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## **EL28/2001 Annual Report**

**'Tyndall Creek'**

**EL28/2001**

Vol. 1 of 1

<b>HELD BY:</b>	<b>UNITY MINING LTD.</b>
<b>MANAGER &amp; OPERATOR:</b>	<b>UNITY MINING LTD</b>
<b>AUTHOR:</b>	<b>C. Timms</b>
<b>DATE:</b>	<b>APRIL 2013</b>
<b>MAP SHEETS:</b>	<b>1:25k Tyndall (3835) Oceana (3635) 1:100k Sophia</b>
<b>GEOGRAPHIC COORDS (GDA94):</b>	<b>Min East: 379,100mE Max East: 382,100mE Min North: 5,356,200mN Max North: 5,360,200mN</b>
<b>COMMODITY(s):</b>	<b>Au, Basemetals</b>

## Summary

During the lease period UML has:

- finished recutting old gridlines and new gridlines on the south western margin of the lease as part of the South Henty soils program
- completed a c-horizon soil sampling program and
- drilled one hole at Newton Dam, Z18650

Expenditure on the tenement since May 10 2012 has been \$376,739.

UML will be applying for a 12 month extension to EL28/2001 and intends to drill at the Tyndall Creek prospect and complete follow up the Newton Dam drill hole. The application will be submitted prior to the expiry date.

## Table of Contents

Summary .....	2
1 Introduction .....	4
1.1 Tenure .....	4
1.2 Location and Access .....	4
1.3 Regional Geology.....	6
1.4 Local Geology .....	7
1.4.1 Stratigraphy.....	7
1.4.2 Structure .....	7
1.5 Alteration and Mineralisation.....	11
1.5.1 Lake Newton Prospect (including Howards Anomaly- Tyndall Creek).....	11
1.5.2 The Spillway Horizon (Polymetallic Massive Sulphide).....	12
1.6 Previous Exploration .....	13
2 Work Completed during the Reporting Period 2012 to 2013 .....	14
2.1 South Henty C-Horizon Soil Program.....	14
2.1.1 Soil Sampling Methodology .....	14
2.1.2 Soil Sampling Results.....	16
2.2 Diamond Drilling.....	18
2.2.1 Drill Site Preparation.....	18
2.2.2 Diamond Drilling .....	18
2.2.3 Data Management .....	18
2.2.4 Hole Z18650 .....	18
3 Conclusion .....	23
4 Expenditure Reporting Period 2012 to 2013 .....	23
5 Forecast Expenditure for 2013 to 2014 .....	23
6 References .....	24

## Table of Figures and Tables

Figure 1: Location of EL28/2001 (map in GDA 94 projection). .....	5
Figure 2: Geology of EL 28/2001 from the MRT 1:25,000 Map series.....	8
Figure 3: Geological legend.....	9
Figure 4: Henty area stratigraphy.....	10
Figure 5: South Henty Soil Location Map.....	15
Table 1. Statistical Analysis of samples from South Henty grid.....	16
Figure 6: Distribution of Cu, Pb, Zn and Au (ppm) assay.....	17
Table 2. Newton Dam Drill hole Z18650 metadata .....	18
Figure 7: Location of drill hole Z18650 .....	19
Figure 8: Cross section of drill hole Z18650 displaying primary lithologies.....	21
Table 3: E28/2001 'Tyndall Creek Exploration Expenditure 2012/13.....	22
Table 5: E28/2001 'Lake Newton' Exploration Budget Forecast 2013/14.....	22

## Table of Appendices

Appendix 1: Historical Exploration
Appendix 2: South Henty Soil Results
Appendix 3: All Surface Sample Statistics
Appendix 4: MRT Drilling Approvals
Appendix 5: Environmental Site Assessments
Appendix 6: Graphic Log Z18650
Appendix 7: Z18650 Database
Appendix 8: Unity Mining Rock Codes

## **1 Introduction**

This report details work completed by Unity Mining Limited (UML) on EL 28/2001 over the past year.

EL28/2001 is due for relinquishment on 10 May 2013.

UML intend to submit an application for extension of the entire tenement for 12 months before the expiry date.

The license area consists of crown land and land vested in the HEC, both land uses coming under the mines act. The far western edge of the tenement is part of the Mt Dundas Regional Reserve (World Heritage Recommended Area for Protection). The far eastern extent, east of the HEC high-tension power lines is the Tyndall Regional Reserve. Any disturbances in these areas require notification and approval from the Mineral Exploration Working Group (MEWG). Further conditions of exploration are outlined in the Exploration Code of Practice (produced by Mineral Resources of Tasmania (MRT)).

The land vested in the HEC includes Lake Newton and associated pump station, the Henty canal, the high-tension power lines and service tracks.

### **1.1 Tenure**

EL28/2001 was acquired in 2002 by Placer Dome Asia Pacific (formerly AurionGold Exploration and previously Goldfields Exploration) after a successful tender for ETA 552.

Barrick (Henty) Limited acquired the EL in January 2006, following the global takeover of Placer Dome by Barrick Gold Ltd.

In July 2009 Bendigo Mining Limited (BML) purchased the Henty Gold Mine and EL 28/2001 from Barrick Australia. BML subsequently applied for, and were granted, a variation to the tenement, which enlarged the area to the south by 1.4 sq km (Figure 1).

### **1.2 Location and Access**

Lake Newton (EL28/2001) occurs midway between Queenstown and Tullah on Tasmania's West Coast. The EL's northern boundary abuts the Henty Gold Mine lease 5M/2002 (Figure 1). Local access to the tenement is off the Howards and Anthony Roads.

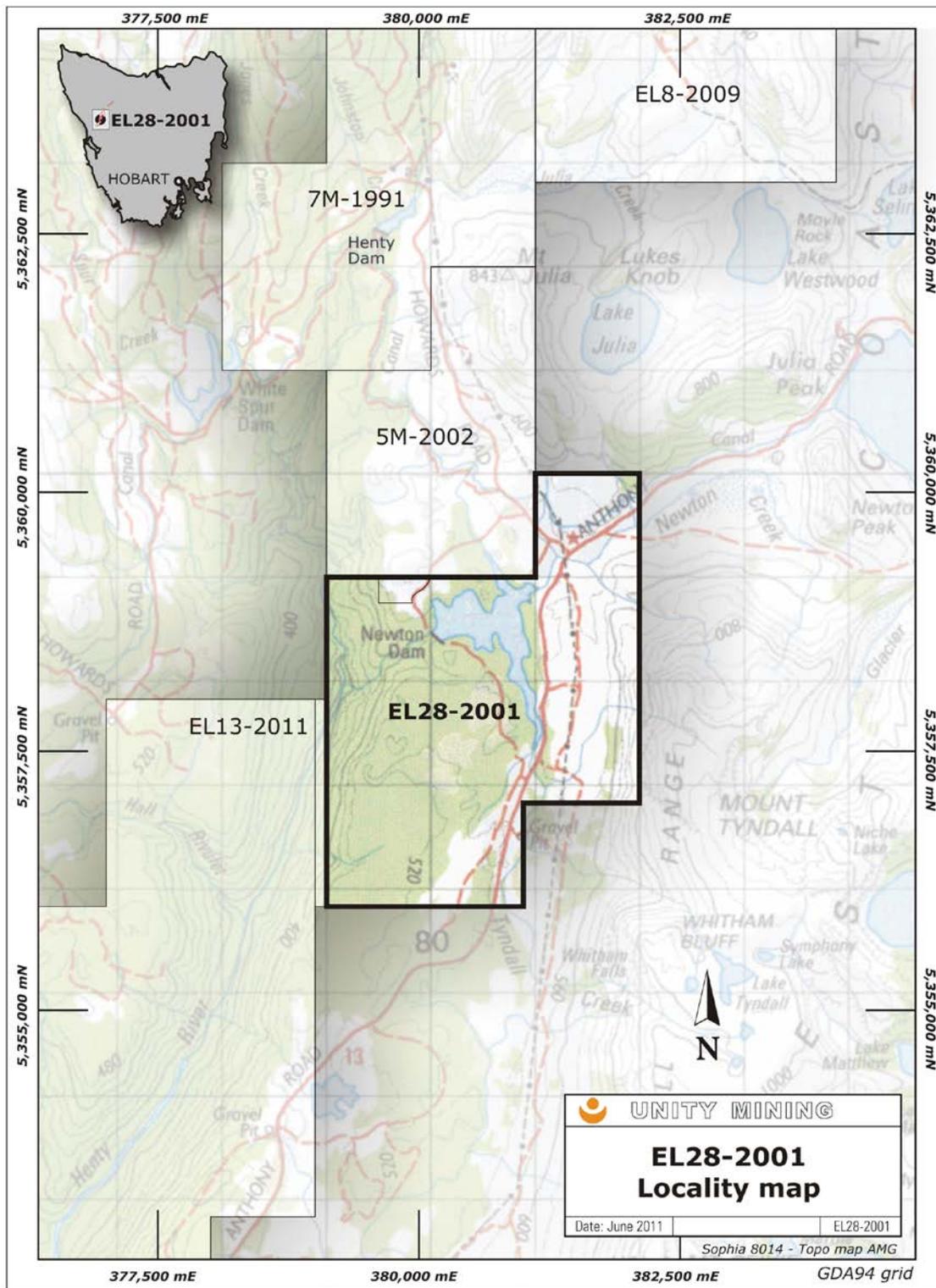


Figure 1: Location of EL28/2001 (map in GDA 94 projection).

### 1.3 Regional Geology

This section is taken from the Annual Report for this tenement for the period April 2008-April 2009 (Barrick 2009):

Basement rocks of western Tasmania comprise sediments multiply deformed during the Late Proterozoic Penguin Orogeny (700±50 Ma) (Berry, 1994). A rift phase followed, characterised by continental shelf sedimentation and tholeiitic volcanism (Crawford and Berry, 1992).

The first phase of the Cambrian Delamerian Orogeny (510-490 Ma) is characterised by extensional tectonism which resulted in the rapid deposition of sediments and calc-alkaline volcanics (Mount Read Volcanics), particularly along the eastern margin of the newly formed Dundas Trough (Berry, 1994).

The Mount Read Volcanics (MRV) interfinger with the Dundas Group to the west and are bound by Precambrian rocks of the Tyennan Region to the east.

On the south-eastern side of the Henty Fault, the MRV package can be divided into four main lithostratigraphic groups (Corbett, 1992). These are: the Western Volcano-Sedimentary Sequence (WVSS), the Central Volcanic Complex (CVC), the Eastern Quartz Phyrlic Sequence (EQPS) and the Tyndall Group (TG).

The WVSS comprises rocks of the Dundas Group and the Yolande River Sequence (Corbett, 1992) which interfinger with the lava rich zones of the CVC and the EQPS sequence. The WVSS was deposited in a marine setting and consists of tuffaceous mass flow deposits, volcano-sedimentary siltstones/mudstones, volcanoclastic turbidites and black graphitic shales (Corbett & Lees, 1987).

The CVC is the central belt of the MRV and interfingers with both the WVSS and EQPS. CVC lithologies are predominantly feldspar-porphyritic rhyolitic to andesitic volcanics and pumiceous volcanoclastics, with lesser intercalated minor sediments and mafic units (Corbett 1992). A useful geochemical subdivision is proposed by Crawford et al (1992) where the CVC is split into two distinct geochemical suites (Suite 1 and Suite 2, see Section 2.5: Local Geology).

The EQPS occurs along the eastern margin of the MRV belt and interfingers with the CVC to the west. The package comprises rhyo-dacitic lava-dominated volcanics with common quartz-feldspar phyrlic intrusives (Corbett, 1992).

The TG comprises a lower association consisting mainly of crystal-rich sandstones and polymictic breccias with minor rhyolitic and andesitic lavas, overlain by the volcanogenic conglomerate and sandstone units of the upper TG.

The last phase of the Cambrian Delamerian Orogeny (~490 Ma) caused the earlier faults to be reactivated as reverse faults and formed open north trending folds along with the uplift and erosion of the Tyennan Block which formed the Owen Group conglomerates (Berry, 1994). The Owen Group appears to conformably overlie the TG in the Henty area (Corbett, 1992).

Deposition of the Owen Group ceased in the mid Devonian with the onset of the Tabberabberan Orogeny resulting in tightening of the north trending Cambrian Folds in the Dundas Trough with formation of a NNW striking cleavage (Berry, 1994).

## 1.4 Local Geology

### 1.4.1 Stratigraphy

#### 1.1

The stratigraphy of the South Henty lease has been well documented by previous workers through detailed litho-geochemistry and mapping. The stratigraphic interpretation remains largely unchanged following work completed by Barrick with the exception of separating the Howards Basalt unit into an upper and lower unit. A slightly amended stratigraphic column is suggested for the South Henty area and has been summarised in Figure 3.

In the Lake Newton area the volcanic package comprises a section of Central Volcanic Complex (CVC) conformably overlain by lower Tyndall Group stratigraphy. The CVC is broadly divided into a lower association (Suite 1) and an upper package (Suite 2), based on geochemical divisions (Crawford et al, 1992). The lower CVC (Suite 1) comprises a package of interlayered feldspar-phyric rhyolitic to dacitic lavas, volcanoclastic breccias, conglomerates and crystal rich sandstones (Williams, 2000).

The overlying upper CVC (Suite 2) is commonly referred to as the Anthony Road Andesites after the andesite members that dominate the package, but is also known as the Anthony Road Volcanics (ARV). Upper CVC units within the tenement area are dominated by a quartz-feldspar porphyry facies interpreted to be a sill in the South Henty area (Street, 1999) and a comagmatic package of interlayered plagioclase+hornblende-phyric andesite units with lesser interlayered sandstone, mudstone and carbonate units (Williams, 2000).

Conformably overlying the CVC package are crystal-rich sandstones, polymictic breccia units and lesser quartz-feldspar felsic lavas of the Lower Tyndall Group. The felsic lavas of the Tyndall Group are characteristically Suite 1 (Williams, 2000).

### 1.4.2 Structure

Two major structures constrain the Cambrian lithologies in the Lake Newton area, the South Henty Fault to the west and the Great Lyell Fault to the east. The South Henty Fault is a steeply west dipping (60-90°) major regional structure which forms the western boundary of the Yolande River Sequence, CVC and Tyndall Group rocks. The Great Lyell Fault forms the eastern margin of Cambrian lithologies and is a large west dipping fault with several hundred metres of displacement (Corbett & Lees, 1987).

Bedding is generally steeply dipping to the east and occasionally appears overturned, dipping steeply to the west. A tight, shallow, north plunging syncline is located near the Great Lyell Fault in the southeast of the lease and may be a southern extension of the Mt Julia syncline (Callaghan, 1999). A major regional S<sub>2</sub> foliation is noted by Callaghan (2003) which steeply dips towards the southwest and overprints most rocks in the Lake Newton area.

Callaghan (2003) also notes evidence for extensive ductile deformation in the Howards Anomaly area. In this area the Howards basalt horizon has a strongly developed foliation and down dip stretching lineation in chloritised basaltic breccias grading into brittle faulting and kinking of the earlier foliation. The fault represents the extended limb and hinge of a series of NNW trending asymmetric folds located in the SE corner of the EL which extend southwards. These structures mark the change from dominantly east-facing, steeply dipping bedding, strongly influenced by the Henty Fault in the west to flatter lying strata to the east. The bedding to the east is disrupted by N to NNW trending open to tight folds and associated faulted limbs with wavelengths of approximately 200m in the east (Callaghan, 2003).

The geology of the tenement is shown in Figure 2, the legend in Figure 3, with the stratigraphy outlined in Figure 4.

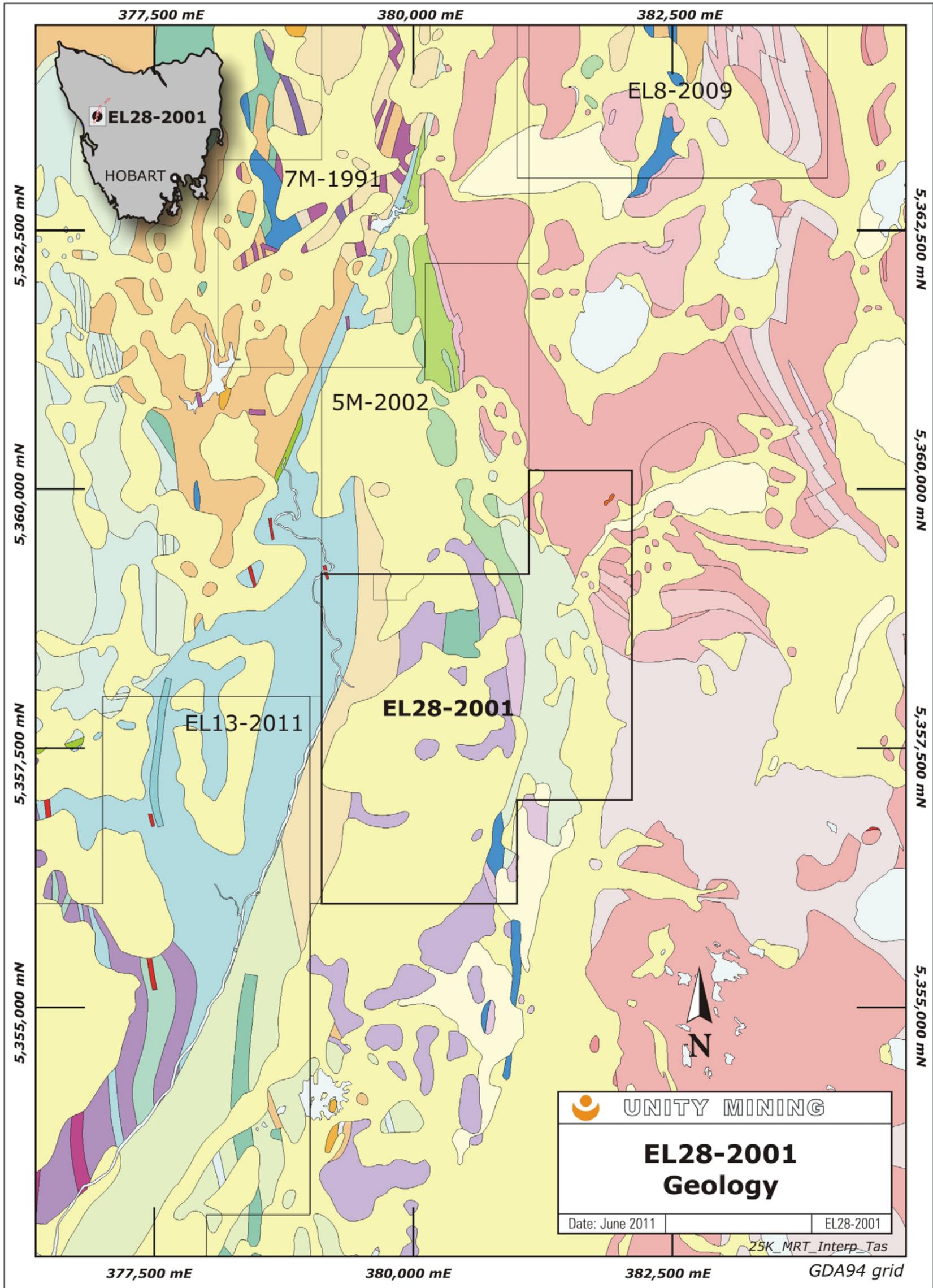
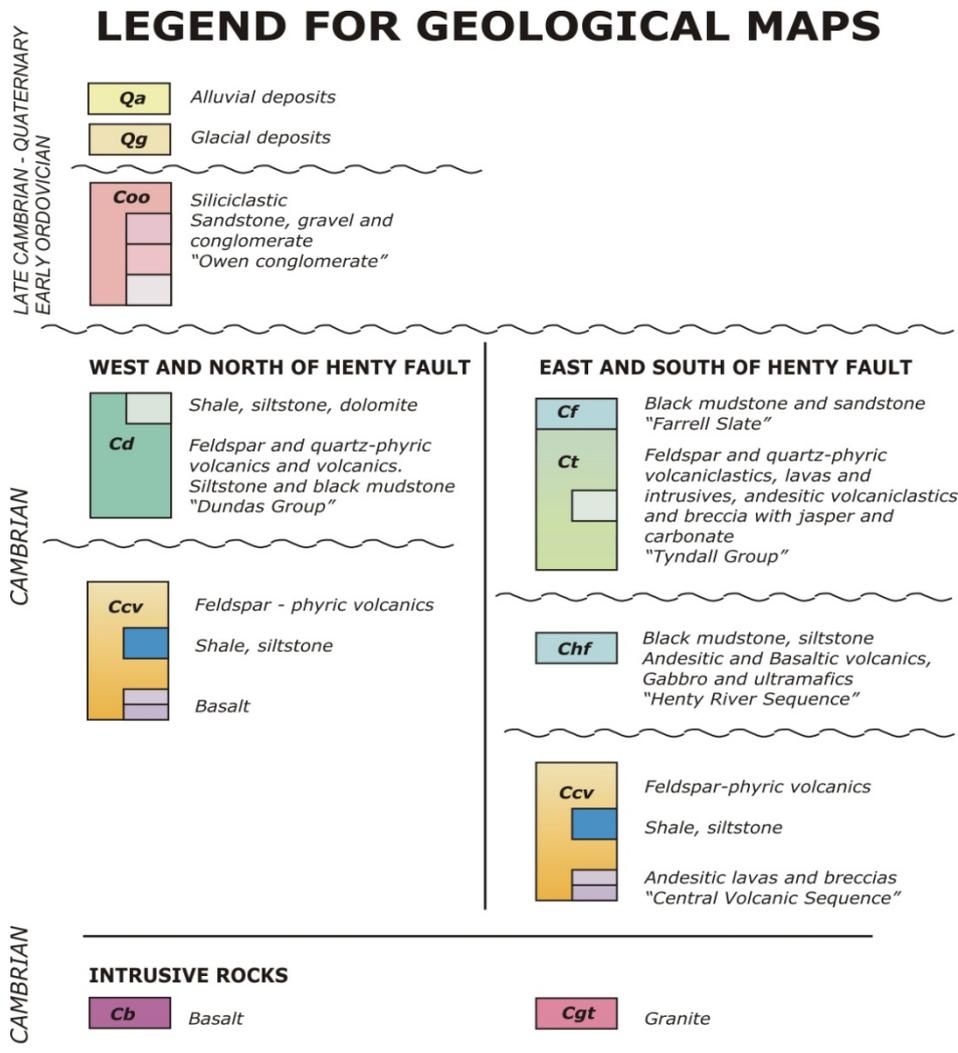


Figure 2: Geology of EL 28/2001 from the MRT 1:25,000 Map series.



Henty Area Stratigraphy					
	Group	Formation	Unit	Lithologies	
Late Cambrian-Ordovician	Owen Group		Owen Conglomerate (OC)	Siliciclastic conglomerate and sandstone	
			Newton Creek Sandstone (NCF)	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)
			Mt Julia Member (MJM)		Quartz + feldspar-phyric lava and intrusives
			Upper Howards Basalt Breccia (UHBB)		Fine grained basaltic andesite dykes, lavas and lithic breccias (Howards Basalt). Commonly haematitic and carbonate alteration
			Lynchford Member (LYM)		Syn-eruptive feldspar crystal rich volcanoclastic sandstone.
					Massive carbonate and marly sediments Dacitic volcanoclastic sediments
	Central Volcanic Complex (Suite II)	Anthony Road Volcanics	Suite II Porphyry		Quartz-feldspar-hornblende porphyry. Intrusive sill. Peperitic top and bottom contacts
			Anthony Road Andesite (CVC)		Feldspar-hornblende phyric andesite and breccia, extrusive and intrusive
			Lower Howards Basalt Breccia (LHBB)		
	Central Volcanic Complex (Suite I)	Newton Creek Dacites			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
			Spillway Breccia		Coarse polymict and dacitic mass flows with some sulphide clasts
			Spillway Basalt Breccia		Massive to stratified clast-supported monomictic basalt breccia 'fire fountain'
	Yolande River Sequence		Footwall Pumice Breccia		Rhyolitic-dacitic mass flows, commonly graded
				Bedded vitric siltstones and sandstones	

Figure 4: Henty area stratigraphy

## 1.5 Alteration and Mineralisation

There are a number of alteration and mineralisation occurrences within the tenement area. The most significant are:

- The Lake Newton Prospect (Cu-Au).
- Howards Anomaly (Ba-Ag) - Tyndall Creek (Zn-Pb-Ba)
- The spillway horizon (VHMS-polymetallic massive sulphide)

There is an excellent description of each of these in the Annual Report for EL28/2001 for the period April 2008-2009 (quoted below).

### 1.5.1 Lake Newton Prospect (including Howards Anomaly- Tyndall Creek)

Previous workers have defined the prospect as a well zoned, epigenetic, low grade (0.2-0.4 g/t Au), disseminated copper-gold system with an extensive low grade (<1% Pb + Zn) base metal halo. The entire alteration zone extends over a strike length of at least two kilometres, varies between 30 to over 400 metres in width and is open to the south and at depth. The alteration system is well zoned moving inwards from a distal carbonate-chlorite halo → carbonate-sericite-(chlorite-sphalerite-galena) → sericite-pyrite-carbonate-(gold-galena-sphalerite) and a proximal zone of sericite-silica-pyrite-(chalcopyrite±gold) (Callaghan, 2003). Typical results from the inner zone include:

SHD16	615.0-736.0m	121m @ 0.2 g/t Au
	770.8-791.8m	21m @ 0.4 g/t Au
SHD22	346.0-392.0m	46m @ 0.2 g/t Au
SHD22	482.0-508.0m	26m @ 0.3 g/t Au

The alteration is dominantly hosted in the polymict dacitic mass flows of the Spillway Horizon and overlying the massive dacitic pumice breccias of the Newton Creek Dacites, but also overprints the Spillway Basalt and extends down into the underlying Yolande River Sequence (Callaghan, 2003).

The top of the alteration system also crosscuts units of the lower Tyndall Group, particularly the Howards Basalt and Lynchford Member volcanoclastics, and varies in composition along strike from south to north. The Tyndall Creek occurrence, to the south of the lease, is hosted within Lynchford Member units. It is interpreted to represent an exhalative expression of the Lake Newton alteration system and consists of small discontinuous lenses of barite-base metal-sulphide alteration with weakly anomalous gold, confirmed in limited shallow drilling (to 3.8g/t in TC3). In the north of the lease, the lower Tyndall Group alteration varies between weak, disseminated pyrite-sericite (e.g. SHD21) and occasional elevated silver assays from haematite altered volcanoclastics (e.g. Howards Anomaly, drill holes HA4 and HA6). The presence of barite and jasper veining at both prospects suggests a near seafloor position within the Lower Tyndall Group during the mineralising event (Callaghan, 2003).

The relative timing of the alteration system can be partly constrained by overprinting relationships of the alteration across the boundary of Suite 2 porphyry units. This overprinting relationship implies a syn- to post-porphyry timing of the hydrothermal event (Callaghan, 2003). As Suite 2 porphyries show consistent peperitic intrusive contacts with the overlying Lynchford Member units, the porphyry, and therefore the alteration, post dates at least some units of the Lynchford Member (possibly even the exhalative sulphide lenses within the Lynchford Member).

### **1.5.2 The Spillway Horizon (Polymetallic Massive Sulphide)**

The spillway horizon is a volcanoclastic mass flow breccia unit (Ccvag) containing a number of high-grade, polymetallic sulphide clasts, outcropping in the Lake Newton Dam spillway. The source of the massive sulphide clasts is yet to be identified. The sulphide clasts are well-rounded cobbles and boulders consisting of massive sphalerite-galena-pyrite and chalcopyrite with an average grade of 27% Pb, 31.7% Zn, 700 g/t Ag and 0.92 g/t Au (Herrmann and MacDonald, 1996).

A detailed interpretation of the spillway breccia and sulphide clasts by Allen (1993) suggested that the clasts had not been transported far from their source environment. The sulphides are most likely to have formed in the same source area as the dominantly dacitic hyaloclastite rich mass flow. The proximal sulphide source is likely to have existed within 5km of the outcropping clasts (Allen, 1993). The Spillway Basalt forms a distinct and laterally continuous marker horizon at the base of the mass flow breccias (Allen, 1993).

## 1.6 Previous Exploration

The area of the tenement has been explored intensively, mostly for VHMS-style mineralisation during the last forty years (summarised in Appendix 1).

In the two years between April 2007 and April 2009 Barrick had two brief but intense exploration campaigns. Both of these were largely project generation and data compilation, with only one soil sampling campaign and one drill hole completed. Core from the Newton Creek alteration zone was analysed using short wave-length spectroscopy. A 3D model of the geology of the lease area was commenced.

The drilling completed by Barrick was designed to test the down-dip extension of low-grade gold mineralisation at the Tyndall Creek Prospect. The first hole drilled was abandoned due to ground conditions (Z16732). The second (Z16739) has been interpreted to have drilled down dip and not tested the target. No gold was found in either hole.

After a review of the targets generated by Barrick, Unity Mining concluded that further testing of the Henty stratigraphic position at Tyndall Creek was warranted. Two drill holes were completed during the previous reporting period, TC6 and TC7, as documented in the Annual Report for this tenement for the period April 2010-April 2011 (Stonestreet, 2011). The results are briefly summarised below.

TC6 was 383.3m long and drilled from the east to test at depth the barite/haematitic horizon anomalous in base metals and gold. The highest Au assay was 0.5m at 0.2g/t on the contact of altered volcanoclastic sandstone with altered tuff, potentially a correlative of the Lynchford Tuff. TC7 was drilled from the same drill pad as TC6, but drilled to the east to test a discontinuity and interpreted fault visible in the magnetic interpretation of the area. TC7 is hosted in principally in jasper-bearing interbedded shale and carbonate rock, with the end of hole at 575m in andesitic lithologies. There were no were no significant assays in this hole (Stonestreet, 2011). Following the lack of success in drill holes TC 6 and 7, the Tyndall Creek drill hole site was rehabilitated during May 2011 (Timms, 2012).

The results of the MMI soil study conducted by Barrick in 2008 had never been properly assessed due in some respect to the sale of the tenement to Bendigo Mining<sup>1</sup> during 2009. A first pass geochemical analysis of these results was undertaken by Unity personnel that focussed on the relation of the geochemical anomalies to the mapped geology and structures of the study area.

LIDAR was flown over all of Unity's exploration and mining tenements in 2011. This data was processed and interpreted in conjunction with other geospatial and geochemical data sets (Vukovic, 2011). Following on from this UML decided to re-evaluate Tyndall Creek. A review of the available geochemical, geophysical and geospatial data was conducted by a geological consultant; from this a number of drill hole targets were generated as well as a first pass, resource estimation of the Lake Newton gold prospect (Vukovic, 2012).

Drill core and pulp samples from several historic and recent holes on the Tyndall Creek tenement were analysed as part of a wider rare earth element (REE) study. Forty five, 2m samples from the Tyndall Creek tenement were assayed for light and heavy REE's. Overall results indicate that the majority of samples were at/hear to the crustal abundance, yet there was some minor REE enrichment in the Anthony Road Andesite (Purvis, 2011).

Elevated base metal values in soils are found adjacent to the Henty Fault in the western part of EL 28/2001. Work began on gridding, mapping and soil sampling in the South Western portion of the tenement in June of 2011 and was ongoing through 2012.

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<sup>1</sup> Bendigo Mining Limited became Unity Mining Limited (UML) in December 2010

## **2 Work Completed during the Reporting Period 2012 to 2013**

The South Henty C-horizon soil survey was completed in January of 2013. All samples were sent for multi-element analysis at ALS Burnie, the results of which are discussed below (Section 2.1)

Two drill programs were submitted to MRT in November 2012 (granted in January 2013), for holes at Newton Dam and west of Tyndall Creek. Drilling of Z18650 at Newton Dam commenced in February and was completed mid March for a total of 955m. Assays are still pending.

### **2.1 South Henty C-Horizon Soil Program**

The South Henty soil sampling program, initiated in 2011, was completed in January of this report year. During the review of all geospatial data in the tenement, it was noted that there were gaps in the soil geochemistry data for the south western margin of the tenement adjacent to the South Henty Fault. This area is also of interest because of altered sediments intersected adjacent to the fault, in drill holes completed on 5M/2002, the Mine Lease to the north in 2011.

#### **2.1.1 Soil Sampling Methodology**

Rogers Exploration Services, Yolla, were employed to cut the soil gridlines, utilising the existing Pasminco grid lines where possible. Access to the northern part of the grid was from a track off the Newton Dam Spillway; a recut of the base line from Barrick's 2007 MMI sampling program (Barrick, 2009). Access to the middle and southern portions of the grid was from a recut track to old drill site YNC13, and the old Bradshaw's road, respectively (Figure 5). The original survey had twenty two lines on 100m spacing (AGD66\_55 Datum), 500m's long with samples taken every 25m. Of the planned 462 sample locations, 403 surface<sup>2</sup> samples, primarily soils were obtained. Planned sites not sampled included locations to the west of and in the Henty River in the northern portion of the grid that are not easily accessible and/or safe to access from current tracks and where there were physical barriers such as steep cliffs (i.e. Line 5,357,900N). Lines were not cut on the 5,356,400 or 5,357,600 northing's as these lines already had sufficient c-soil coverage from grids conducted by Pasminco in the 1980's. Sample sites were located using a handheld Garmin GPS unit; however there were issues with satellite resolution and accuracy in the steeper parts of the grid. Location of some of these sites was resolved by projecting the track and waypoint data with the LIDAR information for this region, using GIS (Mapinfo/Discover). Samples were submitted for preparation and multi element analysis using the 4-acid digest, ME-ICP61 and fire assay, Au-AA25 methods at ALS Burnie.

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<sup>2</sup> Twelve rock grab samples were obtained in areas of no soil or outcrop.

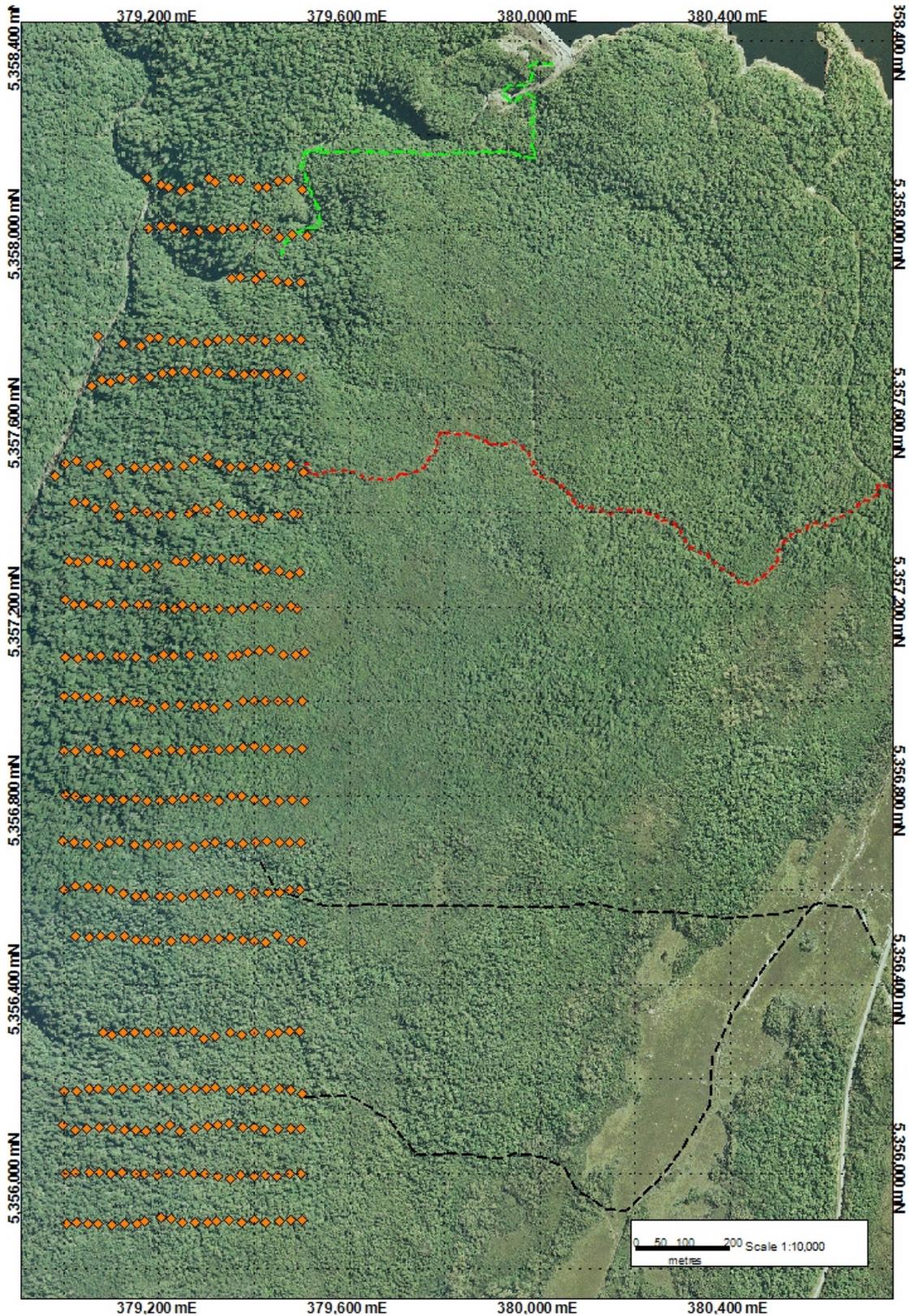


Figure 5: South Henty Soil Location Map. Orange diamonds are soil/grab sample location points. Hashed coloured lines are access tracks into grid. Black line = Bradshaw's Road/Pasminco baseline; red line = YNC13 drill site access track; green line = Newton Spillway/MMI access track (AGD66 Datum).

## 2.1.2 Soil Sampling Results

In general no significant soil anomalies were obtained from the results of this South Henty soil survey (APPENDIX 2). Statistics for gold and the base metal suite assayed at Henty are shown in the Table 1 below (full statistical suite summary in APPENDIX 3). An anomalously high result of 0.16ppm Au was obtained for the most north western sample on L8100. This was re assayed (sample 51473) and came out below detection. Distribution of soil results for Au, Cu, Pb and Zn is shown in Figure 6; note one of the highest base metals values was for Zn at 1470ppm.

Field	Min	Max	Sum Total	Mean	Median	Range	Variance	Standard Deviation	25 %tile	50 %tile	75 %tile	90 %tile
<b>Au ppm</b>	0.01	0.07	2.37	0.01	0.01	0.07	0.00	0.00	0.005	0.005	0.005	0.005
<b>Ag ppm</b>	0.01	1.01	26.67	0.07	0.04	1.01	0.01	0.09	0.03	0.04	0.07	0.12
<b>As ppm</b>	0.10	228.00	2710.50	6.73	3.00	227.90	241.85	15.55	1.4	3	6.8	13.78
<b>Cu ppm</b>	0.60	110.00	3888.80	9.65	5.60	109.40	167.74	12.95	3.3	5.6	10.85	19.16
<b>Pb ppm</b>	2.30	334.00	10746.40	26.67	17.10	331.70	1063.30	32.61	10.15	17.1	30	48.42
<b>Zn ppm</b>	3.00	1470.00	14929.00	37.04	20.00	1467.00	6854.53	82.79	13	20	37	66.8
<b>Bi ppm</b>	0.04	1.36	98.79	0.25	0.22	1.32	0.02	0.15	0.15	0.22	0.31	0.42
<b>Mo ppm</b>	0.07	11.80	447.77	1.11	0.91	11.73	0.85	0.92	0.62	0.91	1.34	1.81

**Table 1. Statistical Analysis of 403 Soil and rock chips samples from South Henty grid – Elements displayed are from Henty Exploration standard suite.**

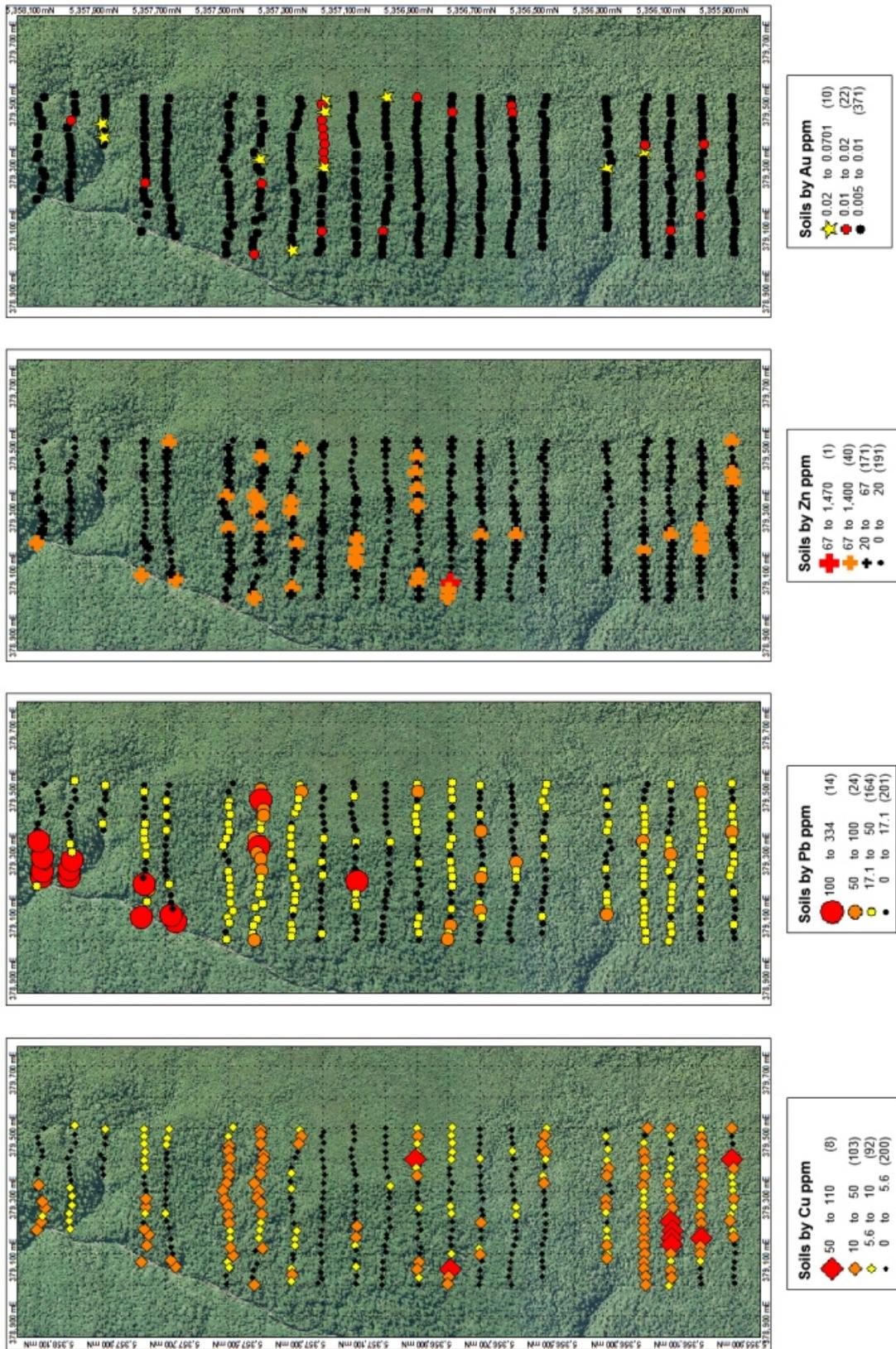


Figure 6: Distribution of Cu, Pb, Zn and Au (ppm) soil assay results at South Henty (AGD66 Zone 55 Datum; grid has 100m spacing).

## 2.2 Diamond Drilling

Two proposals for drilling on the Tyndall Creek tenement were submitted in late 2012 to MRT (APPENDIX 4). Both were granted and hole Z18650, near Newton Dam was chosen to be drilled in this reporting period. This area is zoned as multi use under the mines act. Hydro Tasmania was consulted with regarding the timing of and activities near Newton Dam.

### 2.2.1 Drill Site Preparation

An environmental site survey and desktop investigation<sup>3</sup> was conducted by UML environmental officer, J Hill to ascertain if there were any endemic/endangered species present on the proposed drill site; nothing of significance was found (APPENDIX 5). The drill pad was prepared by Williams Earthmoving; a drill pad was excavated into the road embankment, a staging sump dug adjacent the pad as well as several sumps constructed across the road in a culvert. Drill water return was pumped from staging sump to the sumps in the culvert. The drill site was situated off an access road to the Newton Dam Spillway, minimising the area of ground disturbance as no access tracks were required.

### 2.2.2 Diamond Drilling

Hole Z18650 was collared at Newton Dam on the 4<sup>th</sup> of February and completed on the 15<sup>th</sup> of March 2013. Drilling was undertaken by E드릴 Australia using a track mounted, UDR200 rig, with crews working five days per week on a double shift roster. Table 2 below summarises the metadata for this hole. The hole diameter was reduced from HQ to NQ2 (standard) at 371.8m, deeper than planned due to higher than average lift of the hole. The core was transported for processing to the exploration core shed at Henty.

Hole ID	Easting	Northing	RL	Azimuth	Dip	Depth
Z18650	379940.84	5358955.16	487.18	235	-56.1	955

Projection UTM MGA94 Zone 55

Table 2. Newton Dam Drill hole Z18650 metadata

The hole was capped on completion as per the standards outlined in the Tasmanian Mineral Exploration Code of Practise. Down hole surveys were measured using a Ranger survey instrument every 30m. The drill collar was surveyed by UML mine surveyor, P Wylie, relative to the Henty Surface Grid network.

### 2.2.3 Data Management

Detailed geological logging<sup>4</sup> was completed in both hardcopy and digital format for the Unity Database, with both are attached as appendices to this report (APPENDIX 6 & 7). Lithology was logged as per the four alpha ID, Unity Mining logging code system utilised by the mine and exploration geologists at Henty (APPENDIX 8).

### 2.2.4 Hole Z18650

Hole Z18650 was drilled westwards towards the Henty Gorge. In a region of limited drill cover, this hole was designed to test several targets as follows (Figure 7):

<sup>3</sup> Natural Values Atlas reports were analysed for both drill sites at Tyndall Creek and Newton Dam.

<sup>4</sup> Drill logs record structures, lithology, alteration, mineralisation and veining.

A weak-moderate magnetic anomaly near the collar.  
 Along strike of position of the massive sulphide bearing clasts in the Spillway (Spillway Horizon).  
 In the region of some structural disruption and weak soil anomalism.

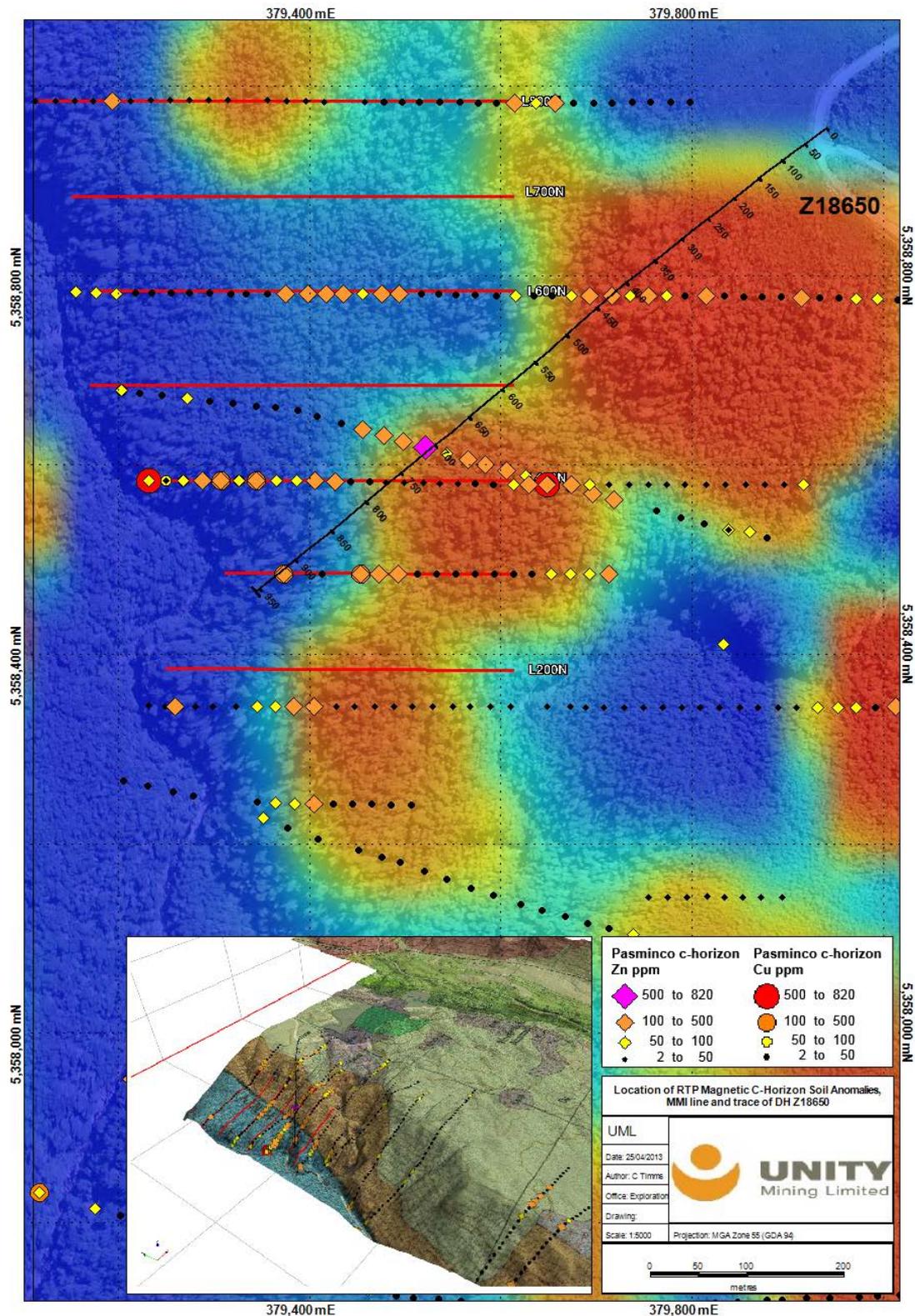


Figure 7: Location of drill hole Z18650 in relation to RTP and c-horizon soil anomalies (Pasmenco). Red lines indicate position of MMI soil samples (Barrick). Inset shows location of soil lines and drill hole trace in relation to 1:25,000 MRT geological map draped over DEM (GDA 94 projection).

Hole Z18650 collared in weak-moderately weathered, light grey, feldspar phyric (medium grained) dacite with minor wispy, chloritised mafics, with some fractured to cataclastic zones. Fresh rock was intersected at 61.7m; from here to 147.2m lithologies intersected were predominantly of dacitic composition, fine to medium grained lavas and graded shales to conglomerate. Several thin intervals of polymictic breccia/conglomerate (dacite + carbonate) occur within this interval.

The next interval to 416.6m consists of many interbedded layers of porphyritic dacite (often brecciated), dacitic sandstone, basalt and breccia and polymictic breccia; often in sharp contacts with the layer below. The basalt units are commonly amygdaloidal to aphyric. Basaltic breccias are somewhat stratified akin to those described in Hermann and MacDonald (1996) with minor pepperitic textures at contacts. Dacitic breccia units are typically clast supported.

An aphanitic to porphyritic, fine to medium grained, semi-massive, grey andesite lava occurs below this interlayered sequence to 488.3m. Minor chloritised, fine-grained hornblendes comprise the mafic component of this unit. Dacitic sediments, lavas and breccias with an increasing quartz composition (rhyodacitic?) occur below the andesite to the 641.1m; a major cataclastic, low angle fault zone of dacitic composition, cross cuts this interval from 579.4-586.5m.

Down hole to 770.4m is another strongly interbedded interval of chloritised basalts and basaltic sandstones, dacitic conglomerates and breccias, thin rhyolitic intrusives and pumice breccia and several polymictic conglomerate/breccia layers. An interval of predominantly basalt protoliths underlies the above unit to 856.3m. This section comprises very fine-grained to aphanitic, amygdaloidal (in places), green basalt and massive basaltic sandstone.

From here to the Henty Fault the lithologies become more sericite and quartz altered, also becoming increasingly foliated have a proto-mylonitic fabric. Graded, dacitic pumice breccia was intersected from 856.3-870.9m followed by quartz phyric, rhyolite breccia to 905.4m. This is underlain by a thin interval of weakly mineralised and 'bleached' proto A-zone material, MVMQ<sup>5</sup> overprinting rhyolite clasts, to 907.8m. Quartz phyric, rhyolitic breccia disrupted by a cataclastic fault zone (915.4-916.8m) is intersected up to the Henty Fault zone contact at 939m. The Henty fault occurs as a grey/grey cataclastic zone of strongly sericitised/silicified rhyolitic material. Fresh looking, pink, silicified rhyolitic sandstone was intersected on the footwall to the Henty Fault, from 940.2 to the end of hole at 955m. Cross section displaying geology is shown in Figure 8.

Weak, disseminated pyrite mineralisation occurs sometimes at lithological contacts, ringing clasts, as blebs or fine stringers. Course-grained, base metal sulphides (galena, chalcopyrite) occur in Devonian quartz veins. From 900m leading up to the Henty Fault there is an increase in pyrite mineralisation in the form of stringers and disseminated throughout the groundmass.

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<sup>5</sup> MVMQ = Massive quartz/sericite alteration with clasts of massive quartz +/- sulphide mineralisation.

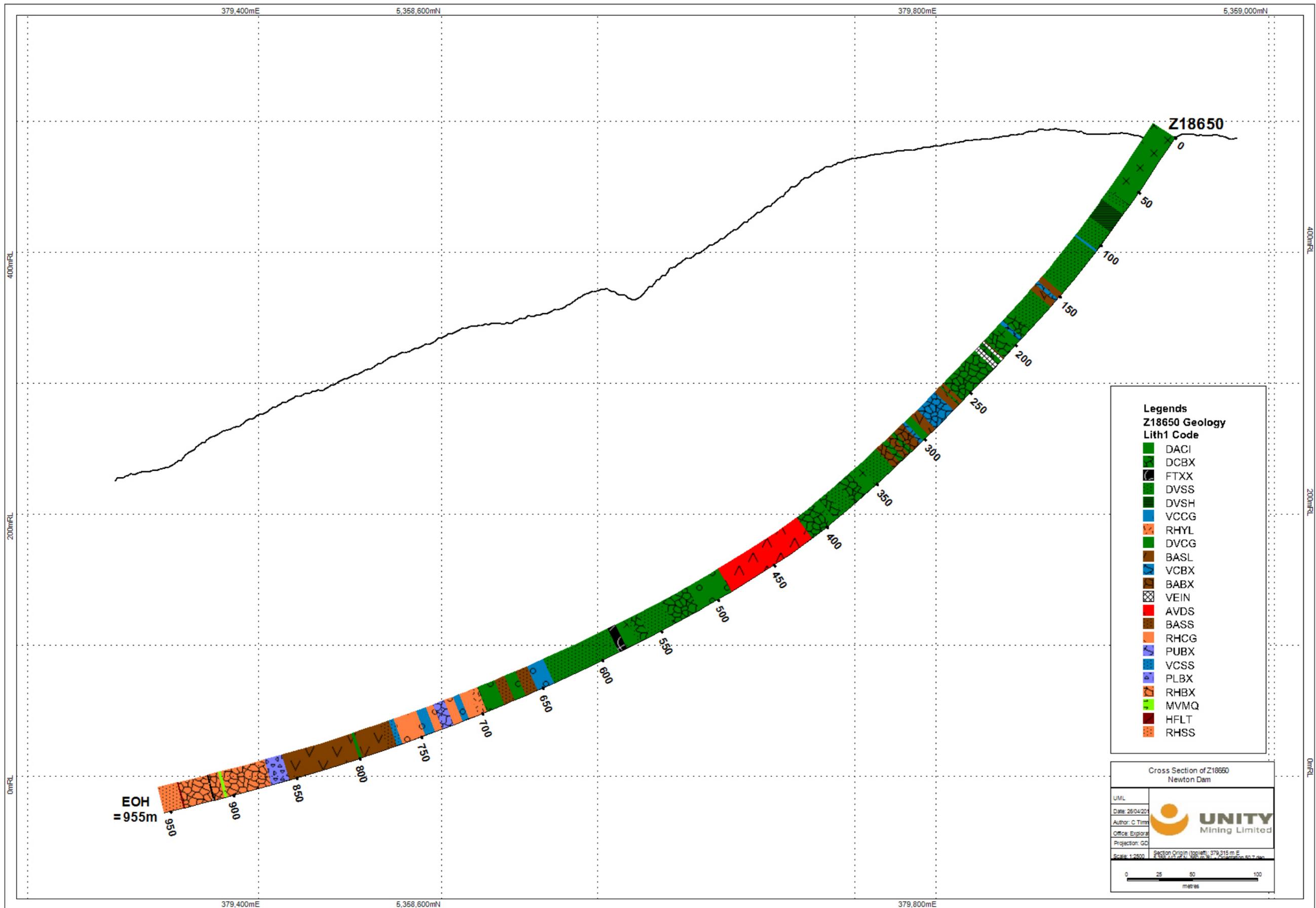


Figure 8: Cross section of drill hole Z18650 displaying primary lithologies. GDA 94 projection.

### 3 Conclusion

One of the two drill targets proposed to MRT has been completed during the reporting year. Assay results are still pending; these will be analysed with respect to the geology and further work on the Newton Dam target will be planned if these results warrant it. The South Henty, c-horizon soil program was completed in early 2013. Minor soil anomalies were deduced from the assay results though at this stage

### 4 Expenditure 2012/13 Reporting Period

Total Expenditure for the 2012/13 Reporting Period is set out in the below table.

<b>Expenditure EL 28/2001 May 2012-April 2013</b>	<b>\$</b>
Land access	1,242
Diamond drilling Z18650	313,442
Personnel	21,124
Soil Geochemistry	6,448
Gridding, pegging and sampling of South Henty Grid to April 2013	34,483
<b>Total</b>	<b>\$376,739</b>

Table 3: E28/2001 'Tyndall Creek Exploration Expenditure 2012/13.

### 5 Forecast Expenditure 2013/14

UML intends to drill the Tyndall Creek target (APPENDIX 2) in the summer season of 2013/2014 and do some follow up work on the South Henty Soil project.

<b>Forecast Expenditure May 2013-April 2014</b>	<b>\$</b>
Personnel	30,000
Drilling, site prep and rehab.	150,000
Geochemistry	5,000
<b>TOTAL</b>	<b>220,000</b>

Table 4: E28/2001 'Lake Newton' Exploration Budget Forecast 2013/14

## 6 References

- Barrick (Henty) Ltd, 2009. EL 28/2001 Annual Report and Application for Extension of Term. Annual Report to MRT, Tasmania.
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