EPM 11837 Mount Gelobera
EPM 11838 Walmul West
EPM 11841 Walmul

Mount Morgan Project

Fifth Annual Report

Year Ended 17 May 2005

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1.0 SUMMARY

Lodestone Exploration and BHP Billiton (BHPB) are searching for Mount Morgan and other style VMS deposits below the cover rocks north and south of the Mount Morgan deposit. Targets are gold and/or base metals.

The main methods used are:

- Geological mapping
- Reinterpretation of historic geochemical data
- Aeromagnetic survey
- Ground-based magnetic surveys
- Airborne electromagnetic surveys
- Ground-based electromagnetic surveys
- Ground-based gravity surveys
- Reverse circulation and diamond drilling

Interest is focused on buried felsic horizons west of the trondhjemite belt.

2. INTRODUCTION

2.1 TENURE INFORMATION

EPMs 11837, 11838 and 11841 were granted on 18 May, 2000, for an initial period of two years. Applications for renewal were lodged in April 2002, 2003, 2004 and 2005.

The EPMs are three of 10, known as Lodestone's Mount Morgan Project. Seven of the permits are explored in an alliance between Lodestone Exploration Limited and BHP Billiton Minerals Pty Ltd. This alliance is registered with the Department and provides, inter alia, for BHP Billiton Minerals Pty. Ltd. to earn 70% of a significant mineral discovery by spending $8 million on exploration. Subsequent expenditure would be shared pro-rata.

2.2 BLOCKS AND SUB-BLOCKS

EPM 11837:	Rock 3247:X Rock 3319:CDEHJKNOPSTUXYZ Rock 3320:FLQV
EPM 11838:	Rock 3172:NOPSTUXYZ Rock 3173:QV Rock 3244:CDEHJKNOPSTU Rock 3245:AFLQ
EPM 11841:	Rock 3173:MNRSWXYZ Rock 3174:V Rock 3245:BCDEGHJKMNOPRSTU Rock 3246: AFLQ

2.3 LOCATION

The tenements are located between 10 kms and 30 kms south east of Mount Morgan, as shown in Attachment 1.

2.4 PROJECT AREA AND ACCESS

Most of the project area is freehold or leasehold land. It is mainly cattle country, selectively cleared, with small pockets of cultivation and horticulture. About two-thirds of the terrain is flat or undulating, and one third is rugged.

Access is via Highway 17, that links Rockhampton, Mount Morgan and Biloela, and via numerous well formed rural roads that are open most of the time but deteriorate rapidly in wet weather. Local flash flooding can deny access.

The area is well located, in terms of road, rail, energy, and ports infrastructure.

2.5 EXPLORATION RATIONALE

- Mount Morgan is a VMS type pipe related to middle Devonian felsic volcanism, and coeval units are potential productive hosts.
- Mount Morgan belongs to the Horne, Bousquet and Boliden suite of copper-gold deposits.
- 'Another Mount Morgan' might not be a pipe, might not have the same alteration, and might not even have the same mineralogy. A stratabound layer of zinc-rich VMS with high As, Ag, Sb and intense sulphidation alteration could just as easily be present.
- Lodestone/BHPB's targets are pipes and stratabound equivalents of the Mount Morgan and 'Car Park' deposits.
- Key units are the low K rhyolite pyroclastics, the comagmatic porphyry, elements of the trondhjemite pluton and, possibly, wet sediments represented by the Mine Series.
- West of the trondhjemite belt, to the South of Mount Morgan, these units are largely concealed by the late Devonian – Carboniferous cover sequence. Elements are exposed in Emu Creek and and Pomegranate Station.
- Consequently the expected subcrop of these units below the cover sequence is the target of extensive deep-penetrating EM surveys, gravity surveys and drilling.

2.6 PROGRAM AND METHODS

The exploration program undertaken to date on EPMs 11837, 11838 and 11841 include:

- Geological mapping.
- Recompilation and ranking of historic stream sediment samples.
- TEMPEST airborne electromagnetics.
- Fugro ground electromagnetics.
- DAISHSAT precision gravity.
- Reverse circulation and diamond drilling.

2.7 LITERATURE SEARCHES

Searches of more than 150 journal papers, two PhD Theses, and 50+ open file reports, plus discussions with select authors and State Government Geoscientists have helped generate, qualify and enhance target models.

3.0 GEOLOGY

3.1 REGIONAL SETTING

The Mount Morgan copper-gold deposits are located in the Calliope terrane, a Lower to Middle Devonian volcano-sedimentary succession, termed the Capella Creek Group, and with co-genetic sub-volcanic granitoids ascribed to the Mount Morgan Tonalite. The Capella Creek Group is divided by Blake et al, 2001, into the basal Mount Dick Beds (andesitic to dacitic lavas, siltstones, jasper, minor rhyolitic volcaniclastics), Mount Warner Volcanics (comprising footwall andesitic volcanics, crenulated cherty rhyolite lavas, Banded Mine Sequence of bedded rhyolitic volcaniclastics and jaspers and Hanging Wall sequence of rhyolitic volcaniclastics, jasper and limestone) and the Raspberry Creek Formation (basaltic to andesitic volcaniclastics, limestone, dacitic volcanic-lastics).

The Mount Morgan deposits occur in the Mount Warner Volcanics within a transgressive porphyry body that in part cuts the Banded Mine Sequence and probably extends into the lower Hanging Wall sequence. Various phases of the Mount Morgan Tonalite including dominant trondhjemite and subordinate tonalite, quartz diorite and quartz gabbro intrude the Capella Creek Group such that the Mount Warner Volcanics form a pendant wedge extending southeast from the mine. The late Devonian – Early Carboniferous Yarrol Terrane uncomformably overlies the Capella Creek group and is represented by the basal andesitic to dacitic Mount Hoopbound Formation (formerly the Dee Volcanics). Permian to Triassic intrusive activity also occurs in the region and is responsible for some of the mineralisation recorded.

Aeromagnetics show the Capella Creek Group (containing the Mount Warner Volcanics) to be essentially non-magnetic. Similarly the uncomformable Mount Hoopbound Formation is non-magnetic. The Mount Morgan Tonalite has a very weak magnetic expression except for gabbroic phases which are moderate to strongly magnetic. The low potassium nature of these units does not allow for radiometric discrimination either. Source: Dr. P W Gregory, 2001, Unpublished Report for Lodestone Exploration Pty Ltd.

3.2 REGIONAL TECTONIC ELEMENTS

The key regional feature in the district is a northwest-trending 'arch' 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. The core comprises the Mount Morgan tonalite, trondhjemite and felsic units of the Middle Devonian, including the Mine Corridor. This feature is probably the centre of Middle Devonian volcanism with the chief felsic volcanic centres and related VMS deposits lying along this axis.

3.3 GENERAL GEOLOGY

The project area is underlain by the Capella Creek Group, a variety of intrusive rocks, and a series of gently dipping Devonian and Carboniferous sedimentary rocks. The Capella Creek Group consists of Middle Devonian, low K felsic volcanic rocks and slightly younger sediments and minor volcanics of the Raspberry Creek Formation. These two units form a large synclinal structure between the mine and the Southern end of the tenements with felsic units of the east limb near Mount Dick – Mount Hoopbound, and a west limb – poorly exposed – in the Beschs Hill – Pomegranate area. Most of the west limb is overlain by the cover sequence – and is the target of the program. The felsic volcanics and the Mount Morgan pluton are hi Na/ K rocks unique to the middle Devonian in the Mount Morgan region.

3.4 TARGET AREAS

The main emphasis within these three EPMs is on definition of possible analogues of the Mount Morgan deposit.

Associations used for the conceptually defined areas of interest include:

1. Near and at the top of the Mt Warner Volcanics and their correlatives (submarine felsic volcanic rocks and sub-volcanic intrusive rhyolite of middle Devonian age);

2. The vicinity of the contact between the middle Devonian Mt Warner Volcanics (predominantly a marine felsic volcanic sequence containing lenticular, sub-volcanic rhyolitic intrusive complexes) and the Raspberry Creek Formation (a mixed marine volcaniclastic sediment and intermediate to felsic volcanic rock succession);

3. Major lithological contacts between volcanic rock successions and the intrusive trondhjemite;

4. Major lithological-layer strike parallel faults, usually on or adjacent to the major litholical contacts;

5. A magnetic potential field signature indicative of alteration on faults, on lithological contacts, and within or adjacent to intrusive bodies. Source: Dr. Douglas Haynes, 2003, Unpublished Report for Lodestone Exploration Limited.

4.0 GEOPHYSICS

All three EPMs have been covered by airborne electromagnetic and gravity surveys to the following extents:

- **EPM 11837**. More than 70% coverage by GEOTEM in 2000.

  One GEOTEM anomaly, labelled G5, was recognised by INFOFIELD and subsequently drilled in May 2003. See Section 6.2.

  A DAISHSAT gravity survey, planned over geochemically anomalous rhyolites and breccias in September 2004, did not proceed for technical reasons. 10 of 18 sub-blocks were subsequently relinquished this year.

- **EPM 11838**. Approximately 10% of this tenement was overflown with TEMPEST in September 2002. One deep AEM anomaly was confirmed with ground EM in August 2003.

  An additional 20% of the tenement has been covered with DAISHSAT gravity in 2003 and 2004. Several gravity and one aeromagnetic anomaly were checked with additional gravity traverses. This has completed planned coverage. 11 of 21 sub-blocks were subsequently relinquished this year.

- **EPM 11841.** Approximately 80% of this tenement was overflown by two TEMPEST surveys in 2002. Four conductors were recognised by BHPB in 2002 and two by Fugro in 2003. Fugro's anomalies were confirmed by ground EM survey in August 2003 and drilled in September 2003. See Section 6.5.

  Approximately 60% of this tenement was covered by DAISHSAT gravity surveys in 2003 and 2004. Recce gravity at nominally 300 metre station intervals was followed by gridding at 100 metre intervals.

  One anomaly, labelled 1105, survived this process, was modelled using 3D inversion software, and drilled in December 2004 (See Section 6.5).

  Another, labelled 1147, was downgraded and written off.

  Several other anomalies are thought to be due to regional trends, topographic effects or software artefacts, and consequently appear to lack significance.

5.0 GEOCHEMISTRY

AUSMEC Geoscience recompiled and ranked all of the published stream sediment survey results for the entire Mount Morgan district, including the area covered by EPMs 11837, 11838 and 11841. An outline of the scope and methodology follows.

5.1 GENERAL

"Approximately 23,000 stream sediment samples were assessed for Lodestone Exploration in the Mount Morgan district. Some 3000 of these are located within EPMs 11837, 11838 and 11841. Samples were predominantly sieved stream sediment (SSS) samples with relatively minor bulk cyanide leach (BCL) and panned concentrate (PC) samples. For the SSS samples, mesh sizes in the data comprised -60#, -80#, -200# and unspecified mesh.

The samples in the database were collected by numerous explorers over several decades, and were analysed by various laboratories using differing methods – the database differentiates over 60 different batches through the field "Job No.".

In order to use this stream sediment geochemistry to interpret mineralised target areas, it was necessary to level the data with the aim of countering sampling and laboratory variance between the different data types and laboratory analysis batches and methods. What should be left is geological variance, of which mineralisation is one factor, the other main factors being lithology and regolith.

5.2 METHODOLOGY

The data was subset based on each data type, and then further subset by the various batches (or Job Nos.). Frequency distribution histograms were prepared for each element to be assessed for each subset, and geochemical populations present were determined.

These populations were assigned numbers to allow comparison with the same populations in other data subsets, irrespective of the absolute values (thresholds) that define each population.

To assess the geochemistry as a whole, population numbers for the four elements were used in MapInfo to produce thematic maps for interpretation." Source: Rod Dawney, 2003, Unpublished Internal Report, for Lodestone Exploration Limited.

5.3 OUTCOMES

5.3.1 Gold. A cluster of stream sediment samples carrying anomalous gold values is located in the North-West corner of EPM 11838 centred on 7376000N and 224000E. The significance of this cluster is not yet understood.

A second cluster of anomalous stream sediment gold values exists in the South-West corner of EPM 11841 and is probably related to the Permian 'Sugarloaf' intrusion. As such, it holds little interest.

There are no anomalous stream sediment gold values evident in EPM 11837. This is not to suggest that none exist, as many historic stream sediment samples were analysed for base metals but not for gold.

5.3.2 Copper. Patchy anomalous copper values occur around the margin of Permo-Triassic diorite in the South-East corner of EPM 11838 near 7365000N and 230000E.

Three clusters of anomalous copper values are located on EPM 11841. Two are South and East of Fletcher's Hill, in the general area of 7370000N and 234000E. The third is located on the eastern margin of the Perma-Triassic diorite noted in EPM 11838. Approximate co-ordinates are 7365000N and 233000E. They are unlikely to represent VMS style of mineralisation that is the focus of Lodestone's and BHPB's search.

EPM 11837 exhibits widespread copper anomalism centred on 7357000N and 252000E, and warrants additional fieldwork.

5.3.3 Zinc. Historic stream sediment samples from EPM 11838 do not exhibit any anomalous values.

Anomalous zinc, possibly remobilised from the mid-Devonian at depth, occurs in three clusters centred on 7371000N and 234000E. These coincide with a circular magnetic feature and require thorough review. This zone has been labelled AUSMEC 7.

Anomalous zinc coincides with anomalous copper in EPM 11837. Reasons for this anomalism are unclear and also require thorough review. This zone has been labelled AUSMEC 14.

6.0 DRILLING

6.1 GEOTEM Target G5, located in EPM 11837, was drilled in May 2003.

G5-1, a diamond-tailed reverse circulation vertical hole was drilled to 81 metres

G5-2, a second such hole, was collared nearby and drilled to 153 metres.

No conclusive explanation for the GEOTEM anomaly followed, and the anomaly was probably a software artefact.

Both holes demonstrated that the Hoopbound formation cover rocks are much thicker than previously envisaged and the Hoopbound formation-intrusive unconformity is much steeper than expected.

Most significantly, it followed that GEOTEM anomaly G5 was hosted by the Hoopbound formation, rather than the inferred, and older, 'mine corridor' subcrop and could consequently be written off.

6.2 TEMPEST Target MMS01 located in EPM 11841 and centred on 238072E/7372042N was a 'priority one' target selected by BHPB. Two holes were drilled in May 2003, and the second hole deepened in September 2003. MMS01 is located in the North-East corner of EPM 11841 as shown in Attachment 7.3.

Both holes intersected 'red beds' thought to be paleo sediments and pyroclastics of the Hoopbound formation.

Detailed relogging of cores by Dr. Tim Hopwood revealed an eight metre section of fine-grained pyrite, and magnetite coated with haematite was the source of the conductor rather than an andesitic horizon or the 'red beds' as earlier thought.

Rare mineralisation, including native copper, was noted in the corner but nothing of geological or commercial significance.

As in the case of G5 it became evident that the unconformity between the trondhjemite belt and the Hoopbound formation dipped far more steeply than earlier envisaged and the Hoopbound rocks covering the inferred 'mine corridor' subcrop were materially thicker than commonly thought. At MMS01 the Hoopbound is 300 metres thick and the angle of its basement dip westerly is unknown.

Consequently the mine corridor subcrop in EPM 11841 is likely to be deeply buried. Shallow airborne electromagnetic anomalies are unlikely to represent mineralisation in the targeted subcrop.

6.3 Fletcher's Hill. Two NQ core holes were drilled on the southern slopes of Fletcher's Hill within EPM 11841 to test TEMPEST anomalies that had been picked by Fugro and confirmed by their ground EM.

Both holes were collared in Hoopbound formation rocks. FL-1 was collared at 232841E/7369443N in feldspathic crystal tuff and drilled to 126 metres. FL-2 was collared at 233376E/7369381N in ferruginous andesites and drilled to 152 metres.

Neither hole encountered any visible mineralisation or explanation for the conductor.

6.4 Gravity anomaly 1105 situated 900-1200 metres north-east of Fletcher's Hill at 233890E/7370030N was drilled in December 2005. Four holes, totalling 290 metres of NQ core, failed to explain the anomaly modelled by S J Geophysics of Vancouver. It is possible the anomaly relates to skarn, at depths greater than 200 metres, but is unlikely to represent VMS style mineralisation. S J Geophysics has proposed a second hole and consideration will be given to this recommendation after data inversion and remodelling by BHPB.

ATTACHMENT 7.2

ENVIRONMENTAL MANAGEMENT REPORT
SEPTEMBER 2005

Lodestone has complied with the Code of Practice for Environmental Management for Exploration Permits in Queensland in that:

1. **As regards land management:**

    - Exploration has consisted of geological mapping, soil and rock chip sampling, electromagnetic and gravity data collection, and reverse circulation and diamond drilling.

    - These activities have not had any material effect on the terrain, vegetation, wildlife or livestock.

2. **As regards water management:**

    - No riparian material has been removed.

3. **Social:**

    - There has been negligible noise or dust nuisance.
    - Nor has there been any disruption to Native Title rights and interests.

Exploration has been carried out at all times with regard to the expressed needs of local landholders.

John McCawley
3 September 2005