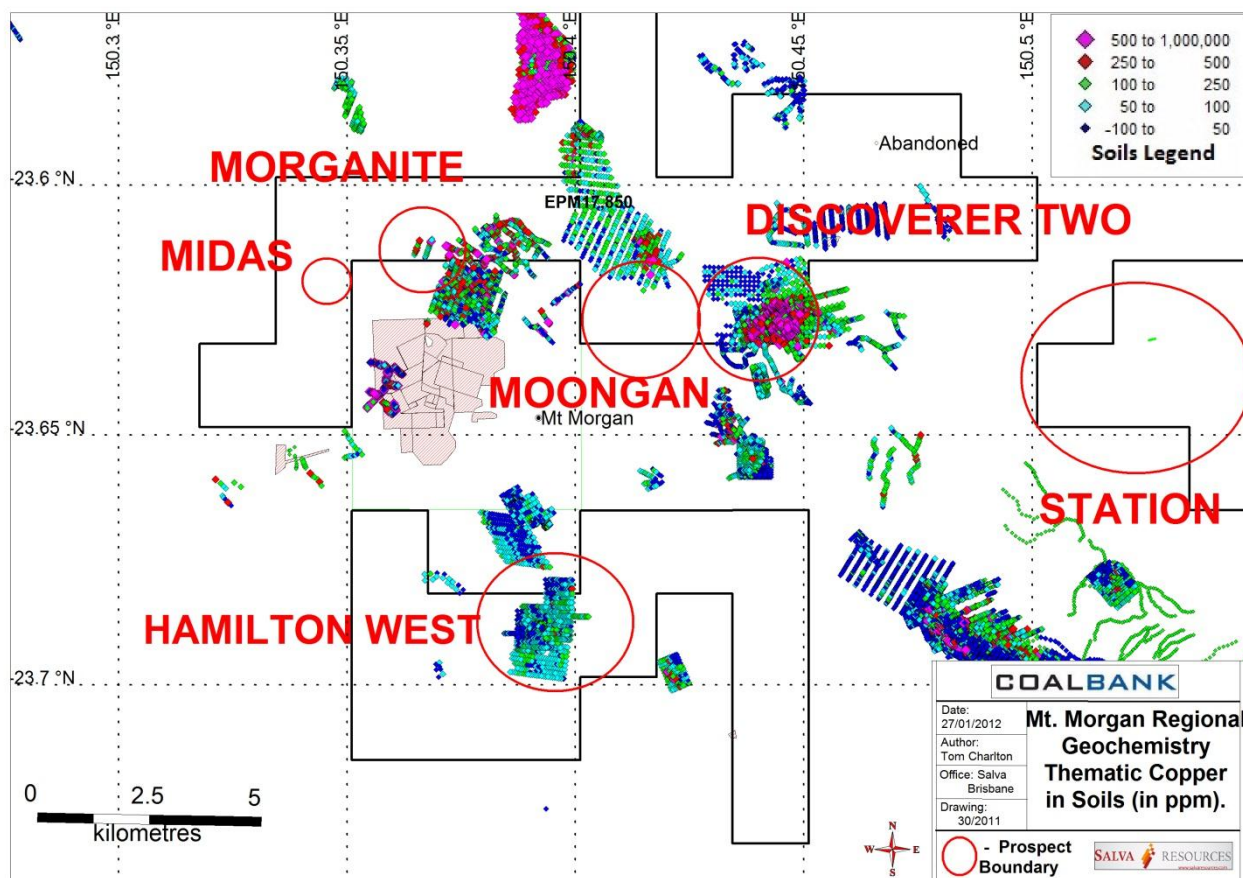
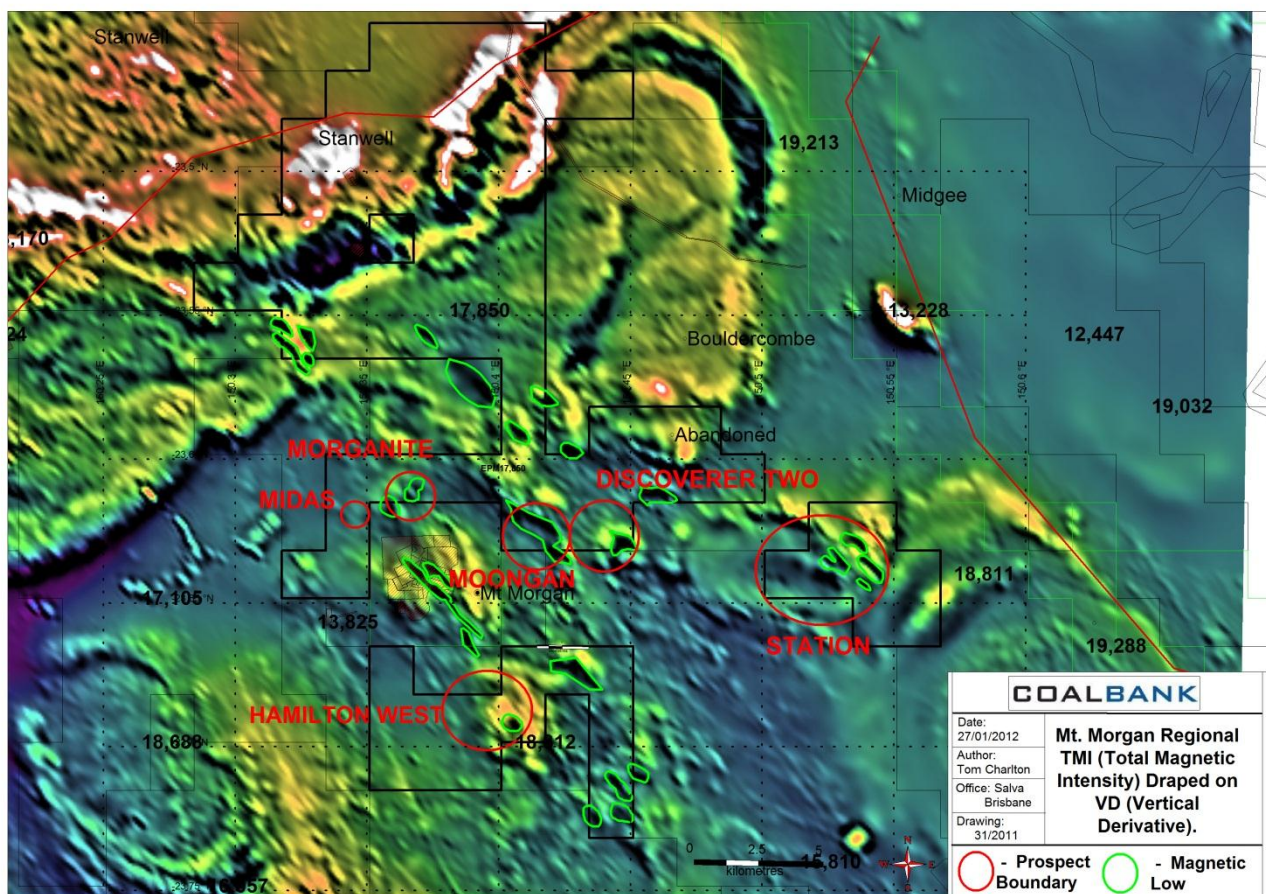


Figure 16: Open File Regional Soil Geochemistry Thematic Map to Copper. Note the six main prospects considered by Harvest Metals have been circled.

Figure 17 also illustrates a broad zone most likely related to magnetite destruction during an alteration event exists at the Morganite prospect. The Moonmerra prospect (not on the tenement and situated roughly 5km north-northwest of the Moongan prospect), contains numerous copper workings, a broad high magnitude copper-in-soil anomaly, and is also associated with a large magnetic low feature. The northern portion of the Moonmerra prospect may extend onto EPM 17850.

A pronounced magnetic low also exists within the Discoverer Two prospect area. A >500ppm copper-in-soil anomaly superimposes nearly perfectly on top of the magnetic low. More detailed views of the various anomalies at Discoverer Two are illustrated in Figures 20, 21, 22 and 23.

Approximately 6.5km north-northwest of Morganite, along the main Mount Morgan Mine corridor, another broad magnetic high exists within a group of four elongate magnetic lows exist. These four lows have been circled by green lines on the map and warrant further follow up. Some copper highs in the stream sediment data also exist in this area. This area has never been designated as a 'prospect' in the past, however this area should be considered for follow-up in the near future.



**Figure 17: Mount Morgan Geophysics – Interpreted Magnetic Lows on Total Magnetic Intensity on Vertical Derivative flown by Pasmaico in 2002. The Mount Morgan mine is situated between Hamilton West and Morganite (white = high, black = low).**

In Figure 18, the Thorium 45c anomalism generally highlights formational highs in the northwest of the tenement however a pronounced Thorium 45c radiometric high is present at the Discoverer Two prospect and clearly visible in the image. The interpreted Thorium 45c highs within the tenement area have been highlighted by yellow circles. A Thorium 45c high (crossing over the tenement boundary) is also present in the western portions of the Station prospect, and this high will need to be followed up at some stage in the future. Radiometric techniques can only detect radioactivity within the top few centimeters of soil which explains why no strong radiometric anomaly is visible at the Mount Morgan mine, since the old open cut pit has been mined out and filled with water.

Lodestone’s JV partner BHP flew Tempest Geophysics in 2002 covering the Mount Morgan mine area and the southern portions of the tenement (most of these southern portions have since been relinquished). The Mount Morgan mine area, Hamilton West prospect, Moongan, Midas and Morganite areas were covered by this Geophysical program.

Lodestone flew VTEM in 2007 and a number of VTEM anomalies were detected, including a VTEM high at the Discoverer Two prospect.



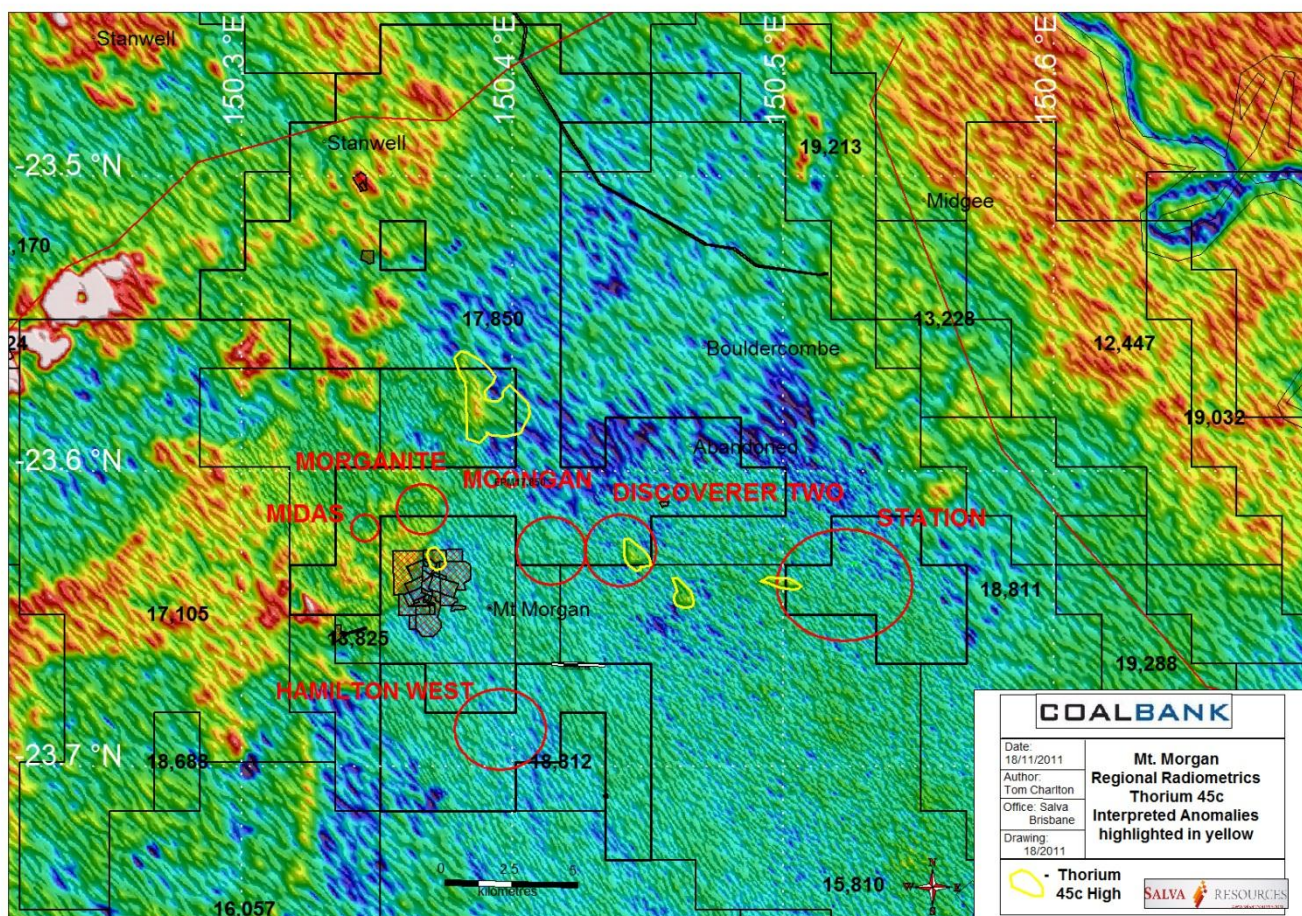


Figure 18: Mount Morgan Geophysics - Radiometrics Thorium 45c flown by Pasminco in 2002. The spectral colours indicate the relative magnitude of radiometric anomalism, with white being the highest and dark blue the lowest.

## Discoverer Two Prospect

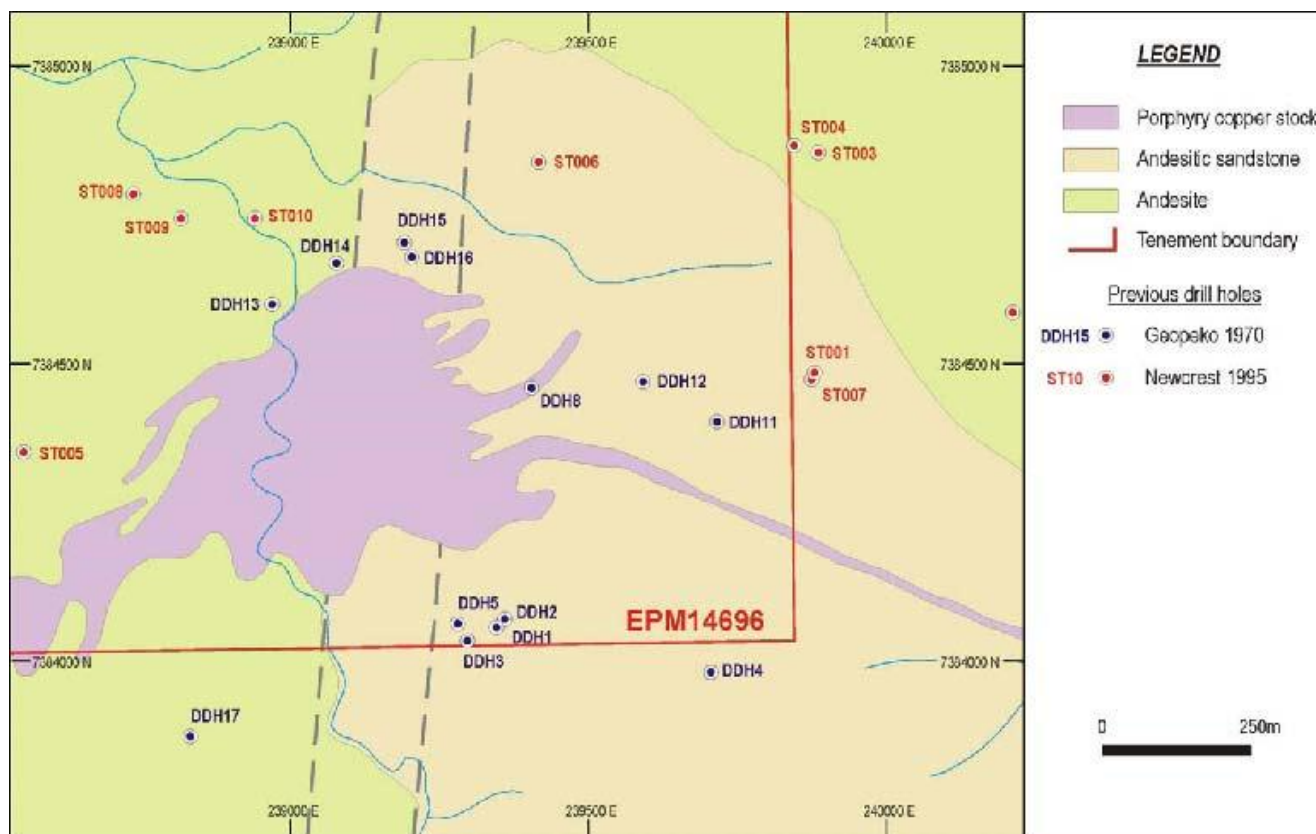
### Introduction

The Discoverer Two prospect has also been known in the past as the 'Struck Oil' prospect, and is located approximately 8km east-northeast of the Mount Morgan Gold Mine. The main target is copper-molybdenum skarn style mineralization.

The prospect is considered to be Harvest Metal's 'flagship' prospect in the Mount Morgan area.

### Geology

The general absence of rock outcrop in the area inhibits surface mapping, however a broad understanding of the geology of the prospect has been attained from previous drilling programs (see Figure 19 for a simplified surficial Geological map of the Discoverer Two prospect).



**Figure 19: Discoverer Two – Geology and Previous Drill hole Locations**

The area lies approximately 1.5km east of the Mount Morgan Granite – Trondhjemite mass within a sequence of quartz porphyries and Devonian conglomerates, sandstones and siltstones. These sediments generally strike north-northwest to south-southeast and can be traced along strike to the Mount Warner area. Numerous limestone lenses containing coral fossils are known to occur within the sequence.

At the Discoverer Two prospect, a lower level formation, the Charcoal Gully Andesite (andesite/andesitic tuff) unit is overlain by an upper level formation known as the Morgan’s Gully Sediments (tuffaceous sedimentary units) <sup>(3)</sup>.

The Permian 'Struck Oil' intrusive porphyry copper stock intrudes the central portions of the prospect, has near surface dimensions of approximately 1000 X 300m, and was the main source of the mineralising fluids. This complex granodiorite intrusive contains disseminated copper mineralization at a low grade of a few hundred ppm copper, surrounded by an annulus of fracture controlled mineralization grading from 0.1 to 1% Cu (averaging approximately 0.2%). Mineralization consists of chalcopyrite and molybdenite in veins and fractures in association with quartz, pyrite and minor magnetite.

The intrusive does not outcrop, however from the limited information available the stock appears to be fairly homogenous <sup>(3)</sup>.

Compositionally, the intrusive consists of plagioclase, quartz and chlorite. The quartz and plagioclase are sometimes weakly porphyritic but more commonly the intrusive is





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equigranular in mineral size. The plagioclase is commonly altered to sericite with associated calcite. Towards the stock margin, the chlorite is partially altered to biotite <sup>(3)</sup>.

Granodiorite porphyry dykes are common within the general vicinity of the intrusion, their most likely source being the central 'Struck Oil' intrusive. Later stage dykes of microdioritic texture and composition frequently intrude these sediments and intrusives. It is unknown whether these later stage dykes were associated with any mineralizing event.

Evidence of contact metamorphism- surrounding the intrusive has been noted in a previous report however this has not been discussed in detail. Three main alteration zones occur as 'haloes' out from the central intrusive:

a) The 'K (Potassium)-Feldspar zone'. This zone of alteration is largely confined to the central intrusive.

b) The 'biotite zone'. This zone encircles the periphery of the central granodiorite porphyry in a variably 120m wide halo (varies from 30m to 240m). The fine grained biotite has partially replaced the chlorite and hornblende.

c) The 'epidote zone' encircles the more centralized biotite zone in a variably 150m wide halo of alteration. This zone is controlled by its distance from the stock. The epidotization is pervasive and has replaced most of the minerals with no particular preference to rock type or minerals. Pyrite occurs in a massive form in close association with epidotization and as a vein phase which post-dates the massive pyrite phase. Zones of massive pyrite are represented on the surface by gossans which are anomalous in iron, (remobilized) copper, tungsten and silver. These bodies are usually small, discontinuous with no economic potential.

### Structure

Faulting is very common within the general area, with the two most important faults being the 'Mount Warner shear' trending N-NW to the west of the stock and the 'Struck Oil fault system'. North of the Struck Oil Stock, the 1km wide 'Struck Oil fault system' separates a complex sequence of acid and intermediate volcanics.

The complex Mount Warner shear zone forms the boundary between the Charcoal Gully Andesite and the younger acid volcanics of the Moongan Corridor sequence. A major anticline (the Gracemere Anticline) and syncline with north-south striking fold axes occurs just east of the Struck Oil Stock within Middle Devonian andesite and andesitic tuff <sup>(2)</sup>. Locally the folding is gentle with dips usually around 20-30°.

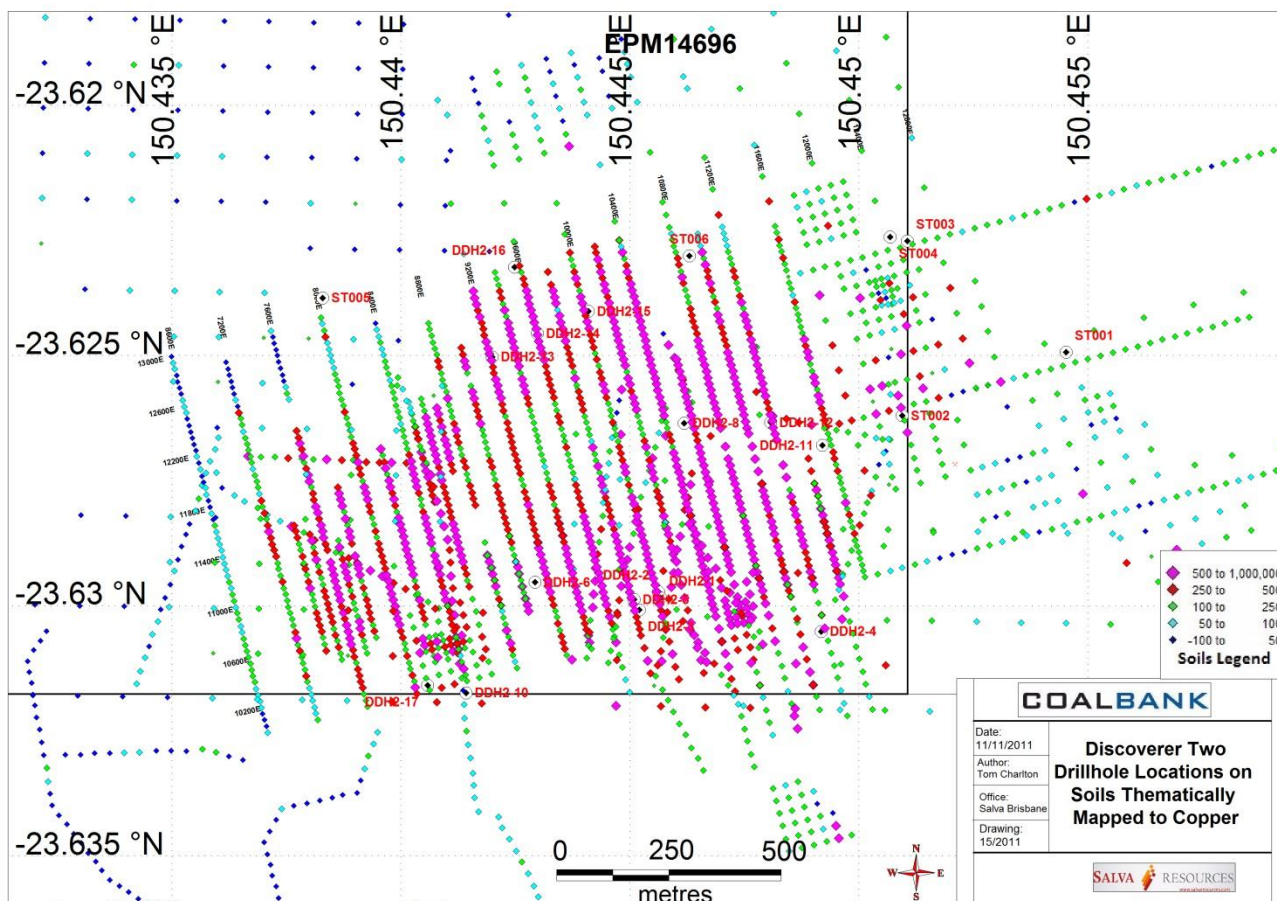
The prospect and intrusive appears to be at the junction of, and on-strike from, a structure trending east-northeast from Mount Morgan, and another north-west trending known copper bearing structure. The eastern side of the area is bounded by the Mount Warner shear zone.

All faulting and folding is believed to have occurred prior to the emplacement of the Struck Oil Granodiorite Porphyry which was emplaced fairly passively as no up-doming or local contortion of the bedding was known to occur <sup>(3)</sup>.



## Geochemistry

The prospect was located by Geopeko in 1968 by stream sediment sampling, and subsequently followed up by soil geochemistry. A thematic map to copper of this soil geochemistry is presented in Figure 20.



**Figure 20: Thematic map of the copper-in-soils at the Discoverer Two prospect.**

From 1968-1969, geochemical sampling using a Proline soil auger was undertaken over the entire grid, with samples being taken at a depth of 5-6 feet where possible. The samples were analyzed for copper and molybdenum and defined a broad and anomalous >500ppm copper in soil anomaly 1300m X 800m, which is orders of magnitude above regional background levels of 10ppm. Within the central portions of the soil anomaly is a lower grade 300 X 500m 85 to 499ppm copper zone which represents the central lower grade portions of the intrusion.

Molybdenum highs are associated with this copper anomaly. A 'halo' type distribution for both the copper and molybdenum corresponds closely with the lithological contact between the intrusive and the encompassing host rocks.

As was common in the late 60's and early 70's, gold was not analyzed as part of this soil auger program, due to the low fixed price of gold at the time.



Geopeko immediately followed up these good soil results with brief drilling programs, commencing in 1968. Exploration originally included 47 drill holes, 34 by Geopeko and 12 by Newcrest. Another company 'Mines Exploration Limited' drilled within the vicinity in 1966. Holes vary from 37m to 462m deep. Please refer to Table 5 for a more detailed summary of these holes. Note that the construction of this table will need further updating and co-ordinate spatial validation in the future.

Newcrest's primary focus within the area (as reported within their EPM 6010 Belgamba Annual Report) was for "near surface bulk tonnage low grade gold deposits of >5Moz". The previous Newcrest drill holes were following 'conceptual' gold, arsenic and zinc anomalies peripheral to the main copper zones of mineralisation, and also magnetic highs. Newcrest geologists' logic behind this is not clear, however it can be assumed from their reports that they were looking for gold at Struck Oil, since gold is known to occur in the area, and they were not intentionally drilling the copper targets. Their drill holes are mostly encircling the Geopeko holes and outside the main zone of copper mineralization. Hence the lack of any good copper results by Newcrest have not downgraded the prospect.

As a result of the current investigation, it was found that Geopeko holes DDH2-5 and DDH2-12 exist at the Queensland Government Core Library in Mount Morgan. DDH2-12 (462.4m) has 66 core trays and DDH2-5 (306.9m) has 6 core trays. DDH2-12 is actually the closest hole to the VTEM anomaly and was reported to have low Cu / Mo mineralization the entire length of the hole from 0-462m. It is highly recommended that these holes be visited by company staff for inspection, and if possible, these holes be re-assayed for gold and checked for copper and molybdenum/rhenium. It has been recommended to assay for Rhenium since the rare metal is known to commonly substitute for molybdenum in the mineral molybdenite in porphyry related copper-molybdenum deposits.

Newcrest reported that the original Geopeko core was stored in the 'Gold Room' warehouse near the current mine lease area. Newcrest re-assayed the original Geopeko core (Holes DDH2-2,3,4,5,6,8,11,12,13,14,15 and 16 for gold and reported that no significant gold assays were reported. The maximum gold value recorded was 1.5m @ 0.22ppm Au (only 3 of the 397 samples assayed >0.1 ppm Au).

**Table 5: Discoverer Two – Drill hole summary table**

Drillhole	Company	Date	Final Depth	AMG_E	AMG_N	AMG Az	Dip	Best Cu interval	Reason for drilling
DA1	ME Pty Ltd	1966							Test of contact zone anomaly
DDH2-1	Geopeko	1968	62.2	239371	7384030	351	-45		Test geochemical anomaly - abandoned
DDH2-2	Geopeko	1968	363.6	239367	7384044	351	-50		Re-drill
DDH2-3	Geopeko	1969	209.4	239322	7384004		-90		
DDH2-4	Geopeko	1969	167.8	239728	7383947		-90		
DDH2-5	Geopeko	1969	306.9	239310	7384027	298	-45		
DDH2-6	Geopeko	1969	240.2	239092	7384072	80	-60		
DDH2-7	Geopeko						-90		?No records anywhere?
DDH2-8	Geopeko	1970	219.2	239430	7384427		-90		
DDH2-9	Geopeko						-90		
DDH2-10	Geopeko		58.2	238933	7383823		-90		
DDH2-11	Geopeko	1973	346.9	239739	7384367		-90		Test an EM anomaly



DDH2-12	Geopeko	1973	462.4	239624	7384424		-90		Geochemical anomaly
DDH2-13	Geopeko	1974	44.3	239006	7384584		-90	30.5m@0.27%Cu	Test for near surface mineralization
DDH2-14	Geopeko	1974	98.8	239108	7384638		-90	80.7m@0.11%Cu	Test for near surface mineralization
DDH2-15	Geopeko		46	239223	7384687		-90	46.3m@0.16%Cu	Test for near surface mineralization
DDH2-16	Geopeko		138.4	239229	7384662		-90	134.1m@0.15%Cu	Test for near surface mineralization
DDH2-17	Geopeko		146.8	238849	7383837	19	-55	Little copper	Designed to test an S.P. anomaly
ST001	Newcrest	1995	150	240285	7384566	225	-60		Test a weak As and Zn anomaly.
ST002	Newcrest	1995	110	239918	7384432		-90	2m @ 0.035% Cu	Peripheral magnetic target to Struck Oil porphyry
ST003	Newcrest	1995	102	239937	7384830	276	-60	16m @ 0.09% Cu	Au soil anomaly >10ppb. Au diggings nearby.
ST004	Newcrest	1995	129	239898	7384840	264	-60	6m @ 0.09% Cu	Second hole to test same target as ST003.
ST005	Newcrest	1995	73	238499	7384336		-90		A magnetic target west of Struck Oil porphyry.
ST006	Newcrest	1995	49	239450	7384807		-90	2m @ 0.05% Cu	A magnetic target north of the Struck Oil porphyry.
ST007	Newcrest	1995	37	240280	7384560		-90		
ST008	Newcrest	1996	48	238786	7384774	124	-60	NA	Following up ironstone float, possible skarns
ST009	Newcrest	1996	66	238858	7384725	124	-60	NA	Following up ironstone float, possible skarns
ST010	Newcrest	1996	48	238980	7384728	124	-60	6m @ 0.101% Cu	Following up ironstone float, possible skarns
SP1	Geopeko	1972	7.1	240032	7384177		-90		
SP2	Geopeko	1972	19.4	240434	7384310		-90		
SP3	Geopeko	1972	8.95				-90		
SP4	Geopeko	1972	7.05	239728	7383947		-90		
SP5	Geopeko	1972	6.52	239626	7384812		-90		
SP6	Geopeko	1972	10.23	239916	7384905		-90		
SP7	Geopeko	1972	12.05	240211	7385005		-90		
SP8	Geopeko	1972	15.7	239159	7383895		-90		
SP9	Geopeko	1972	14.3	238984	7383840		-90		
SP10	Geopeko	1972	5.57	240491	7384333		-90		
SP11	Geopeko	1972	3	240509	7384338		-90		
SP12	Geopeko	1972	12.65	240354	7384402		-90	11.5m @ 0.08% Cu	
SP_6/DDH6	Geopeko	1972	20.6	238987	7384030				
SP_7/DDH7	Geopeko	1972	21.7	239044	7384048				
SP_8/DDH8	Geopeko	1972	15.7						
SP_9/DDH9	Geopeko	1972	14.33						
SP_10/DDH10	Geopeko	1972	143						
IS001	Newcrest	1995	169	237307	7384022	278	-60	8m @ 0.04% Cu	
IS002	Newcrest		181	237463	7383520	333	-60		

The Geopeko drill hole data has not yet been digitized, and the data is still in feet and inches. The Newcrest drill hole data has also not yet been digitized, however this data is in metres. Details of these drill holes are listed in Table 5. It is highly recommended for Harvest Metals to undertake a full data compilation of the available drill hole data within the Mt. Morgan tenements within the near future.

### Geophysics

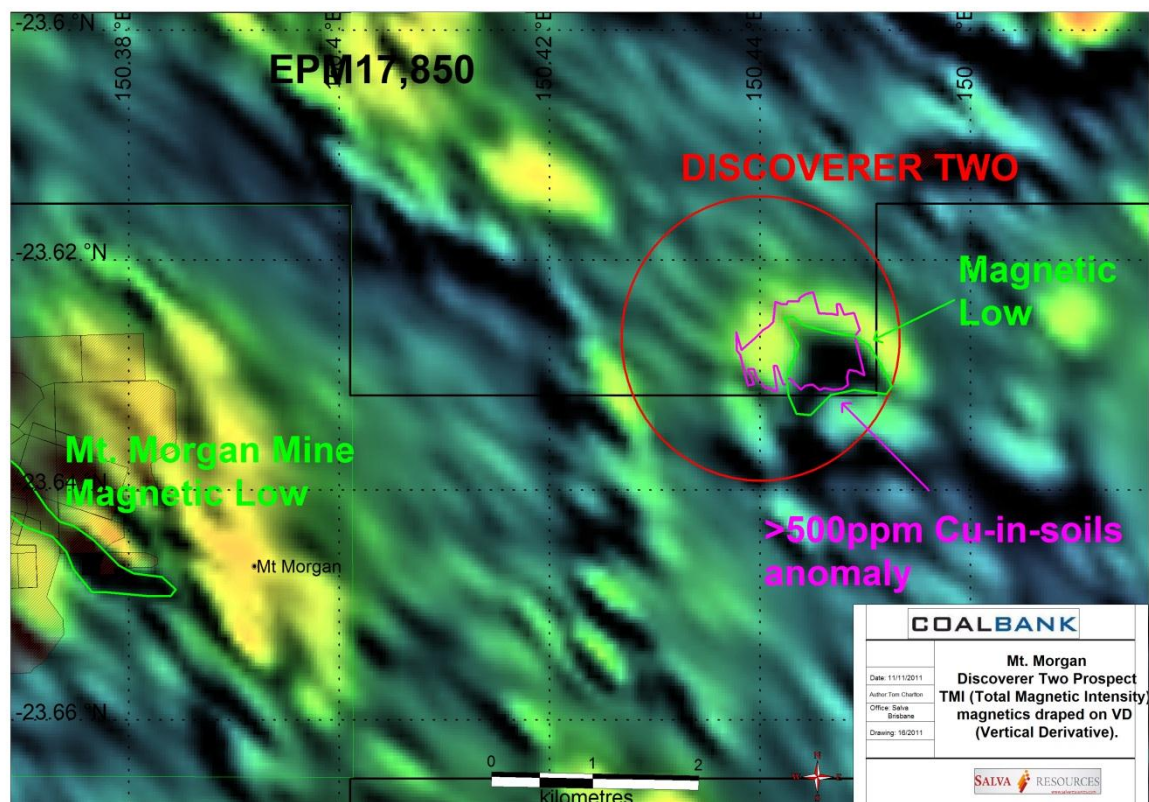
Geopeko conducted soil geochemistry, magnetics, Self-potential (SP), Resistivity, Gravimetric and Electromagnetic, methods on the Discoverer Two prospect.

Self-potential (SP) anomalies are located to the south, east and north of the intrusive. These anomalies may reflect zones of massive pyrite associated with epidotization near the weathering surface. The SP anomaly is also associated with a coincident semicircular TEM (Transient Electromagnetics) anomaly detected by Geopeko. Regional magnetics flown by Pasmaenco indicate a broad magnetic low at Discoverer Two. This magnetic low is





superimposed nearly perfectly on the >500ppm copper-in-soil anomaly (see Figure 21). This indicates a broad zone of ‘magnetite destruction’ associated with alteration either related to the intrusive or its associated mineralization. Note that the Mount Morgan mineralization is also associated with a (linear) magnetic low feature.



**Figure 21: Discoverer Two Geophysics - TMI (Total Magnetic Intensity) draped on VD (Vertical Derivative).**

Regional radiometrics also flown by Pasminco indicate a broad ‘Thorium 45c’ high at Discoverer Two. As per the magnetic low, this radiometric anomaly is also superimposed nearly perfectly on the >500ppm copper-in-soil anomaly (see Figure 22). This radiometric high is most likely related to the intrusive and the resultant alteration and mineralization of the local country rock.

In 2007 Lodestone flew VTEM (Versatile Time Domain Electromagnetics) over various prospects in the Mount Morgan region (see Figure 23). A strong north-north-easterly trending VTEM anomaly was detected 150m to the east of the main copper and molybdenum soil anomaly. The VTEM anomaly is strongly conductive and could possibly represent a buried undetected conductive sulphide body. At the time of writing the interpreted depth of this conductive body is unknown.

Some gossanous material has previously been mapped within the general vicinity of the VTEM anomaly; however it is unsure whether this material may be the cause of the anomaly.

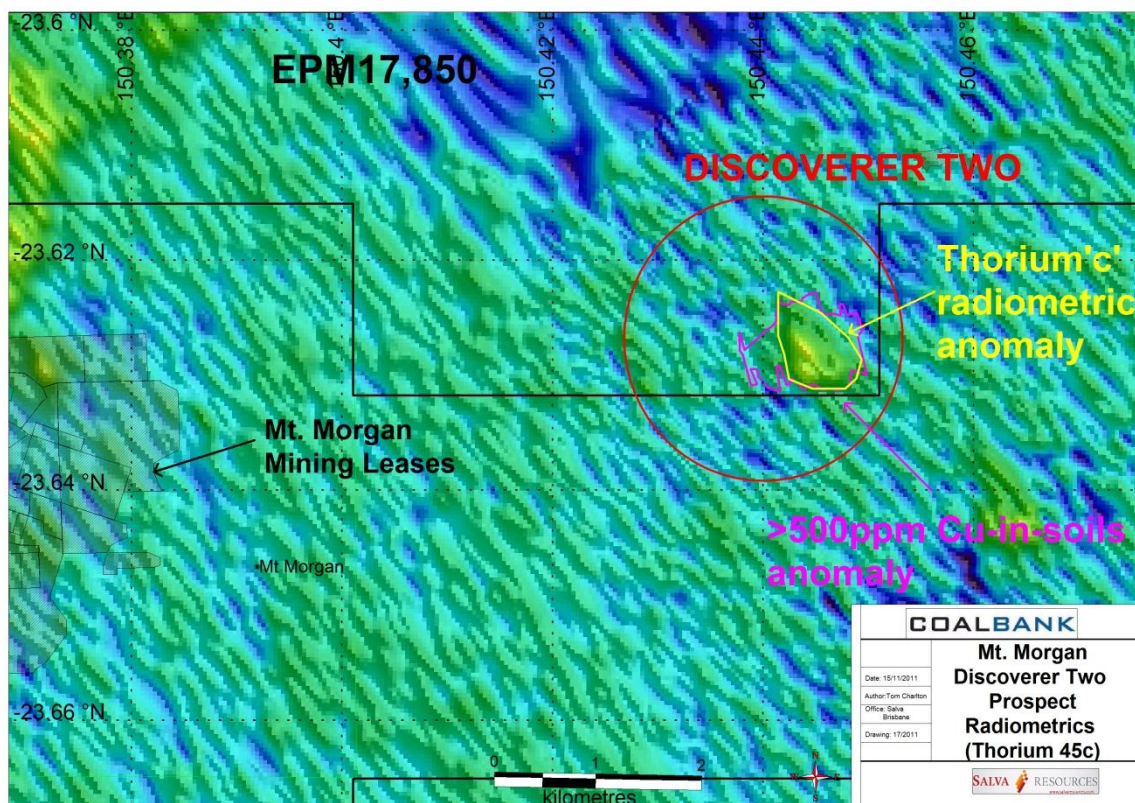


Figure 22: Discoverer Two Geophysics – Radiometrics Thorium 45c

Since the general strata dip eastwards, which may explain why the soil anomaly is offset to the west of the main VTEM anomaly, i.e. the geochemical copper anomaly has been projected to the surface along the strata dipping to the east. This is not uncommon at similar prospects elsewhere in the world.

This VTEM anomaly was not known by previous explorers, and hence it has not been drilled. As part of any future exploration program, it would be highly recommended to drill this anomaly.

It must be noted that some datum issues appear to be evident with the plots of the VTEM data, hence the original datum's will need to be crosschecked to ensure accurate plotting of the data prior to any further investigation of the VTEM anomaly.

### Mineralisation

The higher grade copper and molybdenum mineralization occurs within an annular halo encompassing the central porphyry stock. This mineralized halo is variable in width from 30-400m around the margins of the intrusive. Beyond this halo is a broad pyrite-rich zone associated with epidotization. Approximately 800m from the intrusive is a small anomalous zinc-rich zone.

A skarn in the area could possibly be rich in copper, zinc, gold or a combination thereof. Chalcopyrite occurs in fractures and veinlets in association with pyrite, quartz, and minor magnetite. These veinlets show no discernible regular pattern and are usually irregular and discontinuous.



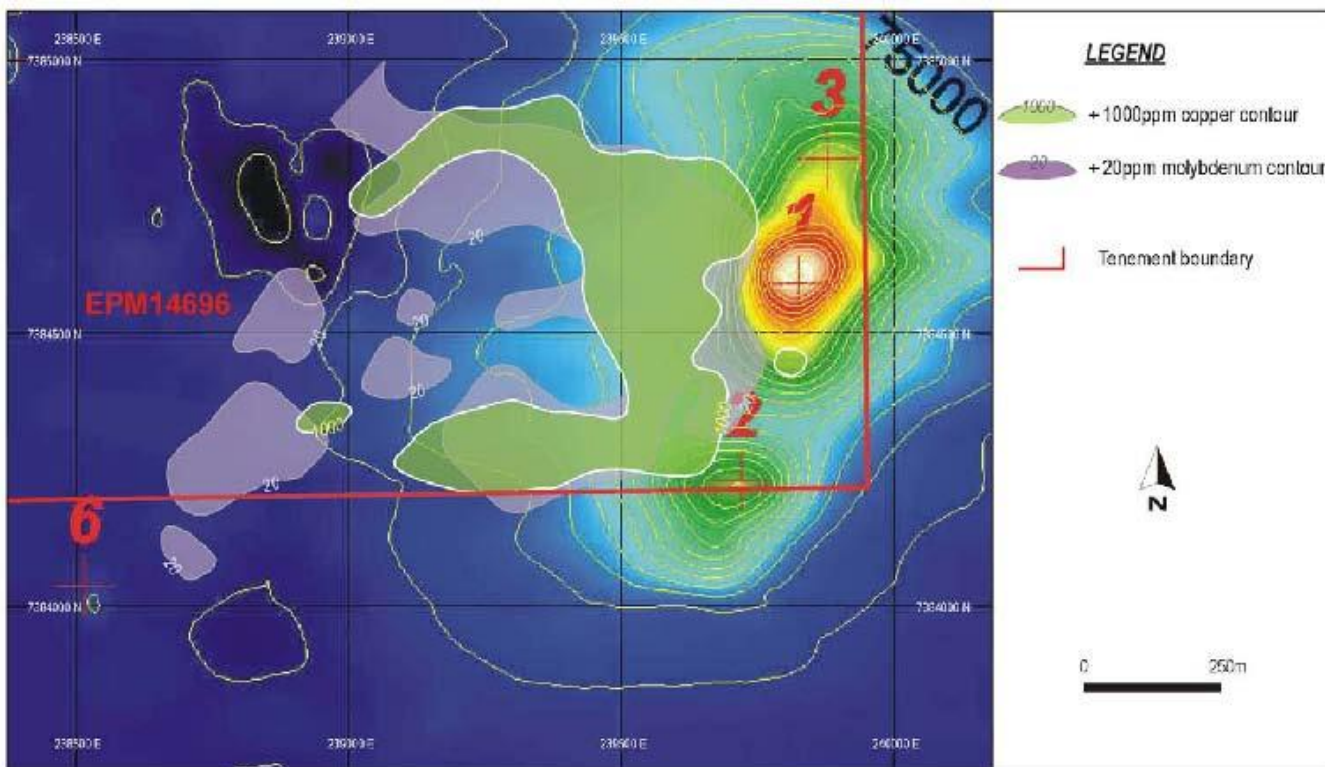


Figure 23: Copper and Molybdenum-in-soils on 2007 VTEM

Minor amounts of chalcopyrite are present as disseminations within the mineralized rock however in most cases this is due to the limited migration from veins of mineralizing fluids along bedding foliations <sup>(3)</sup>.

Molybdenite occurs within quartz veins associated with minor pyrite and occasionally chalcopyrite. Molybdenite is predominant within quartz veins that contain pyrite. These quartz veins usually pre-date the sulphide mineralization. Molybdenite also occurs as thin smears on hairline fractures which are discontinuous <sup>(3)</sup>.

The copper-molybdenum halo correlates with the biotite zone. It is unsure at this stage whether the mineralization event was directly related to the biotite alteration. The Hornfelsing (which pre-dates the mineralization) has produced a more brittle rock which fractures more easily and has provided more fractures for the localization of the mineralization.

Ballinger noted that the dominant control on the intensity of the mineralization is the rock type. The tuffaceous siltstone is more mineralized than the andesite. There are two main reasons for this:

- a) The tuffaceous siltstone sequence is a more competent rock than the andesite and hence fracturing is more intense and the fractures are more open.
- b) Some migration of mineralizing fluids along bedding foliation within the sediments which do not occur in the andesite.



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### Exploration Potential

The Discoverer Two prospect is broadly similar to other classical styles of porphyry copper mineralization found elsewhere in the world in terms of intrusive type, alteration zones and mineralization zoning. The main differences are a perceived lack of a phyllic alteration zone, absence of breccias, low intensity of alteration and absence of multiple intrusive history. These zones may exist however they have as yet been undiscovered.

Generally copper mineralized porphyry intrusives in Eastern Queensland lack multiple mineralizing events which imply that the mineralizing episodes were short lived <sup>(3)</sup>.

Copper skarn potential does exist at the Discoverer Two Prospect. Any future exploration should target limestone or calcareous sediments for skarn related mineralization. The author believes that it is only by pure chance or bad luck that no limestone has been intersected during previous drilling within the Discoverer Two area. Such mineralization could extend many hundreds of metres from the stock. Limestone is known to occur in the vicinity within both the Mount Warner volcanics and the Raspberry Creek beds (in fact the small hamlet 1km to the south is known as Limestone).

VMS deposits are known to often occur in clusters - and regional correlations suggest that the exposed acid volcanic sequence at Discoverer Two is equivalent to the stratigraphy immediately above the banded sequence 8km away at the Mount Morgan gold mine.

### Recommended Exploration Program

- Prior to conducting any exploration programme over the Discoverer Two Prospect, all existing previously un-digitised geochemical and geological data will need to be digitised. A 3D computer model should be built from existing surface and drill hole geochemical and geological data.
- Following this digitisation programme, this data should be interpreted to extrapolate where either limestone or highly calcareous sediments come close to the 'Struck Oil' intrusive stock, and where these limestone or calcareous sediments have been faulted closer to the surface.
- Drill testing for skarn would be best served by drilling vertical or near vertical holes within close proximity to the intrusive within the areas of the best geochemistry, close to but not within the intrusive. A skarn in the area could be rich in copper, zinc, gold or a combination thereof, and could extend hundreds of metres from the intrusive stock.
- Large limestone deposits up to 80m thick are known to occur to the south and to the east of the Struck Oil porphyry, and could extend to a point beneath the andesitic rocks on the western side of the Struck Oil intrusive.
- Generally higher grades of copper mineralisation have been intersected in minor slightly calcareous intervals in the sandstone layers of the stratigraphy, and these intervals have been slightly skarnified.
- The majority of holes drilled thus far at Discoverer Two prospect have been shallow (average 100m depth) and hence the potential for deep high grade mineralisation has not been properly tested. Deeper holes would have greater probability of intersecting the interpreted limestone. The depth of these holes shall be decided following the 3D modelling of the available data. Any future drill holes should be tested by down-hole EM Geophysics.
- A good target to drill would be the very strong VTEM conductive Geophysical anomaly to the east of the porphyry detected at Discoverer Two during the 2007 VTEM





programme. Geopeko's DDH2-12, in 1973 un-beknowingly drilled just outside this VTEM zone. Copper values from 7 – 30m average 0.185% Cu, with anomalous copper and molybdenum values to bottom of hole at 465m.

- Since limestone units are often discontinuous, a negative test of the stratigraphy for limestone would not negate the possibility of a limestone occurring at the prospect.

## Moongan Prospect

### Introduction

The Moongan Prospect is located 5 km east of Mount Morgan (see Figures 16, 17 and 18). The area is accessible by various sealed and unsealed roads.

This prospect lies within a well-recognized mineralized corridor that extends north-west from Struck Oil, west to Moongan and from there north toward Moonmera.

Favourable lithologies, strong structural influences, and a pronounced VTEM conductor, have led to the selection of this area of interest.

### Geology

A large proportion of the area is masked by soil and alluvium cover and during early exploration rock types were mapped from rubble. The Moongan target is described as structurally complex. The geology, derived from drilling, is dominated by massive andesites and andesite tuffs with irregularly intercalated rhyolites and rhyolite tuffs (quartz porphyries), occurring along a north west-south east strike. The rhyolites tend to take prominence over the andesitic rocks toward the north where silicified rhyolite breccias commonly outcrop. The area is known as the Moongan Corridor Sequence, and equates to, but is separated from the Mine Corridor Sequence by a narrow zone of Mt Morgan tonalite <sup>(9)</sup>.

### Previous Exploration

Early exploration of the Moongan area included extensive use of IP to survey areas considered geologically similar to the area enclosing the Mount Morgan ore body. An early regional survey carried out by CRA Exploration Pty Ltd (1963) revealed a large anomalous zone, suggesting disseminated sulphide mineralization in the Moongan Corridor rocks. This initial survey was followed up by more detailed IP surveying, with several IP highs delineated within the anomalous area <sup>(9)</sup>.

550 soil geochemistry samples were collected by CRA over the area covered by IP surveying. Preliminary contouring of total copper values from these samples, indicated a weak, but reasonably defined copper geochemical anomaly located at the southern end of the area. This anomaly was partially coincident with the area of highest IP response <sup>(10)</sup>.

Four vertical diamond drill holes were also drilled by CRA during the period 1963-1964, to test IP (DD63MM6-8) and geochemical (DD63MM9) targets. Drilling generally intersected variable pyrite mineralization in predominantly andesitic tuffs but with very little associated copper mineralization <sup>(9)</sup>. Drill hole DD63MM6, was initially drilled on the peak IP values. The results showed disseminated pyrite, trace chalcopyrite and no gold, but as the total sulphide content approached 3% it was considered that further survey work over the anomalous area



was warranted. Diamond drilling at a further three sites was subsequently undertaken. The results from drill holes DD63MM7-9 were similar to the previous hole revealing a 'porphyry copper' type granite carrying disseminated pyrite with minor copper mineralization <sup>(9)</sup>.

No further work was carried out over the Moongan area by CRA until the early 1980s (1981-1983). Geophysical work during this period included ground magnetometry in addition to IP and resistivity. Ground magnetic measurements taken over the area were highly variable and indicated a complex pattern of narrow discontinuous magnetic units. The induced polarization and resistivity surveying gave the most anomalous response. A broad zone of extremely high response was outlined by IP and a broad low over the area defined by resistivity measurements. These signatures were considered to be potentially of the type of response which may be generated by Mount Morgan style mineralization <sup>(11)</sup>. Lower gradient magnetic responses were also observed outside the region which showed partial agreement with the limit of the anomalous IP halo (11).

Geochemical sampling was carried out in 1981 by CRA. A total of 213 auger-hole samples were collected at 200 x 25m intervals over the IP surveyed area. The results indicated a weak, but well defined geochemical copper anomaly coincident in part with the major IP high. Peak Au values ranged from 50 to 385ppb and Cu from 100 to 740ppm.

In 1982 three angle drill holes, DD82MM18, 19 and 20, were drilled by CRA to test targets defined by IP. The sequence, intersected by drilling, represented predominantly andesitic tuffs with rare lavas and/or high level intrusives. The rocks hosted disseminated magnetite and fine pyrite veining but only rare chalcopyrite was found. There was no extensive alteration and only minor patches of epidote and some chlorite development around shear zones <sup>(11)</sup>.

Lodestone commissioned Geotechairborne to fly VTEM in 2007. A "strong and distinctive conductor" was delineated at the prospect from this work.

### **Exploration Potential**

The Moongan Prospect presents potential for intrusion-centred copper-gold mineralization. Favourable lithologies and strong structural influences are recognized, while the recent geophysical work by Lodestone has outlined a pronounced VTEM conductor, with conductive horizons indicated at depths of 400 to 500m. The anomaly is interpreted to originate from the prospective mine corridor equivalents <sup>(38)</sup>.

### **Recommended Exploration Programme**

- VTEM data collected in 2007 should be remodelled to optimise drill targeting of this prospect's strong and distinctive conductor.
- When validated, the Moongan conductor can be drill tested by (notionally) two 600m RC drill holes.



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## Morganite Prospect

### Introduction

The Morganite prospect is located some 3km to the north-northwest of the Mt Morgan Mine (see Figures 16, 17 and 18).

This prospect contains the northernmost extension of the Mt Warner Volcanics (previously Mine Corridor Volcanics). The old Morganite and Great North Lode workings, both only minor, are included in the prospect area.

### Geology

The bedrock geology in the prospect outcrops beneath Jurassic Razorback sedimentary cover in the upper reaches near Crows Nest Creek and Mills Gully. Andesitic volcanics and rhyolite of the Mount Warner Volcanics are intruded by a number of phases of the Mt Morgan Tonalite. The volcanics and some of the intrusives exhibit strong silicification and pyritization alteration with the presence of pyrite and chalcopyrite mineralization in a linear breccia structure that appears to be identical to that found around the periphery of the Mt Morgan mine <sup>(8)</sup>.

Morganite features favourable lithologies, intrusive breccias, and widespread alteration, anomalous shallow gold values recognised through extensive analysis of geological, geochemical and geophysical data.

### Previous Exploration

Most of the exploration of the Morganite area was undertaken during the 1980s by RGC, as part of their joint venture with GeoPeko. A number of geological maps were generated during this period. These contain a degree of conflict between the different versions <sup>(8)</sup>.

Ground magnetometer surveys were conducted in 1985 over a previously identified aeromagnetic anomaly in the Mt Morgan area. A broad northeast trending structure with susceptibility values similar to magnetic values estimated for the Mount Morgan tonalite was identified in the identified area <sup>(35)</sup>.

An early hole (MC-2) drilled at the southern end of the prospect area by North Broken Hill ca. 1970 passed through altered and pyritic granite variants throughout. In particular, the final 300m which was most strongly fractured and locally brecciated contained a 5cm quartz pyrite vein assaying 250ppm Au <sup>(35)</sup>.

Assay results from some 80 rock chip samples collected by RGC have been identified. The results indicated gold anomalism of less than 1ppm Au.

A shallow 16 hole percussion drilling program was carried out by RGC in 1985 (holes 1 to 16). Two of the holes were drilled on geomagnetic anomalies, while the remainder on an east west section aiming to identify any alteration or geochemical anomalies present. A diamond drill hole was also completed at Mt Morgan Mine in order to compare trace element data. The silica-pyrite alteration, both lithologically and chemically was found to be similar between Mt Morgan and those holes drilled in the centre of the Morganite prospect <sup>(36)</sup>.



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A later program of 8 diamond holes, referred to by Arnold 2005<sup>(8)</sup> was also drilled. The precise date and hole IDs are unknown at this stage. A program of 4 holes was also drilled in 1987 (MM-1, 1A, 2, 3)<sup>(8)</sup>.

Six holes were drilled in 1990, four to test areas of reasonably understood geology and two where geology was hidden under Mt Hoopbound Formation (M1, 3, 4, 6, 7 and 8). Most of the mineralisation encountered was pyrite with rare base metal sulphides and low, sporadic Au and Ag<sup>(22)</sup>.

Lodestone flew closely spaced high-resolution aeromagnetics in December 2004. Further discussion on this is in the section below.

### **Exploration Potential**

Morganite is part of a major cluster of silica-pyrite alteration zones and hydrothermal breccias.

Favorable lithologies including hydrothermal breccias and widespread silica-pyrite alteration zones occur at the Morganite prospect. Two kinds of breccia were recognized by the RGC geologists: intrusion breccia that has been overprinted by strong alteration, and hydrothermal breccia with a strongly pyritic matrix around variably altered clasts. The hydrothermal breccia is considered to be similar to some of the late-stage hydrothermal breccias near the Mt Morgan ore body<sup>(8)</sup>.

The Lodestone aeromagnetic results suggest a complicated multiphase arrangement of individual intrusions within the tonalite complex in the Morganite area. Sillitoe's interpretation also seems unnecessarily pessimistic in relation to the chances of the volcanic sequence having deep roots in at least some parts of the area.

Morganite is part of a major cluster of silica-pyrite alteration zones and hydrothermal breccias. Morganite's introductory appeal lies in its proximity to the former Mount Morgan's 'Main Pipe' orebody, and siliceous outcrops that look very much like those on a rim of the former 'Sugarloaf' ore body. Favorable lithologies, hydrothermal breccias, widespread silica-pyrite alteration, anomalous shallow gold values and (with one exception) an absence of deep drilling, add to Morganite's appeal as an exploration target.

Lodestone flew closely spaced high-resolution aeromagnetics in December 2004. Distinctive magnetic features are evident. There was some conjecture in 2005 that these features were similar to a simulated (i.e. pre-mining) signature of Mount Morgan's 'Main Pipe' ore body. This conjecture abated and was never resolved. Consequently, it is possible that one or more features are drill-worthy targets.

Distinctive magnetic features are evident in the Lodestone aeromagnetics. A Mount Morgan 'Main Pipe' ore body signature has been suggested as well as a more complicated multiphase arrangement of individual intrusions within the tonalite complex.

### **Recommended Exploration Programme**

There is an absence of deep drilling in the Morganite area while the high resolution aeromagnetic features described provide a number of prospective drill targets. A program of 1000m consisting of two 500m holes into selected distinctive magnetic features is





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recommended to test for possible Mount Morgan style mineralization or extensions to Mount Morgan's main pipe ore body.

## **Midas Prospect**

### **Introduction**

The Midas Prospect is located approximately 4km north-west of the former Mt Morgan Mine site (see Figures 16, 17 and 18). Access tracks are through quite rugged terrain.

This Mount Morgan-style target lies in an area that includes numerous small copper gold workings including the historic Midas and Clanricarde Mines. The Midas–Clanricarde line of workings were sporadically active between 1890–1948 with total recorded production of 1,920 oz from 1,301 Tons of ore (45.9 ppm) and an additional 416 oz recovered from tailings. Approximately 5.5 tons of copper was also produced (0.4%) <sup>(20)</sup>.

### **Geology**

Mineralization in the Midas-Clanricarde line of workings was a typical high-grade gold copper bearing quartz fracture filling (records indicate 6" to 1 ft wide) within strongly chloritic andesitic volcanics of the interpreted Mount Hoopbound Formation (previously Dee Volcanics) <sup>(7)</sup>.

There are two major veins. The Clanricarde/Midas vein set trends northeast and dips vertically. The structure has been traced over 750m to the Jurassic cover boundary in the north –east and then picked up on the other side of the Jurassic. Chalcopyrite and bornite are visible sporadically in the quartz veins. A second north-south trending vein set with strike length of over 450m appears to coincide with the contact of the Devonian volcanic and the Carboniferous sediments. At its western extent the north-east structure appears to be truncated by the north-south structure. Workings on both vein sets extend no further south than the intersection of the two veins <sup>(7)</sup>.

Small outcrops of felsic volcanics or intrusives of unknown origin have been discovered during recent mapping of the Midas area. These may be possible equivalents to upper sections of the Mount Morgan stratigraphy (which host the Mount Morgan deposit) or dykes of more significant intrusive bodies at depth <sup>(18)</sup>.

### **Previous Exploration**

Midas has returned significant gold and copper assays from rock chip sampling of the well-defined structures over a number of programs.

Rock chip sampling from a series of fault controlled quartz veins of the old Clanricarde and Midas mine workings in the Midas target area was carried out by Freeport in 1988. Results up to 46.2ppm Au (majority <1ppm) occurring in association with pyrite and chalcopyrite were realized during this initial sampling. An extensive rock-chip sampling program was also carried out by Freeport in 1989. Samples (Numbers 34222–253, Q34M01, Q34M02) were collected from underground stopes of the old Clanricarde and Midas workings, as well as from wall rock and alteration selvages in order to determine whether a mineralized halo surrounded the quartz veins. The results obtained from samples confined to the quartz veins



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indicated very high Au grades (up to 86.5ppm) and averaged 36.1ppm Au, while samples from secondary veins returned values up to 12.4ppm Au. High copper and silver assays of up to 6.48% Cu and 80ppm Ag were also recorded from samples of mineralized quartz <sup>(5)</sup>.

In 1996, a reconnaissance rock sampling program was carried out by Newcrest Mining Ltd. In contrast to earlier work by Freeport and Gold Fields Exploration, which concentrated on the existing mineralized veins, the program by Newcrest aimed at evaluating the potential for bulk tonnage stock work between the main vein sets (sample #54-57, 9142-9144, 9640-9675, IO414-419). The results from the rock chip samples at the time indicated that mineralization was not significant beyond the main high grade vein sets <sup>(7)</sup>.

Two phases of mapping were carried out by Lodestone in 2006/2007. The discovery of small outcrops of felsic volcanics or intrusives, of unknown origin, are described as potentially representative of the upper sections of the Mount Morgan stratigraphy or dykes of more significant intrusive bodies at depth. In December 2006, Lodestone also undertook a rock-chip sampling program, confirming significant gold-copper mineralisation at the Midas Prospect. A total of 85 rock chip samples were collected (MM01-MM44, MM51-MM92) with results of up to 103 ppm gold and 3.45% copper occurring along the two main structures trending north-east and north-south <sup>(20)</sup>.

Aeromagnetic and VTEM surveys over selected Mount Morgan prospects (also included Morganite, Hamilton Creek and Struck Oil prospects), were completed by Lodestone in January 2007. The closely spaced high resolution survey was flown over 16 square kilometres at the lowest possible altitude. The VTEM data revealed a roughly circular conductive zone at the northern end of the Midas prospect in an area of volcanic and intrusive rocks overlain by sandstone <sup>(19)</sup>. A detailed gravity survey of the same area was completed in February <sup>(21)</sup>.

In February 2007, drilling over the Midas prospect was carried out by Lodestone. The program was aimed to assess outcropping mineralization and to determine the possibility of Mount Morgan style host rocks and mineralization at depths. Nine reverse-circulation percussion holes were drilled. Six of the nine holes (MS001-5 and MS009) were aimed at the southern main line of workings that host the Clanricarde and Midas mines. MS006, MS007 and MS008 targeted the northern line of workings.

Results from this program were poor. The best results returned from the program were from those holes drilled along the main trend and included two metres at 2 ppm gold (at depth 26 to 28 metres) and one metre at 1.07ppm. The best copper intercept was 0.23% from 54 metres to 55 metres. This mineralization occurs in a formation that partly overlies the prospective Mount Morgan Mine Sequence elsewhere in the district. Further drilling proposed by Lodestone was deferred to wait for the advanced VTEM heliborne geophysical survey to be flown in May 2007 <sup>(19)</sup>.

### **Exploration Potential**

The mineralization style, chemistry and regional setting of the Midas prospect indicate the potential for a volcanogenic massive sulphide type deposit. This type of mineralization is known to occur in clusters and regional correlation suggests that mineralization at Midas is located in the upper stratigraphic levels of the Raspberry Creek Formation that are



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interpreted to overlie the prospective mine corridor sequence (8). The veining present at Midas is high grade but low tonnage, with little potential, however the general area around Midas is considered to be prospective as the possibility of clustering characteristic of VMS mineralization and potential for the area to represent another Mount Morgan type deposit.

The source at depth of the narrow vein style mineralization could be tested as part of any future exploration program at the prospect.

The more recently discovered small outcrops of felsic volcanics or intrusives of unknown origin within the Midas area are considered significant.

#### **Recommended Exploration Programme**

Exploration has shown the presence of significant gold mineralization at workings along strike at the Midas prospect. The old workings may be part of the major mineralizing system, or represent portions of it with possible previously un-recognized potential at depth. Further geological mapping and interpretation is warranted to improve understanding of the host lithologies. The source at depth of the narrow vein style mineralization could be tested as part of any future exploration program at the prospect.

### **Hamilton West Prospect**

#### **Introduction**

The Hamilton West area lies approximately 7km south-southeast of the town of Mount Morgan, near Hamilton Creek. Hamilton West is considered to be along the highly prospective Mount Morgan 'mine corridor'. Access is via tracks over typically rough terrain. The Hamilton West is also referred to as Hamilton Creek and Discoverer 2.

#### **Geology**

The main rock units identified in the prospect area are banded siliceous rocks of the Mount Warner Volcanics with overlying agglomeritic and tuffaceous bedded rocks of the Mt Hoopbound Formation. The beds are typically sub-horizontal or dip slightly towards the west. The Mount Warner sequences are intruded by granodioritic quartz and quartz feldspar porphyry of the Mount Morgan Tonalite. Significant silica-pyrite alteration interpreted to be associated with intrusive rhyolite has been identified in the area <sup>(5)</sup>.

#### **Previous Exploration**

At Hamilton West an intensive program of exploration, carried out by Geopeko during the 1960s, included rock chip geochemistry, mapping, detailed stream sampling, geophysics (SP, TEM) and drilling. During the early geological mapping by Geopeko, traces of chalcopyrite associated with magnetite were noted in a brecciated contact zone between the granite and siliceous volcanic rocks in the vicinity of Hamilton Creek <sup>(16)</sup>.

This area was subsequently geochemically soil sampled for copper, zinc and nickel and also surveyed using ground based magnetometer and SP methods. The strongest magnetic and SP anomalies coincided with areas of observed magnetite rich zones. Offset copper and zinc anomalies can be related to this zone <sup>(16)</sup>.



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Further stream and rock chip sampling was carried out by Geopeko over the prospect area in 1970. Drainage samples were analyzed for Cu and Zn and rock geochemistry results obtained for Cu, Zn and W. Copper values ranging to 2410ppm (0.241%) were obtained from rock samples. This was followed up with further stream sediment and soil geochemical sampling in 1971 and 1972 over anomalous areas identified by airborne radiometrics. Samples were assayed for Cu, Zn and Pb with only minor anomalism <sup>(17)</sup>.

One diamond hole (SP2) was drilled in the Hamilton Creek area in 1970. The rock types intersected were fine grained andesite, microdiorite and tuffaceous conglomerate and sandstone <sup>(6)</sup>.

Two shallow diamond drill holes (DDH32-1 and 2) were then completed in 1971 in an area of anomalous tungsten values in skarns. Unfortunately the analyses of the original soil samples proved to be incorrect and the drill holes showed no significant tungsten values <sup>(14)</sup>.

Geopeko also flew airborne radiometrics, airborne EM and airborne magnetics over the area in 1971(12). A large complex aeromagnetic anomaly, with well-defined central magnetic low within a well-defined zone of higher amplitude, was highlighted. The signature provides similarities to the magnetic character of the Mount Morgan Mine. Follow up TEM survey was then carried out over extensions of the area in 1973. These, however yielded no significant results.

A geophysical ground survey was undertaken by Geopeko in 1974 in order to follow up on the ground the complex aeromagnetic anomaly over the Hamilton West area. A program of 8 short rock-probe diamond holes (DDH32-3 to 10) was also drilled to test previously recognized geochemical soils anomalies, the hydrothermal alteration zone and interpreted stratigraphy. This program showed that the alteration zone is intense and extensive though only low base metal geochemical values were found <sup>(14)</sup>.

One deep diamond hole (DDH32/11) was drilled as part of a Mines Department program of stratigraphic drilling in 1979. The hole revealed a complex porphyry copper style intrusion and associated hydrothermal alteration.

North Broken Hill carried out soil sampling in 1984 with 377 samples analyzed for Au, Cu and Zn. Anomalous gold values ( $\leq 0.04$ ppm) were returned in 60 samples. There was, however no apparent correlation with mapped geology or base metal values.

Weakly anomalous results from bulk cyanide leach stream sampling carried out by BHP Ltd in the area west of Hamilton Creek are reported by Freeport (1988). The results could not be explained by follow up ridge and spur soil sampling at the time, and, due to the lack of detail Freeport decided to repeat this sampling. The program was also extended to cover the whole of the Hamilton (and Horse Creek) areas. Freeport collected 26 samples with just three anomalous results obtained from a restricted area of drainage, west of the Hamilton Creek prospect. Freeport geologists traversed this area, but found no alteration or anomalous features, being an area of Banded Iron Sequence with areas of silicic clay alteration <sup>(33)</sup>.

Geochemical soil sampling of clay alteration and skarn zones in the area of Hamilton Creek was undertaken by Freeport, in conjunction with detailed mapping and limited rock chip





sampling, in 1989. Geochemical soil samples were collected using hand augers (100m x 50m) with samples analysed for Cu, Pb, Zn, Ag and Au. The results showed high background Cu within the skarn altered units in the east but low Au throughout the sample area <sup>(5)</sup>.

Finally, the Hamilton West area was flown as part of the VTEM heliborne electromagnetic survey flown over much of the Mount Morgan area for Lodestone in 2007. The VTEM revealed conductive horizons west and south-west of this distinctive magnetic low. Possible explanations include sulphide mineralization, carbonaceous sediments, exhalites, or weathered palaeo-surfaces.

### **Exploration Potential**

The Hamilton West prospect is interpreted to be an extension of the prospective mine corridor rocks. The area is characterized by silica-pyrite alteration and hydrothermal breccias occurring in intrusive rhyolite.

Recently revealed conductive horizons from VTEM surveys carried out by Lodestone are coincident with the previously recognized gravity targets. A well-defined central magnetic low occurs within a zone of higher amplitude and longer wavelength magnetic response and provides a classical magnetic signature for some styles of intrusion-centred mineralization. The central low also conforms to lithological layering indicating alternative potential for Mount Morgan style mineralization <sup>(38)</sup>.

The depth of the copper intersection in government stratigraphic hole DDH32/11 will need to be followed up as part of any future exploration program.

### **Recommended Exploration Programme**

Geological mapping and interpretation is warranted to improve understanding of the host lithologies.

VTEM data collected in 2007 by [www.geotechairborne.com](http://www.geotechairborne.com) will be further modeled and re-interpreted to define the most prospective (as distinct from conductive) horizons evident.

## **Station Prospect**

### **Introduction**

The Station prospect area is situated approximately 16km east of the township of Mount Morgan.

### **Geology**

The target at the Station prospect is described in McCawley 2007 <sup>(21)</sup> as a Mount Morgan-style prospect which probably includes segments of the top contact of the Mount Warner Volcanics. The target lies within a structurally complex area, while strongly magnetic concealed extensions of this unit, probably indicating strong alteration, are interpreted. Two felsic plutons add interest to this prospect. Most of the prospect is situated beneath an eluvium blanket restricting the possibility of previous explorers to make a discovery.



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### Previous Exploration

Some reconnaissance magnetic line surveys were completed over the area by Geopeko around 1968 (precise date unknown).

Geopeko conducted a regional stream sediment sampling program in the Station Creek area and a BCL Au stream sediment sampling program was carried out by Pasminco in 1992. The Geopeko sampling highlighted the northern part of Station Creek as being anomalous in Zn (levels 80-150ppm Zn). The regional distribution of these values tended to mirror the interpreted contact between the upper and lower sequences of the Capella Formation. Copper values were more erratic, with >90ppm Cu occurring throughout the upper parts of Station Creek (36).

In the Lower Station Creek area Poseidon Exploration Ltd (1994) carried out a regional stream sediment sampling and aeromagnetic survey with stream sediment results indicating a low order (2-5ppb) BCL gold anomaly coincident with a magnetic high <sup>(26)</sup>. A BCL stream sediment anomaly of 7.44ppb Au from stream sediments was detected in an area that was draining the “Struck Oil” Cu-Mo porphyry <sup>(36)</sup>.

Newcrest followed up the Au anomaly initially (1994) with six rock samples (from sulphide bearing float) with three returning >1 ppm Au. Sixty seven soil samples were collected in 1995 and assayed for Au, As and Zn. BCL soil sample results outlined small areas of 10 to 32 ppb Au with results showing significant base metal and arsenic soil levels. A further 114 rock samples were collected during mapping of most minor drainages (primarily from float samples). Approximately 10% of these samples returned between 0.1 and 8.26 ppm Au. A trend of As and Sb in soil in the south eastern part of the area corresponds to a strongly developed NNE aeromagnetic linear low <sup>(27)</sup>.

Soil sampling was extended to the north east of the area in 1996 with 151 samples collected and assayed for Au as well as Cu, Pb, Zn, Ag, As, Mo, Sb and Te <sup>(27)</sup>. A NW trending branch of the Lower Station Creek area was also investigated near an aeromagnetic high as a source for the Poseidon BCL Au anomaly. Thirteen rock samples were taken (from skarn rock float and outcrop) with no significant gold returned (max 0.08ppm Au).

Four distinct magnetic lows within a broader magnetic high are present in the Station Creek area as detected in the 2002 magnetics flown by Pasminco (Figure 17). Some similarities are evident between the magnetics at the Mount Morgan Gold Mine and the magnetics visible at Station Creek.

A Thorium 45c high (unfortunately crossing over the tenement boundary) is also present in the western portions of the Station prospect (Figure 18), and this high will need to be followed up at some stage in the future.

### Exploration Potential

Four pronounced magnetic lows within a broad magnetic high is comparable to in appearance to the magnetic signatures at Mount Morgan and Discoverer Two.

Two felsic plutons add interest to this prospect that requires air core drilling through eluvium to basement.



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### **Recommended Exploration Programme**

Collation of modern, high-resolution magnetics is complete. The four pronounced magnetic low anomalies warrant several deep holes with corresponding down-hole EM to test these zones of apparent magnetite destruction.

‘Station Creek’ needs to be drilled to determine if alteration suggested by TMI images is hydrothermal and related to quartz porphyry intrusions or mineralized Mine Corridor Volcanics equivalents.

### **Exploration Strategy and Budget**

Salva has prepared an exploration budget to fund the future assessment of the company’s key Mt. Morgan targets over the next 24 months. The program includes a full data compilation exercise, geological mapping, detailed structural mapping to better define possible controls on mineralization, relogging of existing core (which may be currently stored in Mt. Morgan), trenching, geophysics and targeted drilling.

Re-interpretation of the previously flown high resolution airborne geophysics shall be conducted and drill targets generated from this investigation.

Exploration by Harvest Metals is based on the belief that the depth potential of the prospects has not been adequately tested. Harvest Metals intends to focus on areas that have already been identified as especially favorable for the formation of copper and gold deposits.

A total budget of \$3.16 million for the Mt. Morgan tenement is proposed by Harvest Metals for the next two years, and is broken down in Table 6. The exploration program for Year Two will ultimately depend upon the results of the Year One program and may be revised or varied in accordance with those results.



Table 6: Proposed Expenditure within the Mt. Morgan Projects

<b>Proposed Expenditure within the Mt. Morgan Projects</b>			
<b>Activity</b>	<b>\$ Year 1</b>	<b>\$ Year 2</b>	<b>\$ Total</b>
Compilation of previous exploration data	120,000	NA	120,000
Remote Sensing	10,000	10,000	20,000
Geophysical surveying and interpretation	20,000	20,000	40,000
Geochemistry	250,000	450,000	700,000
Reverse Circulation Drilling	500,000	700,000	1,200,000
Diamond Drilling	100,000	200,000	300,000
Geological Salaries and Consultancy charges	200,000	250,000	450,000
Field costs	100,000	150,000	250,000
Tenure and administration	40,000	40,000	80,000
<b>TOTAL</b>	<b>1,340,000</b>	<b>1,820,000</b>	<b>3,160,000</b>

## Summary and Conclusions

- Harvest Metals has obtained a commanding strategic position by securing titles that cover some of the most geologically prospective areas within the Mt. Morgan and Chillagoe regions of Queensland.
- Previous exploration has revealed a number of prospective copper and gold deposits that require fairly modest expenditures to advance the understanding of the mineralisation.
- Salva considers that the projects have been acquired on the basis of sound technical merit and are sufficiently prospective for gold, copper and associated minerals to warrant further exploratory work and follow-up assessment of their economic potential.
- Salva considers the mineral properties in which Harvest Metals has an interest, most notably Leane's Prospect in Chillagoe, and the Discoverer Two Prospect in Mt. Morgan, to largely represent 'advanced exploration targets'.
- There is very good potential within the company's Queensland tenements for the discovery of new copper-gold deposits.





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## Glossary of Technical Terms

alluvium	Sediment transported and deposited by running fresh water
alteration	The change in the mineral composition of a rock, commonly due to hydrothermal activity.
anticline	A fold in rocks in which strata dip in opposite directions away from the central axis.
Archaean	The earliest period of geological time, prior to 2500 million years ago.
A to P	Authority to Prospect.
BLEG	Bulk Leach Extractable Gold – A Geochemical sampling technique for collecting soils or stream sediment samples, which is primarily used for gold exploration.
breccia	Rock comprising angular fragments enclosed in a finer grained matrix.
bulk density	The density of a rock which takes into account voids.
calcite	A mineral of composition $\text{CaCO}_3$ (calcium carbonate), which is an essential constituent of limestone, marbles or a product of hydrothermal alteration.
Cambrian	Subdivision of geological time covering the period from 545 million years to 490 million years ago.
carbonate	A rock, usually of sedimentary origin, composed primarily of calcium, magnesium or iron and $\text{CO}_2$ . Essential component of limestone and marble, but may also occur as a product of alteration.
Carboniferous	Period of the Paleozoic era, between approximately 354 million years and 298 million years ago.
chalcopyrite	A brass-yellow mineral, composition $\text{CuFeS}_2$ , and the most important source of copper.
cleavage	Close-spaced, planar fabric in a rock produced by the alignment and segregation of platy minerals during folding and shearing.
colluvium	Sediment transported by weakly selective, non-fluvial processes such as mass-wasting and slope wash.
cover	Un-mineralized overburden overlying a mineralized or potentially mineralized lithology.
conglomerate	A rock composed predominantly of rounded pebbles, cobbles or boulders deposited by the action of water.



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Cretaceous	The third and final period of the Mesozoic era, between 141 and 65 million years ago
cross-bedding	Having minor beds or laminae lying oblique to the main beds of stratified rock. Commonly developed in sandstone deposited by the action of wind or water.
Devonian	The fourth period, in order of decreasing age, of the periods comprising the Paleozoic era, from 410 to 354 million years ago.
dolomite	A carbonate rock containing both calcium and magnesium with up to 21% MgO.
Dyke	A tabular or sheet-like igneous intrusion that cuts across the bedding or foliation in the country rock.
EPM	Exploration Permit for Minerals
EPMA	Exploration Permit for Minerals currently under Application
fault	A fracture or fracture zone in the earth's crust along which displacement of opposing sides has occurred.
ferruginous	Containing or rich in iron.
geochemistry	A branch of chemistry that is the study of the chemical composition of the Earth and its rocks and minerals.
geophysics	A branch of physics that uses seismic, gravitational, electrical, thermal, radiometric, and magnetic properties of the Earth to aid the identification of underground structures or ore bodies.
grade	The relative quantity or the percentage of ore-mineral or metal content in an ore body.
gravimetric	An analytical method relying on the change in mass before and after a reaction to determine the percentage of components lost.
Ha	Hectare, standard metric unit area 100m by 100m.
igneous	Rock or mineral that solidified from molten or partly molten magma.
intrusive	A mass of igneous rocks that, while molten, was forced into or between other rocks.
JORC	Joint Ore Reserves Committee of the Australian Institute of Mining and Metallurgy. Code of reporting of exploration results, mineral resources and ore reserves.
Jurassic	The middle division of the Mesozoic era.
license	Mineral tenement, exploration license or mining lease.

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limestone	A sedimentary rock containing at least 50% calcium or calcium magnesium carbonate.
lode	A mineralized body resulting from the extensive replacement of pre-existing rock.
Ma	Millions of years ago
magnetics	A measurement of the variations in the Earth's magnetic field using an instrument transported by an aircraft.
Mesozoic following	The era of geologic time between approximately 250Ma and 65Ma, the Paleozoic and preceding the Cainozoic era.
metamorphosed	The mineralogical, chemical, and structural adjustment of solid rocks to physical and chemical conditions that have generally been imposed at great depths.
Mineral Resource	A concentration of material of economic interest in or on the earth's crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction.
outcrop	The area over which a particular rock occurs at the surface.
Ordovician	Subdivision of geological time covering the period from 495million years to 442 million years ago.
Palaeozoic	An Era of geologic time spanning the period from 544 million years ago to 248 million years ago.
porphyry	An igneous rock of any composition that contains conspicuous phenocrysts in a fine-grained groundmass.
Ppm	Parts Per Million – A measure of units of equivalence to grams per tonne.
pyrite	An iron sulphide mineral, composition $FeS_2$ , pale bronze to brass yellow colour.
quartz	A mineral composed of silicon dioxide, $SiO_2$ .
Quaternary	That period of time between 1.8 million years before present and the present day.
radiometric	Geophysical technique for the detection of emission spectra in the search for radioactive minerals.
sediment	Solid fragmental material derived from weathered rocks and transported or deposited by air, water or ice, or accumulates by chemical precipitation or secretion by organisms, forming layers on the surface at ordinary temperatures.

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shear zone	A zone of ductile deformation between two relatively un-deformed blocks that have suffered relative shear displacement; the ductile analogue of a fault.
silicification	Replacement by, or introduction of, appreciable quantities of silica, via hydrothermal alteration.
siltstone	A rock intermediate in character between shale and sandstone composed of silt-sized grains.
specific gravity	The weight of a substance compared with the weight of an equal volume of pure water at 4° C.
strike	Horizontal direction or trend of a geological structure.
sulphide	A metallic mineral containing sulphur, usually comprising or associated with mineralization.
syncline the axis.	A fold in rocks in which the strata dip inward from both sides towards the axis.
tenement	See license
terrane	A region of crust with well-defined margins, which differs significantly in tectonic evolution from neighboring regions.
Tertiary	Subdivision of geological time covering the period from 65million years to 1.8 million years ago.
Triassic	Subdivision of geological time covering the period from 248million years to 206 million years ago.
unconformably	Having the relation of uniformity to the underlying rocks; not succeeding the underlying strata in immediate order of age or parallel position.
Valmin	The Valmin Code is the 'Code for Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Experts Reports.
vuggy	Having numerous vughs or cavities.
weathering	The effect on rocks and ore minerals of prolonged exposure to atmospheric elements such as water and oxygen.
XRF	X-Ray Fluorescence, a common analytical method for determining the chemical composition of rocks and minerals.

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## Abbreviations

Ag	Silver	Ni	Nickel
As	Arsenic	Pb	Lead
Au	Gold	Sb	Antimony
Co	Cobalt	Th	Thorium
Cu	Copper	U	Uranium
FeO	Iron Oxide	V	Vanadium
K	Potassium	Zn	Zinc
ppb	Parts per billion	EPM	Exploration Permit for Minerals
ppm	Parts per million	ML	Mining Lease
ppm	Grams per tonne	km	Kilometres
RC	Reverse Circulation drilling technique	km <sup>2</sup>	Square Kilometres
kg	Kilogram		

## References

1. Queensland Government Mines and Energy:- Mount Morgan Mine Rehabilitation Project: Project Summary.
2. A. Taube – ATP508M, Geopeko, Report to Queensland Mines Department for Year Ending 31<sup>st</sup> December, 1975.
3. T.A. Ballinger – Geology of The Struck Oil Porphyry Copper Project, 1976.
4. D. Young – EPM 4,231M, Freeport of Australia Inc., Geolbera Range – East Queensland, Report for the Six Months ended 4<sup>th</sup> September 1986.
5. M.N. Stallman – EPM 4,231M, Freeport Australian Minerals Ltd, Geolbera Range – East Queensland, Report for the Six Months ended 4<sup>th</sup> March 1989.
6. D.C. Frets – ATP508M, Geopeko Ltd, Report to Queensland Mines Department for Year Ending December 31 1970.
7. R. Taube – EPMs 9,382 and 9,451, Newcrest Mining Ltd, Third Combined Annual Report on work conducted in the 12 months ending 6 June 1996.
8. G. Arnold – Report to Lodestone Exploration Ltd. Notes on the Morganite Prospect, N-NW of Mt Morgan, Qld.
9. I.G. Witcher – ATP 921M, CRA Exploration Pty Ltd, Exploration of the Moongan Area Mt Morgan District.
10. D.I. Young – EPM 6,010M, Eagle Mining Corporation N.L., Rockhampton District Queensland Report for the Two Year Period Ending 23<sup>rd</sup> August 1998.
11. A.R. Hughes and R.H. Harvey – ATP921M, CRA Exploration Pty Ltd, Investigations on Moongan ML130 Central Queensland 1981-1983.
12. D.C. Frets – ATP508M, Geopeko Ltd, Report to Queensland Mines Department for Year Ending December 31 1971.
13. Unknown –BHP Minerals Ltd, EPM 3,539M, Mt Morgan Queensland, Report for six months ended 15 July 1984.
14. A. Taube – ATP508M, Geopeko, Results of Stratigraphic Drilling carried out in the Mount Morgan Mine Corridor by the Queensland Department of Mines 1978-79.
15. M.N. Stallman – EPM 4,231M, Freeport Australian Minerals Ltd, Geolbera Range – East Queensland, Report for the Six Months ended 3<sup>rd</sup> September 1988.
16. ATP403M, Geopeko, Final Report Authority to Prospect 403M held by Morgan Mining and Industrial Co Pty Ltd 28<sup>th</sup> October 1968.



17. D.C. Frets - ATP508M, Geopeko Ltd, Report to Queensland Mines Department for Year Ending December 31 1972.
18. J. McCawley – Lodestone Exploration Ltd, Activities Report for Quarter Ended Dec 31, 2006.
19. Unknown - Lodestone Exploration Ltd, Annual Report for Year Ended 30 June 2007.
20. J. McCawley – Lodestone Exploration Ltd, Mount Morgan Project: Midas Prospect Update, December 14, 2006.
21. J. McCawley – Lodestone Exploration Ltd, Exploration Update, 23 February 2007.
22. D. Richards – RGC, 3953M and 4007M, Mt Morgan Qld Six Monthly Report to 31.1.90.
23. Paul Mazzoni – Coffey Mining Pty Ltd, Chief Geologist, Summary Independent Experts Report, Mungana Prospectus – 2010.
24. Kagara website [www.kagara.com.au](http://www.kagara.com.au)
25. John McCawley - 2010 CDI Application – Lodestone Energy Ltd
26. R. Taube - Newcrest Mining Ltd, Third Combined Annual Report on work conducted in the 12 months ending 6<sup>th</sup> June 1996 EPMs 9,382 and 9,451
27. P. Wright - Newcrest Mining Ltd, Combined Annual Report Mt Morgan EPMs 9382 and 9451 for Period Ending 6<sup>th</sup> June 1995
28. Fleming, G.J., Findlay A.R., and Jensen K. 1984. EPM 3,551 and EPM 3,552. Six months and final report. Unpublished report to the Department of Mines CR14106.
29. Barron P, 1989. Final Report A to P 3753M, Lamorna Mines Pty Ltd, April 1989. Unpublished report to the Department of Mines CR 21321.
30. Meyer and Stephenson, J. 1989. AP5594 Final Report. Unpublished Report to the Department of Mines CR 21298.
31. Nethery J.E. 1996. EPM 10,813. Final and Annual Report. Unpublished report to the Department of Mines CR29256.
32. Nethery J.E., 2008. EPM 11980. Report on the Geology of the Limestone Creek project.
33. M.N. Stallman and D.I. Young – Freeport Australian Minerals Ltd, Authority to Prospect no, 4231M, Gelobera Range – East Qld. Report for the Sixth Month period ended 3<sup>rd</sup> September 1988.
34. J.L. McCawley – EPM 14,696 Morganite East, Lodestone Energy Ltd, Mount Morgan Project Fifth Annual Report Year Ended 19 January 2010.
35. W. Delaney – Gold Fields Exploration Pty Ltd, Six Monthly Report A to P 3953M Mt Morgan, for the period 31<sup>st</sup> January t 31<sup>st</sup> July 1985.
36. D. Richards - Gold Fields Exploration Pty Ltd, Authorities to Prospect 3953M and 4007M, Mt Morgan Queensland, Six Monthly Report to 31<sup>st</sup> January 1986.
37. Young D., 1986, A to P #4231M, Gelobera Range – East Qld. Report for the Six Months Ended 4<sup>th</sup> September 1986, cr16210).
38. J. McCawley – Lodestone Energy Ltd, EPM 17850 Mount Morgan Consolidated, Mount Morgan District First Annual Report, Year Ended 15 April 2011.
39. Kagara Limited website <http://www.kagara.com.au>
40. Mungana Gold Mines website <http://www.munganagoldmines.com.au/>
41. Denmead, A.K., 1932: Alluvial gold mining in Queensland. Queensland Government Mining Journal, 33, 114-115, 142-143.