



North Lorinna (Cethana) Annual Report 2008 – EL 29/2006



Geophysics Crew preparing for Induced Polarisation Survey – Lorinna Rd

John McDougall
Senior Geologist
Pluton Resources
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Summary

This report is the first Annual Report for the North Lorinna (Cethana) exploration licence (EL29/2006) and is submitted in a Mineral Resources Development Act (1995) compliant format by Pluton Resources Ltd. (Australian Stock Exchange Code: PLV, hereafter Pluton). Pluton also submits the report on behalf of joint venture partners Gujarat NRE Minerals (ASX code: GNM) and SOSM (John McDougall and Southern Ocean Science Pty Ltd.)

Pluton's primary focus is to add value to the Cethana licence by demonstrating the potential for large-scale porphyry-style mineralisation in close proximity to the Cethana magnetic anomaly. The potential for other bulk tonnage mineralisation styles is also being considered.

The licence covers ground that has similar characteristics to copper-gold districts in New South Wales including the Cadia and Goonumbra deposits. These characteristics include the setting and chemistry of the host rocks, as well as the styles of mineralisation and related alteration.

The tenement has not been systematically explored for gold by modern exploration; more particularly no diamond drilling had previously occurred on the licence and a limited suite of elements have been investigated.

Work by Pluton and the preceding holders (joint venture partners) for the period up until March 2008 included an extensive literature review for web presentation, access assessments, reconnaissance level rock chip sampling and mapping, two diamond drill holes for 883m and a reconnaissance scale IP survey.

Key findings to date have been two chargeability anomalies coincident with an approximately 2100nT aeromagnetic anomaly, both chargeable zones are adjacent to peaks in magnetic data. Drilling has intersected sheeted NNE dipping magnetite veins with visible chalcopyrite, quartz-magnetite-chlorite>pyrite-chalcopyrite veins, silica>carbonate-sulfide veins and semi massive pyrite veins. These styles of mineralisation and broad propylitic alteration characteristics suggest that the IP (chargeability) anomalies could be coincident with significant porphyry style mineralisation.

Approximately \$350,000 dollars has been spent on exploration with the majority of this on the deep drilling and further work is planned in relation to the feasibility of deep penetrating geophysics, follow up drilling targeting the chargeability anomalies and ongoing drill logging/sampling in the next licence year. No reduction in the current licence area is requested.

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Introduction

Pluton Resources Limited is an Australian Stock Exchange listed mineral exploration company managing and conducting exploration on EL 29/2006 (Cethana) for metallic minerals on behalf of its joint venture partners. Pluton intends to assess the tenement primarily for porphyry style alteration systems and mineralisation with a primary objective of identifying potential for bulk tonnage copper-gold mineralisation. The tenement was attractive for exploration due to similarities in aspects of the geology to porphyry-style copper-gold districts on mainland Australia and possible hybrid porphyry-VHMS systems in Tasmania.

Tenure

A tenement application (ELA 46/2004) for an area of about 15km² was made by John McDougall and Southern Ocean Science Pty. Ltd. (SOSM) in 2004. The licence application was subsequently joint ventured with Gujarat NRE Minerals (Gujarat). A new licence was reapplied for after a lengthy appearance in the mining tribunal where objectors stalled the approval through technical legal argument. The new application (a joint venture between GNM and SOSM) was then approved as EL 29/2006 (9 km²) and was then successfully partnered with an earn in period for Pluton Resources (Pluton). Currently Pluton is still earning 60% in to the project with Gujarat contributing 33.3% and Pluton contributing 66.6% after the earn in amount is reached. SOSM hold a free carried interest of 10% to bankable feasibility.

The exploration licence is located within the Mt Read Strategic Prospectivity Zone. This provides for security of exploration tenure by way of compensation of reasonable cost of work conducted (or resource defined) if a change in the tenement's land status results in the licence being revoked.

A new application (Oliver's Creek) has been made to cover the area previously applied for to the south of the current licence. The licence covers private land and is a joint application between the joint venture partners.

Location and land classification

The licence is located about 15km south of the township of Sheffield (pop approximately 1000) and about 60km from port facilities at Devonport (figure 1). The licence land classification consists of State Forest, MDC Informal Reserves, Regional Reserve, lakeside Hydro land and sits adjacent to Lake Cethana (a Hydro-Electric lake).

Topography

The topography of the licence is variable with a relatively flat area in the centre of the tenement and Lake Cethana covering the incised topography of the hydro dam flooded Forth River, contours range from 230m at the lakes edge to 680m on Olivers Hill. The slopes above the Lorinna Road are steep with areas below (west of) the road mostly moderately steep. A 'point' extending into the Lake in the west of the licence is moderately steep.

Vegetation and Soil

Vegetation comprises wet and dry eucalypt forest typically dominated by *Eucalyptus Viminalis*, *Obliqua* and *Amygdalina* spp. On wetter south facing slopes and near river banks there is dogwood scrub and *Acacia Dealbata* forest. Rainforest is occasionally present adjacent to creeks. Undergrowth is dependent on how dry the site is, but typically consists of spiky heath or ferns.

A thin soil profile <1m is generally developed throughout the major rock units in the tenement with outcropping bedrock generally restricted to steep slopes, road cuttings, ridge tops, cliffs and creek/river beds. A deeper soil profile is developed over Tertiary basalts and Tertiary sediments. A talus is commonly developed over the Ordovician Sandstone and a coarse talus is commonly developed over Cambrian volcanics.

Access

Access to the tenement is via a high quality un-sealed road (Lorinna Road). Internal access is via Old Lorinna Road, formed roads (eg: Wilks Road) and four wheel driveable fire breaks and tracks. Alternative access to the Cethana prospect is from the south of the tenement by way of the Lemonthyme Road (C139) and then ungazetted track (locally known as River Road).

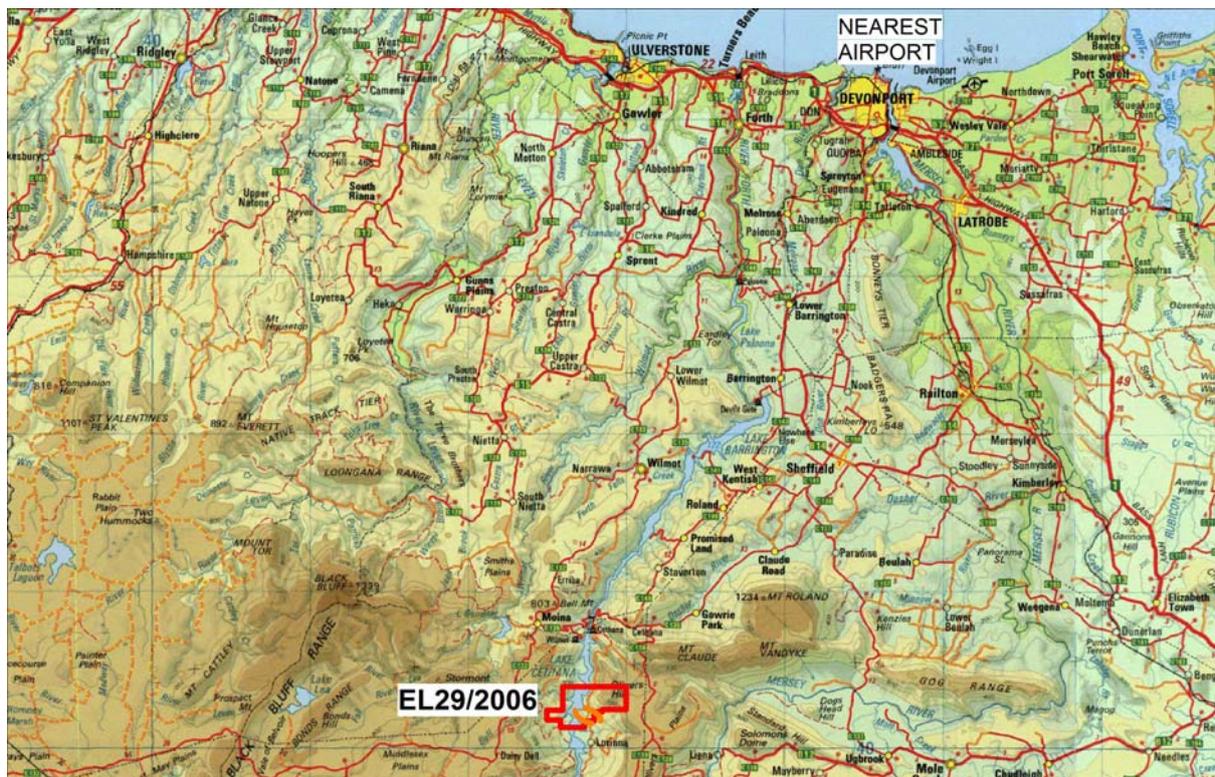


Figure 1 – Location of EL29/2006 relative to population centres (orange area is magnetic outline)

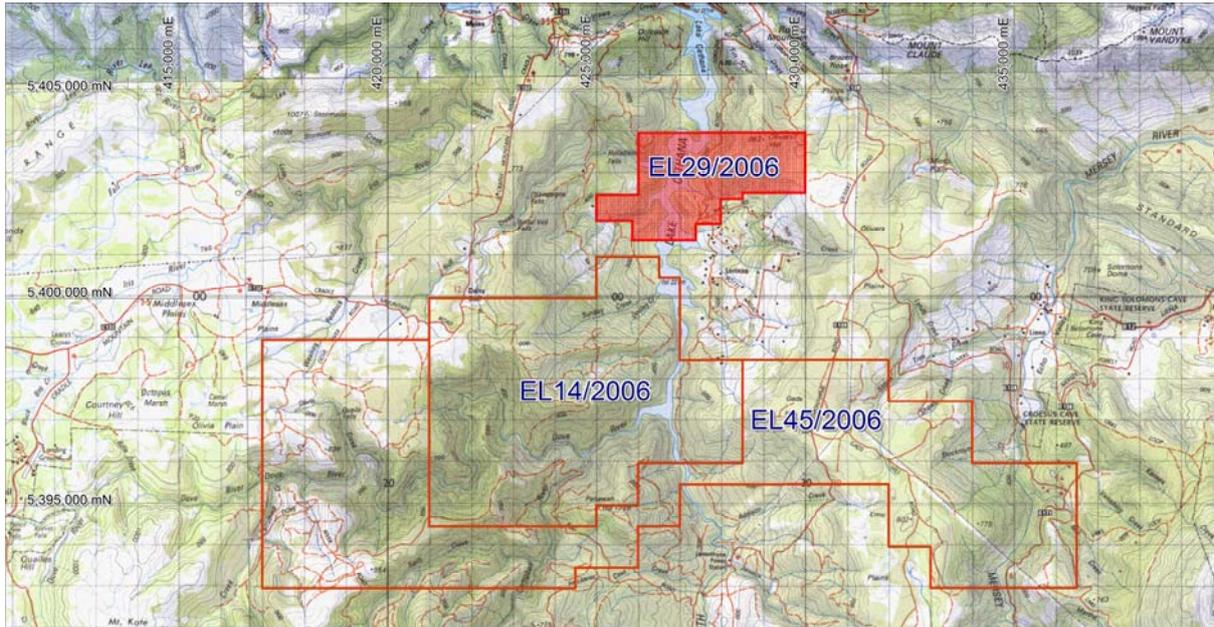


Figure 2 – Location of EL29/2006 relative to other Pluton Tenements (1:100,000 Tasmap topographic base, AGD66 – Zone 55)

Geology

EL 29/2006 (Cethana) is contained within the northern portion of the c500Ma Cambrian Mt Read Volcanic belt (MRV). The MRV comprises mainly acid and lesser mafic volcanics and associated intrusive rocks. The MRV unconformably overlies Proterozoic metasedimentary rocks and, is itself unconformably overlain by Cambro-Ordovician siliciclastics and limestones. Rocks to the north of the Licence are intruded by the Devonian Dolcoath Granite and there is in part a variable veneer of Tertiary basalt, sedimentary rocks and sediment.

The Mt Read Volcanic belt is highly mineralised. It contains numerous and some very large polymetallic VHMS-style deposits (e.g. Hellyer, Que River, Rosebery) and volcanogenic porphyry-VHMS hybrid copper-gold deposits (eg. Mt Lyell, Henty).

A description of the known lithologies and observed variations within the licence and potential correlations are summarised below.

Cambrian volcanics

The Cambrian volcanics within the licence area have not been assigned a formal correlation with the Mt Read Volcanic stratigraphy. It has been inferred they should be grouped with the Eastern Quartz Phyrlic Sequence (Corbett, 2003) or the Tyndall Group (Herrmann, 1989 in Fleming and Castro, 1989). More recent work by Pluton suggests that correlation with any one part of the MRV may be simplistic.

Mixed volcanic and volcanoclastic rocks

A quartz-rich volcano-sedimentary sequence was mapped within the tenement as Lorinna Greywacke on regional maps by Jennings (1963). This sequence comprises angular clast rich poorly sorted sandstone, pumaceous sandstone, and quartz rich volcanoclastic sandstones. Fine 'grain flow' greywackes and possible volcanics of near identical composition to the quartz rich volcanoclastics were observed in drill core on the adjacent Dove River licence (a Pluton held licence).

A second sequence was mapped as Bull Creek Volcanics, Burns (1960) subdivided the Bull Ck volcanics into the Upper Porphyry, Geales Bridge Member and Lower Porphyry Member. Reid (1963) agreed with these subdivisions. The Bull Creek Volcanics are likely to be the main unit encountered in drilling and within the licence. The sequence has superficial similarities to the Tyndall Group.

Dove Granite

Although the Dove Granite is not known to outcrop in the licence area it is of regional significance. The Dove Granite is regionally mapped as three occurrences, one in each of the Mersey, Forth and Dove valleys. Montgomery (1893) remarked on the similarity between granite at Gads Hill with Devonian Dolcoath Granite located north of the licence. In contrast, on visiting the Five Mile Rise Goldfield, Twelvetrees (1913) concluded that the granite showed greater affinity with other Cambrian age granites of the West Coast. In producing the last geological map and explanatory notes of the area, Jennings (1963) described a relationship of granite intruding what he thought to be Ordovician rocks. He concluded that the Dove Granite was Devonian. Radiometric K-Ar and Rb-Sr ages determined by McDougall and Leggo, (1965) firmly suggested the Dove Granite is Cambrian, albeit with some outlying Ordovician ages that were attributed to argon loss. Unfortunately, Jennings interpretation persists in citation through much of the literature and company reports until the 1980's.

The reality is that few workers completed little if any work on the Dove Granite. Pluton is the first company to systematically map and sample the granite to the south of the current licence, mainly to determine if the Dove Granite is of the right composition to produce copper-gold porphyry deposits. Work has yet to be completed on examining the geochemistry of granitic rocks in the region. The presence of this granite provides a potential 'parent rock' for porphyry mineralisation within the tenement.

Dolcoath Granite

Again this granite is not known to occur in the licence area, however it is of regional significance and is described by Jennings (1963) as a Quartz-Microcline>Plagioclase granite with trace biotite and zircon. The granite is thought to be an unlikely source of mineralisation associated with the magnetic anomaly.

Owen Group

Conglomerate and sandstone sequences are regionally unconformable on Middle Cambrian volcanic rocks. However no true conglomerates occur at the base of the Ordovician on the licence. At Cethana the Ordovician rocks observed in drill core is a bioturbated coarse to pebbly sandstone. The sequence has been identified by several previous workers as Moina Sandstone. The sandstone dips gently (15-20 degrees) to the South forming a veneer over the Cambrian stratigraphy and is likely to be unconformable on the volcanics.

Several kilometres northeast of the licence, the Moina Sandstone is underlain by thick sequences of Roland Conglomerate. The absence of the conglomerate units on the licence may indicate extensional conditions in the late Cambrian. The structures controlling this facies variation may be coincident with west-northwest-trending aeromagnetic linears including the main structural trend of the Cethana Anomaly.

Gordon Limestone conformably and gradationally overlies the Moina Sandstone just south of the licence near Lorinna. Both this and the Moina Sandstone were faulted during the Devonian Tabberabberan Orogeny.

Tertiary Basalt

The Tertiary Basalt at the Cethana prospect has been identified through regional mapping and on the current grid. Herrmann in Fleming and Castro (1989) estimated Tertiary Basalt flows over much of the region to be only a few tens of metres thick, this appears to be true of thin basaltic soils in the south of the grid, however this would be confirmed should drilling be planned in this location.

Tertiary Sediments

Tertiary sediments resembling fine lake sediments were encountered to 45m in CETD2. Similar sub-basaltic sediments were encountered in drilling south of the licence at the Powerful Prospect, this suggests a Tertiary age.

Early Exploration History

In 1859 James Smith discovered gold in the Forth River at “Golden Point” located north of the later developed Campbell’s Reward Mine (Twelvetrees 1913). Campbell’s Reward was discovered by the Campbell Brothers and opened in 1882. The discovery was prospected for several years by the brothers and by 1887 the lease was held by John.H.Glover (lease documents) and in 1890 the Campbell’s Reward Company was formed and took over the leases from Glover.

Twelvetrees (1913) described Campbell’s Reward as being located on the “new road to Lorinna on the eastern bank of the Forth River” (now referred to as the Old Lorinna Road in this report) however the workings were abandoned at this time. The Campbell’s Reward workings are mentioned in a number of government reports, however their isolation meant that they were rarely visited and never described in any geological detail. The mine was used to float a company in about 1890, however this venture appears to have lasted only a few years. The gold was reported to be in free and barbed wire form occurring within a kaolin vein which widened out into a 30-38cm barren vein. The vein was rich in silver and this made it difficult to market the ore (description by A. Campbell to Twelvetrees 1913 – could be either Angus or Alex).

In 1963 (Jennings) the adit accessing the workings (described as being just below the old Lorinna Rd) had been cleared a little and although in poor condition was accessible to 73m beyond which there was fallen ground. Veins similar to the described main lode were present previous to the 73m mark.

Modern Exploration History

Preamble on the Cethana Magnetic anomaly

The Cethana magnetic anomaly is an aeromagnetic feature first identified by the Mt Lyell mining and Railway Co in 1967. It was subsequently identified by John McDougall and Alistair Reed of Southern Ocean Science Pty Ltd in Western Tasmanian Regional Minerals Program data and thought to be a previously unknown anomaly. The subsequent review of literature has identified a long history of name changes which are summarised below.

The anomaly was first described as "Anomaly 24" - a NW-SE trending feature identified on an east-west ¼ mile spaced survey. Anomaly 24 had an intensity of 1400 gammas, the highest amplitude anomaly in the whole survey area. Anomaly 24 soon became "Anomaly A" (Webb, 1968; Foster, 1969) and then "Lorinna East" (Askins 1980) then to complicate things the Anomaly was referred to as Lorinna North with the "Powerful" magnetic anomaly then being assigned "Lorinna East" (Smyth, 1981). etc

MT LYELL (1965-1971)

Modern exploration began in 1966-67 when the area was examined by the Mt Lyell Mining and Railway Company Ltd as part of exploration for base metal or tin mineralisation within EL8/1965.

The Mt Lyell Co. undertook an aeromagnetic survey and a regional -80# stream sediment survey for tin, copper and zinc (Reid, 1967). A close association between zinc and copper was noted regionally however individual results were considered doubtful with known anomalous areas not all registering on the survey. Reid (1967) concluded that there could be real interest in the copper and zinc anomalies if it could be confirmed (by resampling) that the tenor of mineralisation at known localities such as Round Mount were not being identified.

Several areas were recommended for follow up stream sediments including the possibly anomalous copper (22ppm) stream sediment anomaly found to be coincident with anomalous zinc (150ppm) and taken from the small creek draining the western end of magnetic anomaly 24 - the Cethana aeromagnetic anomaly.

Particular anomalies were followed up by more detailed exploration consisting of soil geochemistry and geological mapping on grids and reconnaissance geophysical surveys with VHEM equipment and a magnetometer (Foster 1969).

The magnetic anomaly at Cethana first identified by the Mt Lyell mining and Railway Co as "Anomaly 24" with a NW-SE trending feature identified on an east-west ¼ mile spaced survey. Anomaly 24 had an intensity of 1400 gammas, the highest amplitude anomaly in the whole survey area. Originally interpreted as 200-500 feet below surface with a dip of 86 degrees south, 500-1200 feet wide and a susceptibility of 12000×10^{-6} and 14000×10^{-6} c.g.s units. By comparison of the anomaly to Savage River (127000×10^{-6} c.g.s units) the susceptibility of the anomaly was attributed to 5-6% magnetite by volume and 10% by weight (Zarzatjian, 1966). The anomaly was believed to be located within the Bull Ck Volcanics below Ordovician cover (Reid 1967) due to modelled depth.

A ground magnetics survey was recommended by Webb (1968) after discussion with K.O.Reid. Webb who noted that the Cethana Anomaly "lies at the junction of an WNW-ESE trend with a N-S trend and minor NE-SE (typing error?, -SW) trend therefore has a good structural position for mineralisation". Webb also noted the proximity of Campbell's Reward Mine to the anomaly.

Ground magnetics were conducted over Anomaly 24/Anomaly A (the Cethana anomaly) in 1967-8. Peak magnetism was found to be associated with north dipping sheared quartz-magnetite-chlorite schist on the southern side of the main Cethana aeromagnetic anomaly. The results of rock chip samples collected from the schist were not reported, but did not reveal 'any.... significant economic concentrations of elements'. In contrast, a small number

of soil samples collected on the southern flank of the anomaly revealed cobalt anomalism of 380ppm, as well as lesser Zn and Cu anomalism (c100ppm).

Mt Lyell Co. geologists were uncertain as to whether Co anomalism was due to Tertiary basalt. However, the geochemistry of 16 Tertiary basalts from the region (provided courtesy of John Everard, Mineral Resources Tasmania) show an average Co content of 50ppm, with an SD of only 7ppm. If the residual soil value of ~400ppm is derived from the basalt then it is highly unusual. (See recent rock chip data for explanation)

Reid (1967) also recognised that there were two ages of granite (the Dove Granite is now considered to be Cambrian) and therefore a possibility of two phases of mineralisation, the possibility of Cambrian mineralisation being remobilised in the Devonian was not precluded.

Part of EL8/1965 was relinquished in 1971 (approx 35km²), however the part containing the current EL was kept due to the sheared and pyritic nature of the Bull Creek Volcanics in the zone adjacent to the BCF which had 'similar lithological characteristics to the Mt Lyell sulphide deposits and similar age host rocks'. The Bull Creek volcanics in this zone were considered to represent a worthwhile target (McKibben, 1971). Later in the 1970's they concluded the probability of locating an economically viable deposit of their target type was low and relinquished the whole licence.

As a result of their investigations, the Mt Lyell geologists recommended more detailed soil sampling (including Au) and two drill holes. However, subsequent years saw exploration focused on other areas. This, coupled with a disastrous loss of base camp due to flooding of the Iris River saw work on the Cethana anomaly never completed and the ground was finally relinquished.

COMALCO (1974--1980)

In 1974, the Cethana anomaly was included within exploration licence 7/74, held by Comalco. Like EL8/65, EL7/74 included large tracts of land and included deposits located north of the outcropping Dolcoath granite. Comalco's exploration was primarily focused on locating extensions to fluorite mineralisation previously found at Moina (TCR's 78-1305 A-D, 78-1306, 78-1389). The fluorite was to be used in Comalco's aluminum smelters. Most reports up until 1980 deal almost exclusively with exploration in the Moina area.

Like the Mt Lyell company, Comalco embarked on a regional stream sediment program in the mid 70's (TCR80-1416). However, unlike Mt Lyell, Comalco used -20# (mesh) in the mistaken belief that -80# would not yield enough fine material in the steep terrane.

Ironically, Freeport had already run tests a year or so earlier in areas south of EL46/2004 (TCR73-977) and had shown that sampling using -40# underestimated results using -80# by 60% to 85%. Comalco did ultimately realise their mistake when areas of known mineralisation failed to show up in -20# data. They switched to using more conventional -80#.

Streams north and south of the Cethana anomaly were sampled using only -20#. Like the Mt Lyell company, Comalco did not include the small seasonal streams draining the Cethana anomaly. Not surprisingly, Comalco's -20# results show only very weak zinc anomalism (c85ppm) and moderate F anomalism (500-1300ppm) in the vicinity of the Cethana anomaly.

Comalco went on to explore the Cethana anomaly further. Unlike the Mt Lyell company, however, Comalco assumed that magnetite associated with the Cethana anomaly was of Devonian age. This exploration model appealed because a Devonian deposit was more likely to yield a fluorine-rich 'wrigglite', similar to that hosted by Ordovician rocks at Moina. A program of gridding, ground magnetics, geological mapping and soil sampling (Pb, Zn, Cu, Co) was undertaken over the Cethana anomaly.

The assumption was made that mineralisation was Devonian. What must have been disappointing to Comalco geologists was the almost complete lack of metal anomalism in Ordovician rocks. Samples of quartz-veined scree, typical of the Ordovician sandstone, were also barren. The geologists did note Cu and Pb anomalism in Cambrian rocks overlying the Cethana anomaly but went on to conclude that this reflected nothing more than 'elevated background'. This, despite values in soils up to 32 times that already calculated as background for the Cambrian volcanics.

Given proximity to Campbell's Reward, it was again recommended that the area be sampled for gold. Once again sampling for gold was not done.

SHELL (1980-1985)

EL7/74 was transferred to a joint venture to the Shell company of Australia in early 1980 (Smyth, 1981). Like Comalco, Shell considered its focus to be Devonian mineralisation associated with the main wrigglite/pyrrhotite/sphalerite skarns in the Shepherd & Murphy Mine (Moina), and a possible low-grade Sn-Au zone in the Tin Spur area.

Shell reviewed Comalco's exploration of the Cethana anomaly (now renamed Lorinna North). They conducted their own regional aeromagnetic survey and noted that measured magnetic susceptibilities in surface rocks at Cethana did not account for the intensity of the aeromagnetic anomaly at Cethana.

A 144m percussion hole PD1 was drilled approximately in the centre of the anomaly but away from previously detected geochemical anomalism and distal to the Campbells Reward Mine (incidentally from the quarry where Pluton have drilled their first diamond hole).

PD1 passed through 58m of apparently Tertiary cover before intersecting weak metal anomalism in Cambrian magnetite-altered volcanic. The hole was assayed every 2m through cover but only once every 10m in the mineralised volcanic. The hole suffered from water problems and sample dilution. Although only mildly anomalous in copper (the log showing up to 280ppm Cu and 290ppm Zn), the results were mistakenly under-reported as being a maximum of only 105ppm Cu and gold was not assayed.

Susceptibilities measured from drill chips were believed at the time to explain the anomaly as being a magnetite-altered andesite. No attempt was made to determine the cause of the alteration.

Shell also noted that the Comalco grid was not centred on the anomaly but was rather biased south of the anomaly and into areas of Ordovician and Tertiary cover. This was probably due to poor registration of the aeromagnetic anomaly noted in the 1960's geophysical data. Instead of collecting new samples, Shell re-assayed soil samples previously collected by Comalco, but this time for Sn, W, As, and Bi. They did not explore

the possibility of extensions to Pb and Cu anomalism Comalco had previously identified in Cambrian rocks along the western edges of their grid.

Like Comalco, Shell assumed a Devonian age for mineralisation, consistent with the age of mineralisation in their main areas of focus around Moina. Unlike Moina, they found no appreciable mineralisation at Cethana.

Shell re-submitted two lines of Comalco soil samples for gold assay. PD1 had already shown that Cu-Zn anomalism extended no more than a few meters into overlying Tertiary cover. Yet, only six of 39 soil samples resubmitted for Au were from soils overlying Cambrian rocks. The balance were from areas of thick Ordovician or Tertiary cover. None of the samples were from areas previously showing copper or lead anomalism. None were from the vicinity of the Campbell's Reward Goldmine. All the samples were up hill and/or in separate catchments to sites previously showing metal anomalism. All samples produced <50ppb Au, by regional standards in porphyry systems, this level of Au is now considered anomalous.

SHELL (1985-198)

In 1985, CRAE became managers in EL7/74 in a three-way joint venture with the Commonwealth Aluminium Corporation and Shell. CRAE embarked on another very widely spaced reconnaissance stream sediment survey (TCR86-2554). However, the only sample collected from the vicinity of the Cethana anomaly was upstream of the Lorinna Road, both up-stream and east of the Cethana anomaly.

CRAE (1985-1988)

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In 1986/7 CRAE reprocessed and reinterpreted Shell's aeromagnetic data (TCR87-2700). They 'rediscovered' the Cethana anomaly although this time it was referred to as Anomaly 36. It was again noted to be the largest anomaly within the region and, again, the association was made between the anomaly and the Campbells Reward Goldmine. CRAE disregarded that anomaly as a basic volcanic containing high magnetite. This interpretation made no reference to the earlier work already identifying the rock as variously rhyolitic, dacitic and andesitic. It also did not consider that the magnitude of the anomaly exceeded that easily explained by most basic Cambrian volcanic rocks known from the Mt Read Volcanic belt.

Exploration licence 7/74 was subsequently dropped, with the joint venture maintaining tenure over the Moina fluorite deposit via Retention Licence (RL10/1988).

RGC (1988-1990)

The Cethana anomaly was included in EL8/88, held by RGC (TCR89-3038). RGC again undertook reconnaissance stream sediment sampling, collecting both -200# and panned concentrate samples from 84 locations. In contrast to CRAE, RGC collected 2 samples from the streams north of and below the Cethana anomaly. One -200# sample proved weakly anomalous in Au (15ppb) relative to surrounding areas (<5ppb), whereas the panned concentrate returned a significantly higher 135ppb Au.

Importantly, CRAE's sample from above the Lorinna Road returned only 0.1ppb Au (TCR86-2554). The anomalous samples from RGC, therefore, could only have originated from the Cethana anomaly.

RGC also embarked on two re-interpretations of regional geophysical data previously collected by Shell and a more recent survey over the area by the Mines Department (TCR89-3038 and 90-3163). This was the first time that the Cethana anomaly was recognised as associated with one of two regional-scale north-northwest trending magnetic linears.

RGC did not conduct any further work in the vicinity of the Cethana anomaly. Rather, they concentrated subsequent exploration efforts in Ordovician rocks in the Five Mile Rise and Round Hill areas. Ironically, soil results for Cu in the Round Hill area were significantly less than that that had already been identified at Cethana by Comalco. RGC relinquished most of its interest in the Moina and Cethana areas in 1990.

MRT work post 1990

In 1999, the area was remapped by Mineral Resources Tasmania and a number of samples collected for petrological examination. The geologists mapping the area were unaware of the Cethana anomaly but collected samples containing up to 20% galena from areas previously shown to be anomalous for lead in soils, these samples were not assayed.

Western Tasmanian Regional Minerals program aeromagnetic, radiometric and electromagnetic data for the area was subsequently released in 2000/2001. In 2003, these data were used to help assess the potential of the area to yield granite-related mineralisation (UR2003-16). The Cethana anomaly was recommended for field checking. This was not done due to a lack of funds.

In 2003, a review of the stratigraphy of the Cambrian Mt Read Volcanics in the area again mentions the aeromagnetic anomaly east of Lake Cethana (UR2003-17). This report again concludes that the anomaly is likely to be a Devonian skarn, despite work already concluding this not to be the case.

Work to date

Digital Data Capture

SOSM acquired digital copies of all relevant reports from the MRT web site. Historic data sets in the reports include soil surveys and ground magnetics, these were captured and re-presented on a website for promotion of the prospect to potential joint venture partners. At the time of report and data collection a systematic review of the reports was done capturing the exploration history. SOSM also located the approximate position and historical assay results from RC drill hole PD1 which was previously unrecorded in the MRT drill hole database. The available data included assay for W,Sn,Ni,Cu,Pb,Zn,Mo but no assays were done for Au. The level of metal anomalism in the hole, more particularly an increasing tenor

of copper down hole provided encouragement that the volcanics were a suitable host rock for copper mineralisation.

Rock Chip Geochemistry

Under the provision of a prospecting licence three rock chips were collected from the prospect prior to EL application. The samples were used to identify the level of metal anomalism associated with the magnetic anomaly. The tenor of both copper and gold anomalism was appreciable and consistent with 'outer mineralised zones' within a porphyry system. Other rocks samples were then collected for photographic and petrographic characterisation, these were not sampled for assay.

A single rock chip was recently collected from workings in the vicinity of the Campbell's Reward gold mine and the geochemistry of the selected grab sample was very encouraging including a cobalt value of 0.287%. This level of cobalt is particularly encouraging because cobalt in soil anomalism was identified by previously explorers. Data capture of cobalt results from historic soil sampling in soil now represents a priority to aid drill targeting in the upcoming program.

All rock chip geochemistry is presented in appendix 1.

Drilling

Drilling was initially designed test the Cethana anomaly to depths of up to 700m.

The first drill hole (CETD1) was collared over the centre of the Cethana magnetic anomaly and drilled to a depth of 600.9m. The aim of the drill hole was to prove the association between the magnetic anomaly and porphyry-style alteration and, if possible to identify associated copper-gold mineralisation. Drilling intersected regularly oriented veined magnetite mineralisation from 455m down hole, with common visible chalcopyrite in magnetite and quartz veins from 376m to 524m down hole. First assays (a test batch) of non-contiguous sections of core are listed below, with assay results from remaining sections of core still awaiting laboratory analysis.

Preliminary results indicate drill hole CETD1 was drilled marginal to the Southern Chargeability Zone. It is the belief of Pluton geologists that assay results and core textures from CETD1 are consistent with drilling having intersected alteration and mineralisation marginal to a large porphyry target.

CETD2 (282.3m) was collared late during collection of geophysical data and on identification of the second chargeability zone – the Campbells Reward Extension Zone. The planned drillhole was located on an existing road and access to the site was approved quickly due to the disturbed nature of the site. The target was the coincident nature of known metal anomalism (both in soil and rock chips) and a peak in ground magnetic data.

CETD2 was collared from an existing road. CETD2 intersected sporadic copper mineralisation in magnetite and quartz veins and semi-massive sulphide veins at depth, however, the acute angle at which veining was intersected means the chargeability target remains poorly tested. CETD2 drill core is yet to be submitted for assaying.

CETD1 preliminary assay highlights thus far are listed below:

- **5m @ 0.04% Copper**, 0.03 g/t Gold, **99ppm Molybdenum and 50ppm Cobalt** from 455m
- **5m @ 0.04% Copper**, 0.02 g/t Gold, **50ppm Molybdenum and 61ppm Cobalt** from 500m
- Assays awaited 505m – 550m

- **5m @ 0.05% Copper, 0.03 g/t Gold, 51 ppm Molybdenum and 29ppm Cobalt from 550m**

From	To	Interval	Sample Number	Copper (%)	Gold (g/t)**	Molybdenum (ppm)	Silver (ppm)	Cobalt (ppm)
375	380	5m	154330C*	0.03	0.01	31	0.7	72
405	410	5m	154360C*	0.01	0.00	12	0.25	60
435	440	5m	154390C*	0.05	0.02	15	0.75	24
455	460	5m	154410C*	0.04	0.03	99	0.88	50
480	485	5m	154435C*	0.02	0.01	40	0.32	42
500	505	5m	154455C*	0.04	0.02	50	0.57	61
550	555	5m	154505C*	0.05	0.03	51	0.68	29
595	600.9	5.9m	154551C*	0.02	0.01	43	0.25	24

* Note that all Cu, Au, Ag, and Co results were assayed at 1m (except the last sample 0.9m) and length weighted and averaged to form a 5m composite **Gold analyses by Fire Assay all others by ICPMS. Anomalous values used as a cutoff grade are 0.025% Copper, 50ppm Molybdenum and 30ppm Cobalt

Table description: 5m composite results from test batch of CETD1 core, anomalous exploration results in pink, significant exploration intersections in orange.

Geophysics

The Cethana aeromagnetic anomaly is one of the most prominent magnetic features within the prospective Mt Read Volcanic belt, it is the largest magnetic anomaly in the region with a magnitude of about 2100nT.

The anomaly appears as a west-northwest oriented magnetic high. It lies on one of two west-northwest magnetic linears inferred on geological grounds to be regional basin-margin structures.

Magnetic susceptibility readings taken from Cambrian rocks overlying the Cethana anomaly typically range between 0.0025 and 0.0037 SI up to about 0.08 SI. Modelling the Cethana anomaly using ModelVision Pro indicates that these readings are not high enough to explain a magnetic field measuring 2100nT to 2500nT in aeromagnetic and ground magnetic data, respectively. The core of the anomaly, therefore, lies at depth.

The Cethana anomaly was first modelled in the late 1960's following acquisition of regional aeromagnetic data by the Mt Lyell Mining Company. The modelled depth of the anomaly was 200 to 500 feet (60-160m). However, a magnetic field measuring 1200 to 1300nT used by Mt Lyell is less than that measured in WTRMP or Comalco ground magnetic data (2100 to 2500nT, respectively). Consequently, depth estimates by Mt Lyell geophysicists should be considered as a minimum estimates only.

The recent drilling has largely explained the magnetic anomaly with common zones of >5% magnetite by volume as disseminations within volcanics and as sheeted veins that strike approximately 280 degrees and dip 60-80 degrees to the north.

Induced Polarisation Survey

Drilling coincided with a geophysical survey (induced polarisation) aimed at identifying concentrations of sulphide mineralisation at depth and within the area of the magnetic anomaly, the results of this survey are presented in Appendix 2. Primary data will be presented when grid coordinates have been accurately referenced.

Two main chargeable zones have been defined (see diagram below)

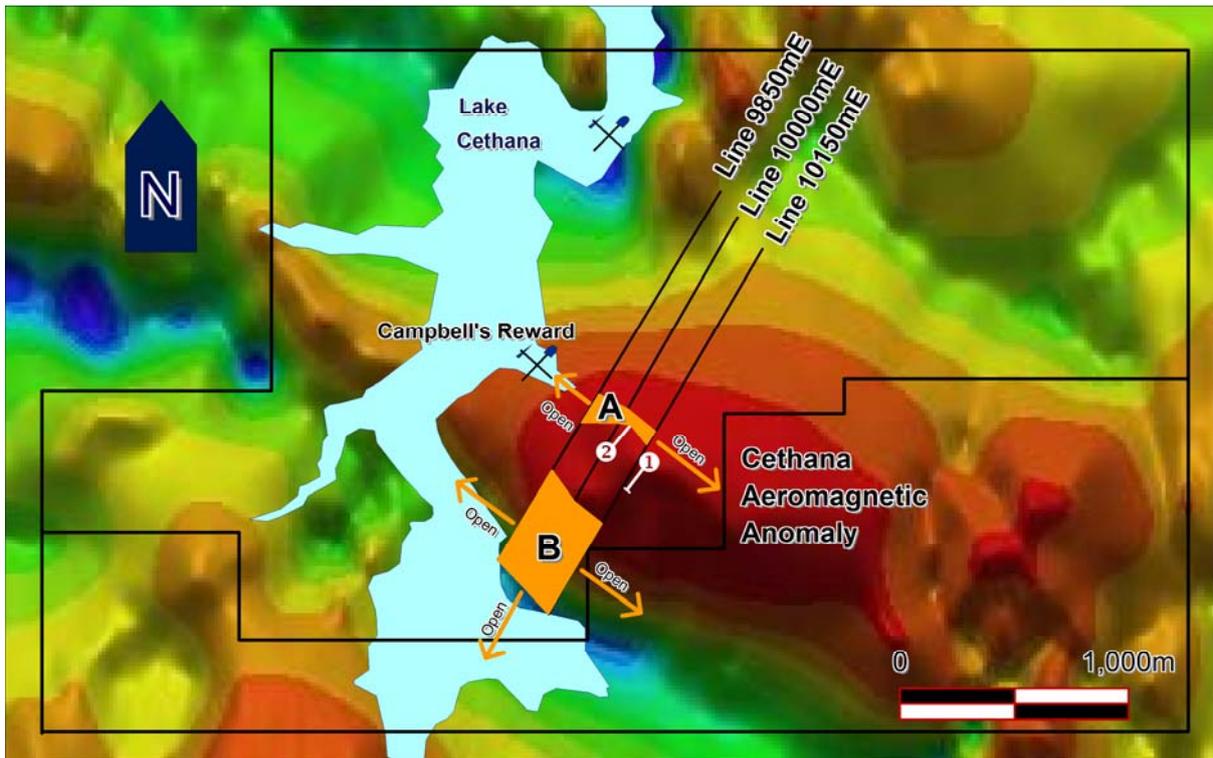


Figure 3: Schematic location of drillholes CETD1 and CETD2 (labelled 1 and 2 in white) with surface trace projected AND chargeability zones (Campbell's Reward Zone; A and Southern Zone; B) over aeromagnetics showing the large (red) Cethana magnetic anomaly.

Prospect Geology

The geology of the Cethana anomaly is very complex and will be presented as a more comprehensive review in the next annual report. Drilling identified magnetite altered volcanics with several veining episodes. Alteration identified is consistent with outer propylitic alteration. Once drill logging is complete a comprehensive geological sequence will be presented.

Discussion

Mineralisation Model

The targets style of mineralisation in the Cethana tenement is a bulk tonnage copper-gold system related to the Dove Granite. The Granite intrudes (possibly coeval?) Cambrian volcanics and older Precambrian schists and phyllites to the south. The area includes three known granite 'stocks' and porphyritic intrusives have been identified at the margins of both of these granite bodies.

Potentially deep crustal structures have been identified in airborne magnetic data to the north of the licence and are associated with variations in thickness within the basal Ordovician stratigraphy. These may have controlled the orientation of the Cethana Anomaly.

This has provided sufficient encouragement to investigate the potential of locating bulk tonnage copper-gold mineralisation of either an Eastern Australian porphyry style (eg: Cadia) or a disseminated style similar to the Mt Lyell deposits in Tasmania.

Tasmania has numerous volcanic hosted copper deposits within the Mt Lyell mineral field. Examples of these vary from disseminated pyrite-chalcopyrite VHMS systems to more characteristic high sulfidation style deposits which are commonly associated with large scale faults. The types of mineralisation at Mt Lyell are an example of the transitional nature of deposit styles and a hybrid mineralised body should not be overlooked as a possibility.

Preliminary indications are that there is a porphyry alteration system at Cethana, two outstanding chargeability anomalies provide excellent bulk tonnage targets. Pluton believes the chance of an economically significant discovery at Cethana is high and future work is proposed below.

Future Work

Drilling and geophysics have corroborated that areas within and around the large Cethana magnetic anomaly are a viable size Copper-Gold-Molybdenum target. Drilling planned for later this year (Q4) will target the chargeable zones of potential sulfide enrichment identified in the initial geophysical survey. The first holes will target the Campbells Reward Zone, the southern zone will undergo more careful targeting. Drilling results will be presented with the next annual report.

References

- Askins, P., 1980. EL 7/74 - Moina General Area, Report on all investigations to December 1979, Commonwealth Aluminium Corporation Ltd. Exploration Department (TCR 80_1416)
- Austin, G. and Serim, S., 1973. Exploration for Porphyry Copper, the Dove Granite area, Tasmania, preliminary field report, Cundill, Meyers and Associates Pty. Ltd. (Part of TCR 73_977)
- Corbett, K.D. and McClenaghan, M.P., 2003. A review and interpretation of the Lower Palaeozoic geology of the Que River – Sheffield Area with particular reference to the Cambrian volcanic sequences, *Tasmanian Geological Survey Record 2003/17*, Mineral Resources Tasmania.
- Fleming, M.J. and Castro, C.H. 1989. EL8/88 - Lorinna and EL36/88 - Round Mountain - Annual Report 1989, RGC Exploration Pty. Ltd. (TCR 89_3038)
- Fleming, M.J. and Castro, C.H. 1990. EL8/88 - Lorinna and EL36/88 - Round Mountain – Report on Areas Relinquished on 22 August 1990, RGC Exploration Pty. Ltd. (TCR 91_3163)
- Foster, M.J., 1969. Progress Report on Activities in EL8/65 Moina Area to March 1969, The Mt Lyell Mining and Railway Company Ltd. (TCR69_592)
- Jennings, I.B., 1963. Middlesex 1:63360 Series Explanatory Report, Geological Survey of Tasmania.
- Madden, J., 1997. EL30/1996 Mersey - First and final report for the Period 9 November 1996 to 13 November 1997, Rio Tinto Exploration Pty Ltd. (TCR 97_4097)
- McDougall, I. and Leggo, P.J., 1965. Isotopic Age Determinations on Granite Rocks from Tasmania, *Journal of the Geological Society of Australia* Vol12, p.295-332.
- McKibben, J.P., 1971, Interim Report on Moina EL8/65, The Mt Lyell Mining and Railway Company Ltd. (TCR71_812)
- Montgomery, A., 1893. Report on the Mineral Discoveries in the Neighbourhood of Bell Mount, Old Series Report No.111, Geological Survey of Tasmania
- Nye, P.B., 1933. Quarterly review of the gold mining industry of Tasmania for the quarter ending 30th June, Unpublished Report, Geological Survey of Tasmania.
- Reid, A.M., 1919. The Mining Fields of Moina, Mt Claude and Lorinna, Geological Survey Bulletin No.29, Geological Survey of Tasmania.
- Reid, A.M., 1919b. The Mount Pelion Mineral District, Geological Survey Bulletin No.30, Geological Survey of Tasmania
- Reid, K.O., 1967. Progress Report on Activities in EL8/65 (Moina Area) to June 1967, The Mt Lyell Mining and Railway Company Ltd. (TCR 67_470)
- Smith, J. Harcourt., 1898. Report on the Bell Mount and Middlesex Mineral Fields, Secretary of Mines Report 1898-99, Geological Survey of Tasmania

Smyth, W.D., 1981. Exploration Licence 7/74 – Moina Progress Report on Exploration during the Period 1/1/1980 – 31/7/1981, The Shell Company of Australia Ltd. Metals Division. (TCR 82_1728 part 1)

Twelvetrees, W.H., 1907. Report on the Bell Mount and Middlesex District, Secretary of Mines Report, Geological Survey of Tasmania

Twelvetrees, W.H., 1913. The Middlesex and Mount Claude Mining Field, Geological Survey Bulletin No.14, Geological Survey of Tasmania

Waller, G.A., 1901, Report on the Mineral Districts of Bell Mount, Dove River, Five Mile Rise, Mount Pelion and Barn Bluff. Secretary for Mines Report 1900-01, Geological Survey of Tasmania

Walsham, B.T., 1973. Report on Exploration Licence Area No. 12/73 in the vicinity of the Dove River, Freeport of Australia. (Part of TCR 73_977)

Webb, J.E., 1968. Interpretation of Airborne Magnetic Survey Staverton Area North Central Tasmania, The Mt Lyell Mining and Railway Company Ltd. (TCR 68_503)

Wilson, A., Cooke, D., and Thompson, J., 2002. Alkalic and high-K calc-alkalic porphyry Au-Cu deposits, A summary. CODES Special Publication 4, Giant Ore Deposits: Characteristics, genesis and exploration. p 51-55.

Zarzavatjian, P.A., 1966. Aeromagnetic Survey Staverton Area North Central Tasmania, AMEG Pty. Ltd. for The Mt Lyell Mining and Railway Company Ltd. (TCR66_431)

Appendices