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Unity Mining Limited  
Henty Gold Mine  
EL 8-2009 Red Hills  
Annual Report for Period  
16 November 2011 to 15 November 2012  
Vol. 1 of 1  
November 2012

<b>Held by:</b>	Unity Mining Limited
<b>Manager &amp; Operator</b>	Unity Mining Limited
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<b>Date:</b>	November 2012
<b>Map Sheets:</b>	Tasmania 1:25,000 Series Selina (3836)  Tasmania 1:100,000 Series Sophia (8014)
<b>Geographic Co-ord (GDA94):</b>	Min East: 381,000m Max East: 384,000m Min North: 5,363,000m Max North: 5,368,000m
<b>Commodity(s):</b>	Base metals, gold, silver

## 1.0 ABSTRACT

Unity Mining Ltd (UML) continued exploration of EL 8-2009 Red Hills during 2011-2012. Work undertaken during the 12 months report period, ending 15 November 2012, comprised:

- Earthmoving (drill site preparation)
- Downhole geophysical logging
- Data compilation and interpretation

The downhole geophysical logging was done late in the reporting period and data is still under evaluation. It is not presented in this report, and will be added to the report detailing the 2012-2013 period for EL 8-2009.

Total expenditure on the tenement during the report period was \$43363.

UML intends to continue exploration of EL 8-2009 in 2012-2013 (Year 4 of tenure), focused on gold mineralisation targets hosted within altered dacitic lavas of the Central Volcanic Complex that were identified during the early 2011 drilling campaign. Three diamond drillholes have been planned and approved by Mineral Resources Tasmania and are expected to commence early in 2013.

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### Digital Files

EL8\_2009\_201211\_01\_Report.pdf  
(Report text, plus figures included in report)

## **2.0 INTRODUCTION**

This report details exploration completed by Unity Mining Limited (UML) on EL 8-2009 Red Hills over the past year.

UML intends to continue exploration on the EL in the next 12 months, principally with diamond drilling testing the extent of gold mineralization intersected in 2011 drilling. At least one hole is also planned to test for a faulted offset of the Lower Mineralised Horizon.

The EL area is now located entirely within the Mount Murchison Regional Reserve (World Heritage Recommended Area for Protection). Any future exploration activity in the EL area requires assessment by and approval from the Mineral Exploration Working Group (MEWG).

EL 8-2009 Red Hills is due for relinquishment on 15 November 2014.

### **2.1 Location & Access**

EL 8-2009 Red Hills is centred approximately 25 km north of Queenstown in western Tasmania. The western boundary of the EL abuts UML's Henty Gold Mine Lease 7M-1991 (Figure 1).

Access to the EL 8-2009 area from the south is via Henty Anthony Road (B28), the unsealed Howards Road to the Henty mine site, then by mine service road and formed 4WD tracks. The main 4WD track from the Henty mine crosses from the west over Moxon Saddle into the central section of the EL. Alternative access to the eastern section of the EL is possible on foot from a departure point along the Henty Anthony Road (B28) north of Lake Plimsoll.

### **2.2 Tenure**

EL 8-2009 Red Hills, covering 11.0 sq km, was granted to Bendigo Mining Ltd (BML) on 16 November 2009 for a period of five years. The company submitted a successful bid to explore the tenement in accordance with Mineral Resources Tasmania's Exploration Release Areas process. Application for the EL was lodged shortly after BML's acquisition of the Henty gold mine in July 2009. BML announced a change of company name to Unity Mining Ltd (UML) effective from 6 December 2010.

Recent amendment of the Land Tenure classification has resulted in the entire EL area being located within the Mount Murchison Regional Reserve. All exploration activity proposed on the tenement requires assessment by and approval from the Mineral Exploration Working Group (MEWG) prior to commencement. Approval of exploration programs is conditional upon UML meeting the requirements of the Mineral Exploration Code of Practice and all site specific conditions.

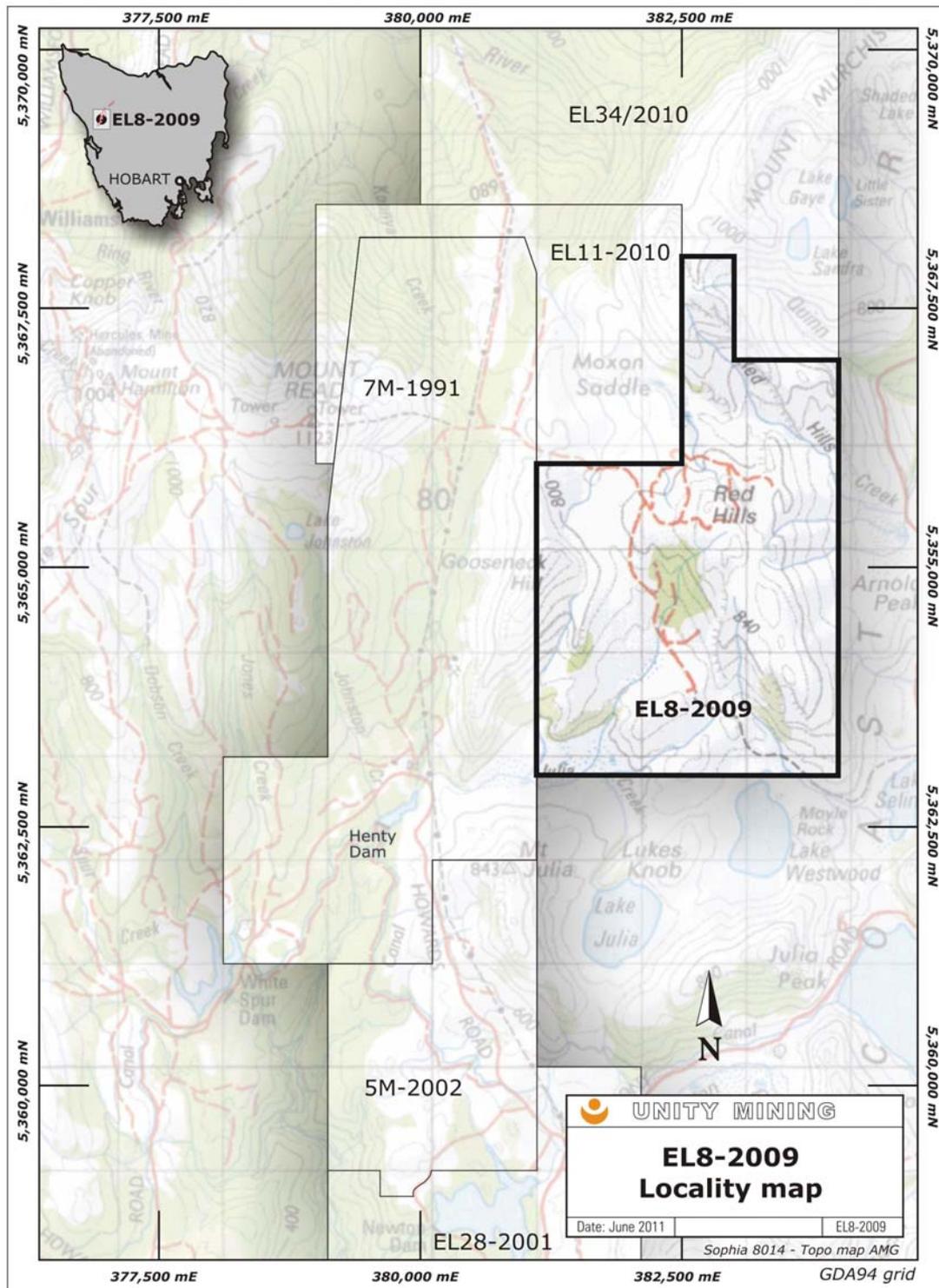


Figure 1: EL 8-2009 Red Hills location map. Other UML tenements in the Henty mine area and adjacent to EL 8-2009 are also shown. Projection is UTM Zone 55 MGA94 co-ordinate system.

### 2.3 Topography Climate and Vegetation

The EL 8-2009 Red Hills area is located at the northern end of the West Coast Range. Elevations range from 607 m AHD at Lake Westwood, immediately to the south of the EL, up to 1275 m AHD at Mount Murchison, north of the tenement area. The distinctive Red Hills in the central section of the EL are up to 850 m AHD in elevation. Snowfalls are frequent during winter months and the area receives very high rainfall. Average rainfall calculated from observations at nearby Mount Read weather station, over the period from 1996 – 2009, is 3086 mm per year.

Low-growing montane vegetation is dominant throughout the EL area. Buttongrass moorland, typical of blanket bog terrain in western Tasmania, is extensively developed on the poorly

drained soils of the area. Some scattered stands of low scrub, mainly banksia, teatree, bauera and eucalypt occur in relatively sheltered and fire resistant areas. Rainforest vegetation, including Myrtle Beech (*Nothofagus cunninghamii*), Deciduous Beech (*Nothofagus gunnii*) and King Billy Pine (*Athrotaxis selaginoides*), is preserved in sheltered gullies in the headwaters of Julia Creek.

### **3.0 GEOLOGY**

#### **3.1 Regional Geology**

A major portion of the EL 8-2009 Red Hills area is underlain by the Cambrian Mount Read Volcanics (MRV), apart from the eastern section of the tenement which covers a thin strip of Late Cambrian - Ordovician Owen Group.

The MRV comprise a package of massive, feldspar-phyric lavas and volcanoclastics, which passes upwards into a mixed sequence of basaltic to rhyolitic lavas, intrusives and volcanoclastics, with intercalated shale and siltstone. In general, there is a transition from feldspar-phyric to strongly quartz-phyric lithologies from the bottom to the top of the sequence. On a regional scale the MRV is divided by the north-northeast – trending Henty Fault. EL 8-2009 Red Hills is located to the east of this major structural feature (Ref. Figures 2A-2B).

The Owen Conglomerate consists of siliciclastic sediments, including large volumes of very coarse siliciclastic conglomerate, which unconformably overlies the MRV. Clasts within the conglomerate are dominantly metaquartzite, derived from the Proterozoic Tyennan basement further to the east, with little or no material from the MRV.

Rocks in the region have been subjected to at least two major polyphase deformations, one in the Cambrian and the other in the Devonian (the latter probably equivalent to the Tabberabberan Orogeny). Evidence of the Devonian deformation is apparent in a regional NNE - striking cleavage and development of west-over-east thrusting on pre-existing, NNE structures and synchronous NW – striking structures.

#### **3.2 Local Geology**

The oldest rocks in the EL 8-2009 Red Hills area are dacitic lavas of the MRV, with intercalated black siltstone and shale (correlated with the Central Volcanic Sequence). These volcanic and volcanoclastic sequences are exposed on the eastern limb of an interpreted south - plunging syncline. Massive, quartz-phyric lavas (Mt Julia Rhyolite) and quartz-phyric volcanoclastic sediments, correlated with the Tyndall Group, occur stratigraphically above the CVC rocks in the keel of the interpreted synclinal structure. These younger rocks are also exposed along the overturned western limb of the syncline, truncated by the Henty Fault in proximity to the Henty mine.

##### **3.2.1 Alteration and Mineralisation**

Two principal styles of mineralisation have been identified in the Red Hills area:

- Stratabound base metal sulphides+gold+silver VMS mineralisation hosted by CVC mass flow units (Lower Mineralised Horizon). Modern exploration has mainly focused on testing for this style of mineralisation following up the discovery intersection in hole RH5. Based on isotopic data, metal ratios and analysis of the alteration assemblages this mineralisation has strong similarities to the Rosebery VHMS system (Purvis, 2010).
- Vein and disseminated copper+gold+magnetite mineralisation associated with chlorite+feldspar alteration of the Red Hills lava. Earliest prospecting and small scale mining activity was concentrated on this type of mineralisation, as at the Northern Adits area.

Thin zones of base metals sulphides+gold mineralisation hosted within black shale and siltstone units in the CVC comprise the Upper Mineralised Horizon (UMH). Recent drilling has also intersected gold mineralisation, associated with pyrite veining in CVC dacitic volcanics, located between the LMH and UMH.

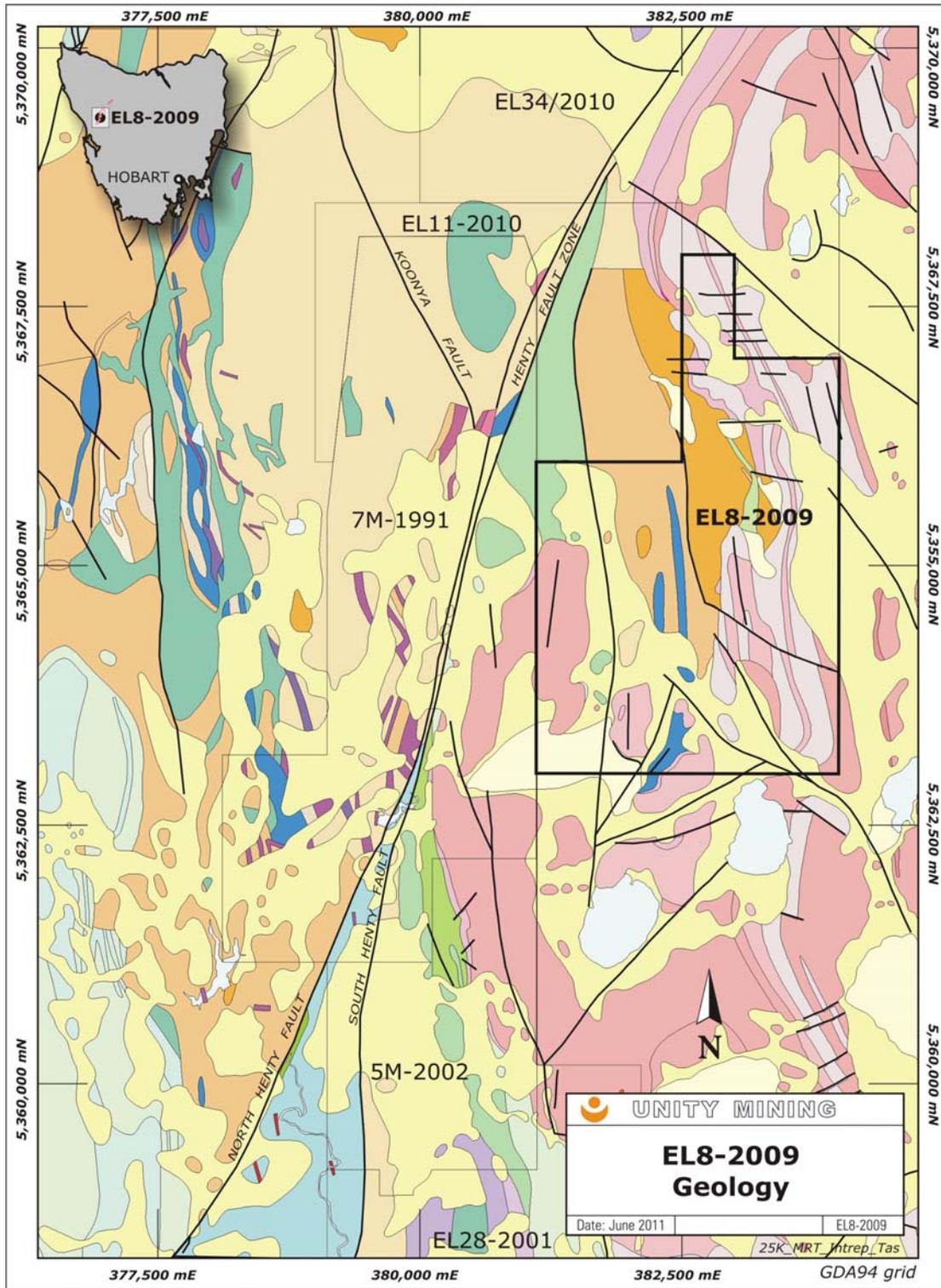


Figure 2A: EL 8-2009 Red Hills interpreted geology map (from 1:25000 MRT). Projection is UTM Zone 55 MGA94 co-ordinate system.

## LEGEND FOR GEOLOGICAL MAPS

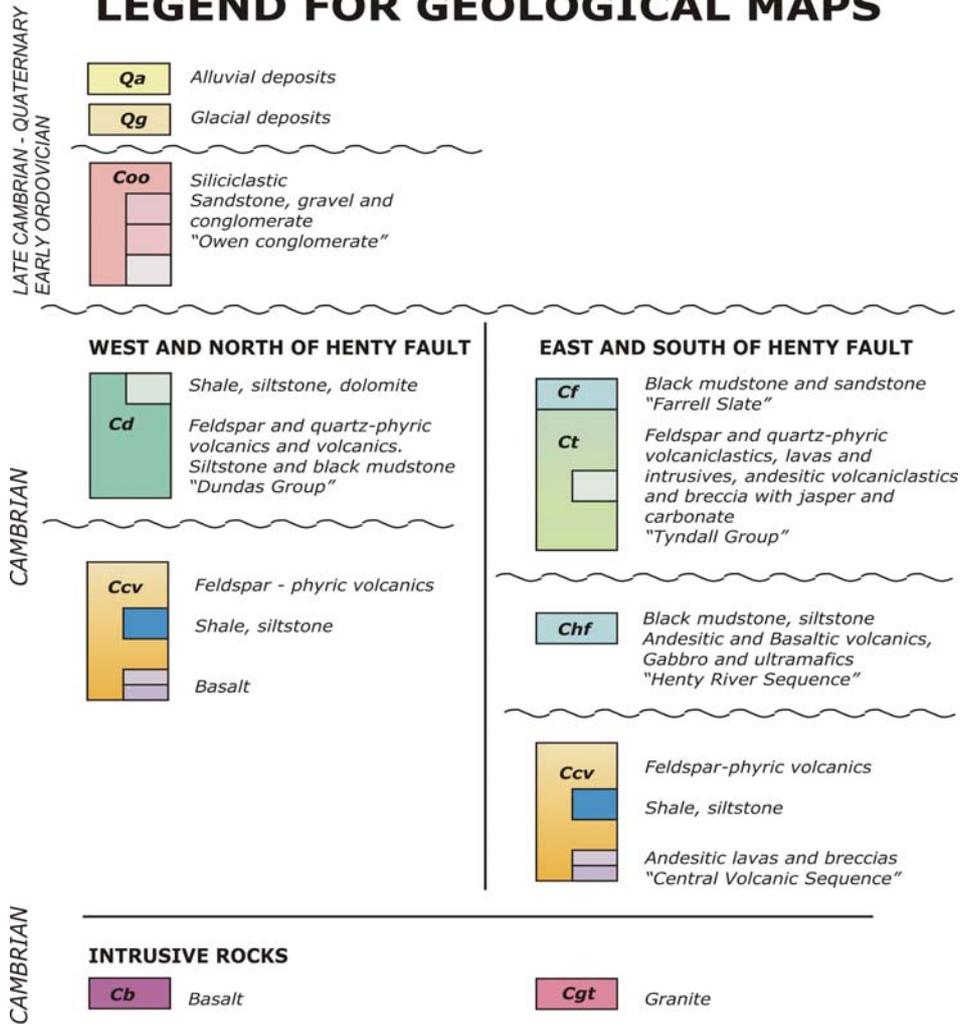


Figure 2B: Legend for geological map

Henty Mine Area Stratigraphy				
	Group	Formation	Unit	Lithologies
Late Cambrian-Ordovician	Owen Group		<i>Owen Conglomerate (OC)</i>	Siliciclastic conglomerate and sandstone
			<i>Newton Creek Sandstone (NCF)</i>	Turbiditic micaceous siltstone, quartzwacke and conglomerate
Cambrian	Tyndall Group (Suite 1)	Zig Zag Hill Formation (ZZH)		Rhyolitic volcanoclastic sediments
				Bedded sandstone-siltstone units
		Comstock Formation		Syn-eruptive quartz-feldspar crystal rich sandstone. Massive quartz-phyric rhyolitic lavas, breccias and intrusions (Mt Julia Rhyolite)
			<i>Mt Julia Member (MJM)</i>	Quartz + feldspar-phyric lava and intrusives
			<i>Upper Howards Basalt Breccia (UHBB)</i>	Fine grained basaltic andesite dykes, lavas and lithic breccias (Howards Basalt). Commonly haematitic and carbonate alteration
			<i>Lynchford Member (LYM)</i>	Syn-eruptive feldspar crystal rich volcanoclastic sandstone.
				Massive carbonate and marly sediments
	Central Volcanic Complex (Suite II)	Anthony Road Volcanics	<i>Suite II Porphyry</i>	Quartz-feldspar-hornblende porphyry. Intrusive sill. Peperitic top and bottom contacts
			<i>Anthony Road Andesite (CVC)</i>	Feldspar-hornblende phyric andesite and breccia, extrusive and intrusive
			<i>Lower Howards Basalt Breccia (LHBB)</i>	
	Central Volcanic Complex (Suite I)	Newton Creek Dacite		Dacitic volcanoclastic pumice breccias
				Dacitic, feldspar-phyric to aphyric lavas, breccias and intrusions. Peperitic contacts
				Dacitic to andesitic volcanoclastic sediments\vitric tuff, minor shale, sandstone
			<i>Spillway Breccia</i>	Coarse polymict and dacitic massflows with some sulphide clasts
			<i>Spillway Basalt Breccia</i>	Massive to stratified clast-supported monomictic basalt breccia 'fire fountain'
Yolande River Sequence		<i>Footwall Pumice Breccia</i>	Rhyolitic-dacitic massflows, commonly graded	
			Bedded vitric siltstone and sandstone	

Figure 3: Henty area stratigraphy

#### 4.0 PREVIOUS EXPLORATION

Prospecting activity in the Red Hills area commenced in the late 19<sup>th</sup> Century. Several adits and shallow shafts were mined to work near surface copper mineralisation. Mount Lyell Mining and Railway Company acquired all mineral rights over the area in 1905, however this early phase of prospecting and mining activity ceased shortly afterwards.

Modern exploration techniques were first applied in the Red Hills area in the late 1950s. Work by Rio Tinto and Electrolytic Zinc Company, in joint venture, included various geophysical surveys followed up by drilling of four diamond drill holes.

Exploration was undertaken semi-continuously from 1969 – 1985 when the area was included within EL 9/66 held by Mount Lyell Mining and Railway Company. Work was carried out in joint venture with Getty Oil Development Company from 1977. Numerous geophysical surveys were completed in this extended phase of exploration and drilling comprised 26 open hole percussion and 17 diamond drill holes. Massive base metals sulphides were intersected in drill hole RH5 completed by Mt Lyell in early 1977. A mineral resource of 1 Mt at 2 g/t gold, 37 g/t silver, 4.6% zinc and 1.3% lead was estimated based on intersections in this discovery hole and four step-out diamond drill holes. The mineralisation was considered to be open both above and below the intersection in hole RH5.

Geochemical sampling and additional geophysical surveys, including downhole EM surveying of RH5, were undertaken in 1985 – 1993 by CRA Exploration in joint venture with Aberfoyle. Limited diamond drilling follow up was completed. Four additional diamond drill holes were completed in the Red Hills area by Plutonic/Homestake, in joint venture with Goldfields Exploration (later AurionGold, then Placer Dome Asia Pacific).

Newcrest Mining acquired EL 9/2005 over Red Hills in mid 2005. Prior to relinquishing the EL area in 2008 Newcrest completed four deep diamond drill holes (NCT006, NCT007, NCT009 and NCT010). Maximum depth drilled was 792.1m in hole NCT 006. Three of these holes were designed to test at depth in areas of prospective stratigraphy for continuation of the stratabound gold-rich base metal sulphides discovered in hole RH5. One hole (NCT009) was aimed at testing a conceptual gold+copper rich footwall stringer zone within the Red Hills lava of the Central Volcanic Complex.

During the 2010-2011 reporting period, an appraisal of the Red Hills prospect was commissioned by BML and completed by J.G. Purvis, consulting geologist. Recommendations from this review formed the basis of an eventual six-hole diamond drilling program undertaken in the period. The holes were designed to test at 50 m spacing around the RH5 discovery intersection. Alternative drill hole collar locations were also proposed in the review to ensure that environmental impact of site preparation earthworks would be minimised. This program confirmed that the VHMS mineralisation in historical hole RH5 represents a small, irregularly shaped lens with limited potential as an economic mineral resource. Holes aimed at testing up dip from the RH5 intersection failed to intersect the target LMH host, due to faulting or localized changes in morphology of the adjacent CVC sequences. Drilling intersected several thin zones of gold mineralisation hosted in silica altered dacitic lavas located in the stratigraphic hangingwall of the LMH. These are the main focus of planned drilling for the following reporting period.

Descriptions of the extensive exploration activities undertaken throughout the Red Hills area, together with results, are contained in company reports maintained on open file at Mineral Resources Tasmania. A synopsis of the exploration history, apart from the 2011 drilling, is included in the appraisal of the Red Hills prospect completed for BML by Purvis (2010).

## **5.0 WORK COMPLETED (2011 TO 2012)**

During late-September early-October, Outer-rim Exploration Services were commissioned to perform downhole electro-magnetic surveys of five of the six diamond holes (RHD24-25, RHD27-29) drilled during the previous reporting period (RHD26 was permanently sealed after drilling due to it making water). Rogers Exploration Services were employed to cut the loops for these surveys. At the time of writing this data was currently being reviewed by Southern Mineral Exploration Geophysics and data, results and conclusions will be given during the next reporting period. In late October, Williams Earthmoving constructed drill pads for planned diamond drilling following up on the drilling that took place during the last reporting period.

## **6.0 CONCLUSIONS**

No conclusions can be drawn from work undertaken during the reporting period, as the downhole electromagnetic surveys of early October are still under evaluation at the time of writing, and no drilling took place. With these geophysical results, and the results of planned drilling during the next reporting period, a more comprehensive set of results and conclusions can be expected in the next report for the period ending 15<sup>th</sup> of November 2013.

**7.0 EXPENDITURE FOR 2011/12**

Expenditure by UML on EL 8-2009 for the year ended 15 November 2012 was \$43363, as follows:

<b>Expenditure Item</b>	<b>\$</b>
Drill Pad construction	4500
Personnel	10000
Geophysics (DHEM)	24632
Track and geophysical loop cutting	4231
<b>Total</b>	<b>43363</b>

**8.0 PLANNED WORK AND EXPENDITURE FOR 2012/13**

Approval for further drilling at Red Hills was obtained from Mineral Resources Tasmania in early October. Three holes have been planned, two to test for extensions to the quartz vein-pyrite-gold association observed in some of the 2011 drillholes, and one to test for a faulted offset of the lower mineralized horizon to the east and up-dip of the 2011 drilling. Drill sites for these holes have been prepared and drilling is currently expected to start in January 2013 and take approximately one month to complete. Little mapping, geophysical or geochemical (surface) work is predicted to take place during the period.

Estimated expenditure on EL 8-2009 Red Hills in the 12 month report period, ending 15 November 2013, is \$280,000.

## 9.0 REFERENCES

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