MALACHITE RESOURCES NL

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MT RAMSAY PROJECT
EL 42/2002

FINAL EXPLORATION REPORT

NOTE: All data presented with the AGD-66 map datum.

Distribution

1. Malachite Resources NL
2. BHP Billiton Minerals Pty Ltd
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1.0 INTRODUCTION

This Final Report summarises the results of exploration work carried out by the joint venture between Malachite Resources NL ("Malachite") and BHP Billiton Minerals Pty Ltd ("BHP Billiton") on the Mt Ramsay Project (EL 42/2002) during the period 23 August 2003 to the present (July 2007). EL 42/2002 was originally granted to BHP Billiton in August 2003. In June 2004, BHP Billiton farmed out an interest in EL 42/2002 in equal portions to Malachite and TasGold Limited ("TasGold"), with Malachite appointed as the Manager of the Mt Ramsay Joint Venture ("MRJV"). TasGold has subsequently withdrawn from the MRJV effective 4 March 2006.

The objective of the Mt Ramsay Project is to discover a significant economic deposit of tin, tungsten and/or base/precious metals. The main exploration target at Mt Ramsay is carbonate-replacement style tin (± tungsten/base metals) mineralisation, similar to that seen at the nearby Mt Bischoff and Renison Bell tin deposits.

A series of EM conductors located on the Mt Ramsay tenement were targeted for potential tin-bearing massive sulphide mineralisation. A ground EM survey, soil and rock chip sampling, and one diamond drill hole (MRDD01) were completed.

2.0 LOCATION AND TENURE

The Mt Ramsay Project is centred approximately 23 km north of the Renison Bell tin mine in western Tasmania (**Figure 1**). Access to the project area is from the Waratah-Savage River road, turning off this road approximately 7 km SW of Waratah and driving a further 1 km south to Wombat Flat. From here an abandoned 4WD track extends approximately 10km from north to south through the Mt Ramsay tenement. Access along this 4WD track is limited, with permission required from Parks Tasmania who have placed a locked gate across the track at Wombat Flat to prevent public access. Furthermore, access is restricted to approved all-terrain vehicles due to the condition of the track.

The project is located on uncommitted Crown land within the Meredith Range Regional Reserve (No. 2000/241), which was declared under the Tasmanian National Parks and Reserves Management Act (2002). Regional reserves were established over Crown land set aside for multiple-purpose use, and importantly one of the primary purposes of regional reserves is the utilization of any mineral resources they may contain.

EL 42/2002 is located in the Ramsay River catchment, immediately east of Mt Ramsay (855m), the major topographic feature in the region. The terrain is generally steep with myrtle (*Nothofagus cunninghamii*) as the dominant cool temperate rainforest species, accompanied by sassafras (*Atherosperma moschatum*). Although the understorey is relatively open with tree ferns (*Dicksonia antarctica*) and native laurel (*Anopterus glandulosus*) predominating, horizontal scrub (*Anodopetalum biglandulosum*) is common on the flatter areas immediately east of the abandoned 4WD track and is also common in creek gullies.

The tenement covers an area of 24 sq km and was granted on 22 August 2003 for a period of five years until 22 August 2008. The annual statutory expenditure commitment for EL 42/2002 is $48,000. BHP Billiton currently holds a 100% interest in the tenement, entered into a farm-out

agreement with Malachite Resources NL and TasGold Limited. Due to the withdrawal of TasGold, all obligations within this farm-out agreement have now been assumed by Malachite.

3.0 REGIONAL GEOLOGY

The project lies within the Dundas Element (formerly the Dundas Trough), comprising Proterozoic- to Cambrian-aged sequences of western Tasmania, located east of the Arthur Lineament (Seymour and Calver, 1995, and Bottrill et al., 1998). The regional setting of the Mt Ramsay area and the location of the major carbonate replacement tin deposits (Renison Bell, Mt Bischoff and Cleveland) are shown on **Figure 1**.

The Mt Ramsay region has been mapped by Brown (1986) and the most detailed published geological map is the 1:25,000 "Regional Geology of the Dundas – Mt Lindsay – Mt Ramsay Area" which accompanies Brown's report. The project geology included in **Figure 1** is taken from Brown's map.

At Mt Ramsay, two adjoining sequences lie to the east of the Devonian Meredith Granite. The western of these sequences, which is in contact with the Meredith Granite throughout the tenement, is the Cambrian Crimson Creek Formation which regionally consists of volcanoclastic siltstone and mudstone, minor carbonate lenses, and contains up to 25% of basaltic lava flows in the Mt Ramsay area. The eastern sequence comprises locally isoclinally folded sedimentary members of the Proterozoic Oonah Formation, regionally consisting of quartz sandstone, siltstone and mudstone, but with thinly bedded calcareous siltstone dominating in the Mt Ramsay area. The contact between the Crimson Creek Formation and the Oonah Formation sequences at Mt Ramsay has been mapped by Brown as a fault.

The Meredith Granite in the Mt Ramsay area consists of porphyritic medium grained to very coarse grained biotite granite/adamellite with phenocrysts of feldspar up to 25mm long (Brown, 1986). The granite intrudes the Crimson Creek Formation lithologies, and a broad metamorphic aureole extends for up to two kilometers east of the granite contact, affecting both the Crimson Creek Formation and Oonah Formation lithologies and resulting in conversion of the dominantly calcareous horizons to recrystallised carbonate and the mudstone and sandstone units to hornfels. The Meredith Granite is considered to be the source of the tin at deposits around its northern margin (eg. Mt Bischoff and Cleveland), and the presence of the Mt Ramsay skarn occurrence at the granite's eastern contact within the tenement, approximately one kilometer west of the northern group of EM conductors is confirmation of a granite-related mineralizing system at Mt Ramsay.

The youngest lithologies mapped at Mt Ramsay are flows of Tertiary-aged basalt which occur in the northeastern and northwestern corners of the tenement.

4.0 PREVIOUS EXPLORATION

A review of open file reports and previous exploration at Mt Ramsay was compiled by Meares (2004) and Meares (2005) and confirmed that only minimal exploration had been undertaken on the area of EL 42/2002, principally at the Mt Ramsay skarn prospect. Comstaff Pty Ltd. conducted exploration in the period 1963–1988. Drilling conducted in the early 1980's intersected anomalous values of tin, tungsten, copper, gold and bismuth in a sulphide-bearing

skarn host rock. A regional airborne (heli) EM survey covering the Mt Ramsay tenement was completed by Mineral Resources Tasmania (MRT) in 2002, which located the EM anomalies now targeted on this tenement.

5.0 LOGISTICS / ACCESS / APPROVALS

Discussions prior to all field programs at Mt Ramsay, including the drilling program, were held with relevant stakeholders including Mineral Resources Tasmania (MRT), the Tasmanian Conservation Trust, and with Tiger Trails (an ecotourism group who take bushwalkers through the Mt Ramsay area) to brief each group on our activities and to seek their comments. In addition, MRT approved all three field programs before they commenced.

As discussed above, the project area is accessed via an abandoned 4WD track. This track was significantly overgrown and required some of re-clearing and repairs prior to mobilisation into the project. A 5.5t excavator (Bradshaw Excavations from Queenstown) and three experienced trackcutters were employed to re-establish access, clear the two approved drill sites, clear a suitable location for a camp, and create two heli-pads.

Due to the remoteness of the drilling sites, a six man camp was constructed approximately 12km south of the Waratah-Savage River road. The camp consisted of a series of eight garden sheds incorporating sleeping, living, cooking, storage, showering and chemical toilet facilities. The sheds were erected on bases constructed from timber flown into the site. All cooking and heating utilised gas appliances and water was pumped to a camp holding tank from Osmond Ck approximately 1.5km to the south. All toilet waste was transported off-site within sealed drums where it was collected by Collex Waste Disposal Services. The camp was located 1.6km to the north of the southern-most drill site (MRDD01). The camp was located on a side track off the main access track to reduce the visual impact to bushwalkers. Upon completion of the drilling program the sheds were left in place, along with minimal basic emergency camp gear and food. Two helipads were established; one adjacent to the camp (‘Camp helipad’) and one approximately 1.4 km to the south of camp (‘Hilltop helipad’). The purpose of the Camp helipad was to facilitate crew changes made by helicopter and as an emergency staging and pickup point. The Hilltop helipad was closer to the drill site and was used for slinging drilling equipment to and from a staging area at Champion Heath. This pad was not used as a landing area for the helicopter, but as a laydown and storage area for drilling equipment.

Initial mobilisation of all drilling and camp equipment utilised a Seair (Wynyard) Squirrel helicopter. TasGold also supplied a rubber-tracked crawler tractor vehicle (‘crawler’) equipped with a 3 tonne crane and tipping tray. The drill rig was mobilised/demobilised to/from the site on the back of the crawler. A Squirrel helicopter from Tasmanian Helicopters (Latrobe) was employed for crew changes in and out of Waratah. A third Squirrel from Helicopter Resources (Cambridge) was utilised to demobilise all the drilling and the majority of the camp equipment to Wombat Flat at the completion of the program.

6.0 SUMMARY OF WORK COMPLETED

1. During the first year work consisted of office studies (i.e. acquisition and compilation of available geological information and past exploration data, as well as acquisition and interpretation of the airborne EM data). This work was initiated by BHP Billiton, and was

taken over by Malachite on the latter's appointment as Manager of the Mt Ramsay Joint Venture.

2. A helicopter-borne electromagnetics ("heli EM") flown as a part of the Western Tasmania Regional Minerals Program by GeoInstruments included the area of the Mt Ramsay tenement. BHP Billiton conducted a preliminary interpretation of the datasets before farming the property out to Malachite and TasGold. Mitre Geophysics Pty Ltd was engaged by Malachite to interpret the heli EM and magnetic datasets. They suggested the sources of the main two groups of conductors lie within 50m of the surface and could either be massive sulphide lenses or other bedrock sources (e.g. graphitic rocks or conductive zones within a fault or an unconformity).

3. In October 2004 an initial helicopter-supported reconnaissance field program was conducted to evaluate the potential of the northern airborne EM conductors. Work was then concentrated on this conductor group as it was the most accessible group.

4. Ground EM was then conducted along two slope-corrected grid lines approximately 775m apart. These were flagged across the inferred position of the EM conductors, which were successfully located on the ground using a portable ground EM system (EM 34). The conductors are located midway down a 40° slope which forms the eastern flank of Mt Ramsay.

5. A suite of 18 soil samples and 16 outcrop and float rock chip samples was collected over the conductors. Three panned concentrate samples were also collected from creeks draining the northern conductors. The geochemical surveys identified localised zones of weakly anomalous tin and base metal (copper) values, suggesting the conductors have a mineralised source.

6. A follow-up suite of 32 float and outcrop rock chip samples was collected between the two slope-corrected grid lines in December 2004.

7. In May to June 2005, following approval by MRT, work commenced to repair sections of the abandoned 4WD track, to establish a camp, and to clear two drill sites and a helipad. Diamond drilling to test the EM conductors on the southern grid line commenced in July 2005.

8. The drilling was contracted to TasGold Limited of Rokeby (Tasmania) using a skid-mounted, 'man-portable', modified, RB37 drill-rig with a supporting Hanix crawler tractor vehicle. Only one hole (MRDD01) was completed with a total depth of 408.0m. The first 35.9m were drilled with HQ and was then cased off. NQ drilling then continued to 317.6m followed by BQ drilling. Core recovery averaged over 94% for this program and there were no significant core recovery problems within the mineralized zones.

Hole ID	Collar mE (AMG)	Collar mN (AMG)	Collar Az (AMG)	Collar Dip	Final Depth	Base of Oxidation	Start Date	Finish Date
MRDD01	372437	5395125	089^0	-65^0	408.0m	9.7m	9-7-05	3-9-05

Table 1. Summary of the details of the diamond drill hole MRDD01.

9. The drilling results are detailed in the Third Annual Report (to 22 August 2006). In summary, the hole intersected a weak skarn sequence hosting a discontinuous package of pyrrhotite-dominated sulphide veins from 265.4m to 394.9m which were locally brecciated. This mineralised package is interpreted to be the source of the EM conductors.

   The mineralized intervals contain from 5% to 25% sulphides (dominantly pyrrhotite, with trace chalcopyrite) as veins, blebs, semi-massive to irregular aggregates and breccia-matrix fill. The intensity of mineralisation varies within the broader mineralised zone, with the strongest development from 355.2m to 360.9m (5.7m) and from 364.6m to 382.3m (17.7m).

   The highest tin value in the drill core assays was 180 ppm Sn and tungsten reported a maximum of 110 ppm WO_3. The most intensely sulphidic rocks, including both the 5.7m zone from 355.2m to 360.9m down-hole and the 17.7m zone from 364.6m to 382.3m down-hole, average 120 ppm Sn, compared with a background average below 50 ppm Sn in more weakly sulphidic parts of the hole.

7.0 ENVIRONMENT, SAFETY AND REHABILITATION

EL 42/2002 is in an area of remnant myrtle forest, parts of which have been previously logged. The exploration program was designed and operated so as to minimise the impacts on the natural environment.

In order to prevent any possible spread of *Phytophthora* (“root rot” or “dieback”) into the Mt Ramsay area, prior to the departure of personnel and equipment from Wombat Flat for Mt Ramsay, field boots and all field equipment and machinery were washed down with either a high pressure water spray or with *Phytoclean*, a chemical product specifically designed for this application. All personnel involved in crew changes were advised to ensure all footwear was cleaned before entering the site. A temporary washdown station with a brush, a basin and *Phytoclean* was established at the Wombat Flat drop off area. No pre-existing *Phytophthora* infection was observed in the areas visited at Mt Ramsay.

Drill hole MRDD01 was positioned toward the eastern side of the main Mt Ramsay access track, allowing any future vehicular movement along the track to be uninhibited. However, due to the broken nature of the rock within 10m of the surface, the HQ casing was left in the hole to protect the PVC casing and prevent hole collapse. To ensure vehicles and/or people do not come into contact with the collar, a number of large logs were placed against the collar to divert through traffic. Furthermore, a small fence with reflective tags was erected over the collar, with the collar and surrounding area spray-painted fluorescent pink.

At the completion of the 2005 winter drilling program, a 4.5t excavator was utilised for all rehabilitation earthworks, and these works were in accordance with the Mineral Exploration Code of Practice. Both drill sites were completely cleaned and re-contoured as close as possible to the original topography. The sumps were filled in with original spoil, and were covered over with logs and branches to create stability, prevent erosion, and to encourage the growth of native species. In addition, areas of erosion along the main access track between the drill sites and Wombat Flat were repaired, including the improvement of drainage and the establishment of “grips” across the track to minimise erosion.

A number of environmental issues related to the 2005 winter season became apparent during the drilling program. Significant drilling delays resulted from unfavourable weather conditions including strong winds, heavy rain and snowfalls. A number of large, water-logged, dead myrtle trees fell over during periods of both high winds and calm wind. Two of these trees fell in close proximity to the drill rig and warranted a short-term suspension of drilling activities due to safety concerns at the drill site. Following this incident, a total of eight dead trees were identified as threatening the drill site. With specific MRT approval, the eight trees were cut down by a suitably experienced person and the site deemed safe for drilling operations to continue.

During early to mid-August 2005 the heaviest snowfalls for 20 years occurred at Mt Ramsay, with over 1m of snow falling in three days. Due to the nature of the vegetation in the area, approximately 80% of young trees (maximum trunk diameters to 150mm) had either their tops broken out of them or were broken-off partway down the trunk. This caused significant blockage to the main access track resulting in it being totally impassable for a period of eight days. Trackcutters were employed for to re-establish access along the track. This involved clearing 100% of the track in several long sections, with other sections requiring variable amounts of clearing. All cut trees were left on the track to prevent erosion and track damage by vehicular movements. Trees left on the sections of track requiring the most clearing had the effect of 'cording' the track. During track rehabilitation works at the end of the program, the corded sections were left in place, whilst the remaining trees were cleared off to the side of the track to allow future access by emergency vehicles.

All fuel and oil/hydraulic products in the Mt Ramsay project area were stored in suitable containment bunds. All items were placed off the ground where possible and oil absorbent matting positioned underneath. No spillages of fuel and/or oil products occurred throughout the drilling program. Oil matting was placed under the drill rig as a precaution and a sediment fence was erected immediately down slope of the drill site. All drilling fluids used throughout the drilling program were biodegradable.

Malachite will discuss any remaining rehabilitation requirements with MRT, and will do whatever remaining rehabilitation is required during the 2007/08 Tasmanian summer.

8.0 CONCLUSIONS

Although the drilling program confirmed that the mineralised vein package was the most likely source of the EM conductor, the low tin and tungsten content of the mineralisation intersected was disappointing. Due to other opportunities elsewhere, it was decided to discontinue exploration at Mt Ramsay and to surrender the tenement once our rehabilitation obligations were satisfied.

9.0 EXPENDITURE

Total expenditure for the Mt Ramsay project since 23rd August 2003 is $ 508,704.

Expenditure Category	$AUS
Travel and Accommodation	$ 95,580
Assay Costs	$ 8,096
Camp Food	$ 7,392
Contractors and Consultants	$ 48,647
RCP/Diamond Drilling	$ 70,010
Earthmoving	$ 10,835
Environment	$ 188
Field supplies	$ 21,920
Freight	$ 1,801
Geological Services	$ 628
Geophysics	$ 1,000
Legal	$ 1,490
Maps & Tech Lit	$ 861
Motor Vehicles	$ 48,166
Report Preparation	$ 3,026
Salaries and Wages	$ 140,163
Telephone & Post	$ 2,491
Tenements	$ 2,165
Administration (10%)	$ 46,246
TOTAL	**$508,704**

10.0 REFERENCES

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