



BULGOBAC (Boco Siding) EL 4/2000

**SIXTH AND FINAL ANNUAL REPORT
FOR THE PERIOD ENDING 15th DECEMBER 2006**

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1. SUMMARY

This report details exploration work undertaken on EL 4/2000 Bulgobac during the period 30 June 2005 to 29 June 2006, the sixth year of this tenement. Work on the licence has focussed on two areas, the Hollway prospect and the Sawmill Creek Track anomaly. The work completed comprised:

- Diamond drilling at the Hollway prospect (three holes for 1730.5m) and the Sawmill Creek Track anomaly (one hole for 669.2m);
- DHEM surveys on drillholes BOC3, BOC4, BOC5 and BOC7 at Hollway and BOC6 at Sawmill Creek;
- Pb isotope analysis of base metal mineralisation intersected in BOC3 the previous year;
- Selected whole rock geochemistry of drillcore from the Hollway Prospect.
- Infill partial leach soil sampling in the northern part of the license area.

At the Hollway prospect, drillholes BOC4 and BOC7 intersected minor base metal mineralisation within the lower parts of the Hollway andesite and upper part of the CVC.

Drilling at the Sawmill Creek anomaly intersected trace to minor base metal mineralisation associated with black shale and tuffaceous siltstones correlated with the lower Southwell Subgroup and trace to minor sphalerite associated with weakly altered qtz-lithic sandstones correlated with the Black Harry Beds.

2. INTRODUCTION

This report details exploration work undertaken on the Bulgobac EL 4/2000 during the period 30th June 2005 to 29th June 2006, the sixth year of this tenement.

Access to the tenement is via the Murchison highway and Emu Bay Railway, in the east, and on the Boco Road, cutting through the centre of the tenement. A network of 4WD tracks, developed for logging and mineral exploration, extend from these main access points and provide excellent access to the majority of the area of interest.

Zinifex's main target on EL 4/2000 is Cambrian Rosebery or Hellyer type Zn-Pb-Cu-Au-rich VHMS mineralisation hosted by the Mount Read Volcanics (MRV). The tenement covers a generally NE striking section of the MRV including the contact between the Central Volcanic Complex (CVC) and the overlying Southwell Subgroup (or lower Tyndall Group), separated in part by the Hollway Andesite.

Exploration activities during the current year have focussed on following up the significant mineralisation intersected the previous year in drillhole BOC3 at the Hollway prospect.

2.1 Attribution

The following personnel were responsible for the work carried out by Zinifex Rosebery Mine on the EL 4/2000 Bulgobac licence area during the reporting period:

Senior Exploration Geologist:	Mick Skirka – Zinifex Exploration
Senior Contract Geologist:	Gerald Purvis – Gerald Purvis and Associates
Consultant Geophysicist:	Jovan Silic – Flagstaff Consultants

3. LAND TENURE

EL 4/2000 Bulgobac (24 sq km) was granted to Pasminco Australia Limited on 16 June 2000 for a period of 5 years. The location of the Tenement is shown on Figure 1. EL 4/2000 covers ground that fell vacant on the relinquishment of EL's 24/95 (Aberfoyle) in February 1998, EL 47/96 (RGC) in September 1998 and the partial relinquishment of Pasminco's EL 44/88 in November 1998. During 2001 Pasminco applied for two blocks of vacant ground adjoining EL 4/2000; ELA 9/2001 (5 sq km) and ELA 10/2001 (4 sq km). These areas were granted on 9th August 2001 and were immediately incorporated into an enlarged EL 4/2000 (33 sq km). On April 5th 2004 the name of Pasminco Australia Limited was changed to Zinifex Australia Limited as part of a float of some assets. An application for a one-year extension of the license was submitted in June 2005 and granted on 5th August 2005.

Land covered by EL 4/2000 is all crown land designated as State Forest, informal reserves, parts of the Sawmill Creek, Boco Creek, Burns Peak and Mackintosh Forest Reserves and some HEC land all of which are available for exploration under the Mineral Resources Development Act 1995.

4. REGIONAL GEOLOGY

Basement in western Tasmania is Precambrian age, comprising predominantly greenschist facies meta-sediments with minor basalts and dolerites. Higher-grade amphibolite and eclogite facies are also present within the Precambrian. This Precambrian basement is exposed to the east of the Bulgobac licence (Figure 2).

Cambrian volcanism and sedimentation developed on this Precambrian continental crust, and is subdivided into the Eco-Cambrian tholeiitic Crimson Creek Formation (CCF) and, the mid to late Cambrian predominantly calc-alkaline, Mt Read Volcanics (MRV).

The CCF was deposited in shallow but rapidly subsiding basins (Brown, 1986). The CCF consists of basaltic lavas and volcanoclastics, turbidites, carbonates, chert and minor evaporites. This formation is exposed west of the licence.

Ultramafic cumulates and volcanic equivalents were thrust onto the CCF in the mid Cambrian (Crawford and Berry 1992). These rocks generate strong magnetic anomalies and outcrop within the Huskisson Syncline, to the west of the licence. The ultramafics are interpreted at depth beneath the licence (Leaman, 1992).

The MRV form a 200km long by 20km wide north-south trending belt along the eastern side of the Dundas Trough, adjacent to and in some areas on lapping and intruding the Precambrian basement. The volcanics include intermediate to felsic lavas, sub-volcanic porphyries and granites, volcanoclastics and basement-derived sedimentary rocks. The MRV host six economically significant volcanic hosted massive sulphide deposits.

Equivalents of the MRV underlie the entire Bulgobac licence, and vary from massive felsic lavas, volcanoclastics and subvolcanic intrusives of the Central Volcanic Complex (CVC) in the east and south. This package is overlain, in part, by a thin micaceous greywacke and shale sequence, correlated with the Animal Creek Greywacke, and the Hollway andesite, a package of feldspar-phyric dacitic to basaltic lavas and hyaloclastitic lava breccias with a geochemical signature suggesting a correlation with the Que-Hellyer Volcanics (Coutts, 1990).

Poorly mapped mixed provenance fine to coarse grained sediments (including volcanic quartz-rich volcanoclastics) with minor quartz-feldspar porphyry intrusives and lavas, probable correlates of the Southwell Subgroup (or lower Tyndall Group) overly the Hollway Andesite and define a synclinal structure in the north and west of the tenement (Reid, 1990; McKibben, 1993).

Regional structures that subdivide the MRV are the Rosebery Fault, west of the licence, and the Henty Fault, which is located 5km east of the licence.

Cambrian volcanism and sedimentation was followed by predominantly basement derived late Cambrian to Devonian age sedimentation, which includes siliciclastic conglomerate, sandstone and limestone. None of these sequences occur within the licence.

At least two phases of regional compression were associated with the mid Devonian Tabberabberan Orogeny (Keele, 1991). The development of folding, cleavage and regional thrusts in lower Palaeozoic rocks were associated with this event. Fold trends in the licence are N to NE.

Deformation was followed by the extensive intrusion of Devonian to Carboniferous granitoids. The Meredith Granite and associated hornfels aureole outcrop west of the licence area (Brown, 1986). The Devonian granites are associated with carbonate replacement Sn mineralisation at Renison Bell and Mount Bischoff, and the Pb Zn Ag vein deposits of Zeehan and, possibly, the Tullah Fields.

After substantial erosion of this terrane extensive Tertiary flood basalts and subvolcanic sediments were deposited. Remnants of the basalt flows are preserved to the north of the licence. In the Quaternary extensive unconsolidated glacial and fluvioglacial deposits up to >100m thick accumulated in the Boco Plain area and the Valley of Boco Creek to the west (Augustinius and Nichol, 1999). These deposits now obscure much of the Palaeozoic geology in the eastern and central part of the tenement.

No economically significant mineralisation is known from the licence area, however a large sericite-pyrite alteration zone has been located as isolated outcrops, and by drilling, on the glacially covered Boco Plain. This zone, the Boco Alteration Zone has been extensively explored, as discussed below.

5. PREVIOUS EXPLORATION

The area of EL 4/2000 Boco Siding (Bulgobac) has had a long history of modern exploration, most of which has been completed in two areas; the Boco Alteration Zone and the Hollway Andesite. In this report the term Hollway Andesite Prospect will be used for the Hollway andesite itself and the volcano-sedimentary sequence overlying the andesite and forming the syncline east of the Pinnacles Rhyolite. Outside these areas exploration has largely been restricted to geological mapping, at various scales, and stream sediment sampling. The tenement area has also been mapped at various scales by MRT (Barton et al., 1966; Collins, 1981; Corbett and McNeill, 1986). Tables 1 and 2 summarise the previous exploration over the Hollway Andesite (including the Summit Prospect) and the Boco Alteration Zone, respectively. Work on the Boco Alteration Zone has also been summarised in detail by Herrmann (in Elliston (1998a)) and Taylor (1987). Table 3 summarises work completed on EL 4/2000 by Zinifex/Pasminco.

Table 1 Previous exploration over the Hollway Andesite Prospect on EL 4/2000

Year & Reference	Activities
1975 Butt et al. (1975)	Completion of an Airborne EM survey (INPUT); no significant anomalies.
1977-1978 Hall (1978)	Establishment of the EAB grid (two lines of which extend onto the area of EL 4/2000); geological mapping, A0 soil sampling, SP and ground magnetics.
1978 Beamish (1978)	Orientation -80# stream sediment survey over the EAA grid area.
1978-1979 Hall (1979)	The EAA grid was cut (22.8km) north of the Boco Road. Mapping, rock-chip sampling, A0 horizon total digest soil sampling (1024 samples) and a ground magnetic survey were completed; no significant anomalies were located.
1980 Hall and Pigott (1980)	Extend EAB grid east by three lines; geological mapping, ground magnetics, SP and IP, A0 soil sampling (listed as planned work – can't find report of this work at MRT, but appears to have been completed).
1981-1982 Anderson (1982a)	EAB grid extended further to NW (ECE extension Grid), soil sampling (C Horizon), and geological mapping.
1983 Shaw (1983)	Drilling of DDH EAB4 (178.0m); results not reported in detail.
1983 Dvorak (1983)	Completion of DIGHEM III survey over area. No outstanding EM responses were located (Trussell, 1984)
1985-1986 Anon (1986)	Line cutting preparatory to UTEM survey, stream sediment sampling, minor rock-chip sampling.
1986-1987 Anon (1987)	Review of previous soil geochemical coverage; line cutting, UTEM III survey (no significant anomalies) and interpretation of stream sediment sampling (BCL & -80#).
1987-1988 Anon (1988)	Completion of UTEM III survey – no significant anomalies
1988-1989 Rosenhain and Mathison (1989)	“limited field observations”; re-logging DDH EAB4; description of geophysical and geochemical anomaly tested by EAB4.
1989-1990 Lorrigan (1990)	Regional aeromagnetic and gravity surveys and preliminary interpretation; collection of magnetic susceptibility data from drill core; rock-chip sampling along the Boco Road and other tracks; two lines of wacker sampling (and 65.5m of DDH) over glacials south of the Boco Road

Table 1 Previous exploration over the Hollway Andesite Prospect on EL 4/2000 cont..

Year & Reference	Activities
1990 Coutts (1990), Reid (1990)	BSc (Hons) theses completed on the Hollway Andesite (Coutts) and the Burns Peak – Boco Road areas (Reid). Work included geological mapping, petrography and whole-rock geochemistry; results indicate the Hollway andesite has geochemical affinities with the Hellyer Basalt.
1990-1991 Kirsner et al. (1991)	Photogrammetry and production of new base maps; re-processing of the 1990 aeromagnetic survey; digitisation of previous IP data; “brief” reconnaissance mapping.
1991-1992 Kirsner (1992)	Re-logging and sampling of DDH EAB4, geological mapping, compilation of soil data, construction of semi-regional cross sections, reprocessing of UTEM data.
1992-1993 Poltock et al. (1993)	Drilling BPD77 472.3m (collared just outside current EL); intersected volcanoclastic with massive sulphide clasts (to 36% Pb, 16.5% Zn); DHEM completed. Review of previous IP data.
1993-1994 Poltock and Saxon (1994)	Geological mapping, rock-chip sampling whole-rock geochemistry and petrology (largely outside the area of EL 4/2000). Drilling of BPD80 (469.7m) to test down-dip extension of sequence in BPD77; best intersection 6m @ 0.9% Zn, 0.2% Pb; DHEM completed. Review of UTEM and IP data.
1994-1995 Saxon (1995)	Geological mapping, rock-chip sampling and petrology (largely outside the area of EL 4/2000). Interpretation of regional gravity and magnetic data.
1995-1996 Quayle and Dibben (1996)	The EAB grid was refurbished and additional lines (1220E-1600E) cut to the east. Dipole-dipole IP and ground magnetic data collected. Compilation of existing mapping and further 1:5,000 scale mapping. A combined IP/soil target defined at the upper contact of the Hollway Andesite (Summit Prospect).
1996-1997 Weber et al. (1997)	Prospectivity Review; compilation of previous exploration data.
1997-1998 Murphy and Denwer (1998)	Diamond drilling (2xDDH for 410.2m) to test Pb-Zn soil (DDH BPD88; 199.8m) and IP (DDH BPD89; 210.3m) anomalies at the ‘Summit’ Prospect; weak Pb-Zn mineralisation was intersected.

Table 2 Previous exploration over the Boco Prospect on EL 4/2000

Year & Reference	Activities
1972-1977 Hanson (1977)	INPUT AEM survey (1975); gridding (57.5 line km), gradient array IP, ground magnetics, grid based mapping and regional mapping, soil sampling (no significant anomalies); diamond drilling (BBP207-209; 475m) to test IP anomalies; alteration and weak base metal mineralisation intersected.
1977-1978 Mill (1978)	New access track and cutting of the Boco Extension grid, regional 1:10,000 scale mapping, gradient array IP (no significant anomalies), ground magnetics.
1978-1979 Mill (1979)	Minor infill gridding and geological mapping, dipole-dipole IP, and soil sampling on the infill lines.
1979-1980	No work.
1980-1981 Mill (1981)	Review of geophysics and geology.
1981-1982 Sainty and McDonald (1982a, 1982b)	Boco extension grid pegged (35.76 line km), geologically mapped, soil sampled and covered with Dipole-Dipole IP and ground magnetics.
1982 Sainty (1982)	Geological mapping, trial percussion drilling program (7 holes for 226.0m).
1982-1983 Sainty (1983a)	Completion of three percussion holes (305.8m); petrology on samples from percussion drilling.
1983 Sainty (1983b)	Completion of four DDH (BBP242 and 246-248; 1899.7m) and two percussion holes (180.2m); core and chip geochemistry and some petrology; commencement of UTEM III survey.
1984 Sainty (1984a, 1984b)	Downhole SIROTEM completed – no anomalies; UTEM survey completed – 3 subtle anomalies; diamond drilling of four holes (BBP250-251, 253-254; 1689.5m) – two holes testing UTEM features – no significant mineralisation intersected.
1985 Williams (1985)	CSR farmed in to EL. Diamond Drilling (BBP278-280; 1601m) – no significant mineralisation intersected; petrology, drill core geochemistry and some sulphur Isotopes done; magnetic susceptibility data collected from drill core.
1986-1987 Taylor (1987)	CSR withdraw from JV; Pancontinental farm-in; review previous exploration and geology; petrological and geochemical study; UTEM survey over the extended Boco grid – no significant anomalies; Pancontinental withdraw from JV and tenement is relinquished.
1988-1989 Howland-Rose (1989)	Re-establish grid, RMIP and follow-up of 5 RMIP anomalies with gravity; no results warranting further follow-up. Tenement relinquished.
1990 Randell (1991)	Review of previous exploration, including stable isotopes and litho-geochemistry.
1990-1992 Kirsner (1992b)	Pasminco farm-in; Photogrammetry to produce base maps, high resolution helimagnetic survey, infill gravity survey and interpretation, regional scale geological mapping.
1997-1998 Elliston (1998a)	Review of previous exploration, re-interpretation of helimagnetic data, minor 1:5,000 scale geological mapping, rock-chip sampling and a detailed evaluation of the volcanic facies and hydrothermal alteration at the Boco Prospect. No significant targets worthy of follow-up and the tenement was relinquished (Elliston, 1998b).

Table 3 Previous exploration on EL 4/2000

Year & Reference	Activities
2000-2001 Simpson and McNeill (2001)	Previous exploration reviewed and digital data compiled. 20.8 line km of grid cut and(or) rehabilitated and surveyed with DGPS; 12 line km of this grid geologically mapped, 751 'B' and 'C' horizon soil samples collected and submitted for analysis (including duplicates and standards) and 7 rock chip samples analysed. This work has defined two partial leach soil anomalies, one on the glacially covered Boco Plains and the second at the base of the Hollway andesite, adjacent to a total digest soil anomaly located by previous explorers.
2001-2002 McNeill (2002)	The work completed comprised a review of previous UTEM data, 4.2 line km of grid cut and(or) rehabilitated and surveyed with DGPS; geological mapping of the grid, vehicular tracks and selected creeks and collection and analysis of 567 (including duplicates and standards) 'B' horizon soil samples. Work to date has identified three partial leach soil anomalies and a UTEM anomaly that are worthy of further follow-up.
2002-2003 McNeill (2003)	The work completed comprised a review of previous UTEM data and completion of a single loop ground EM survey. 4.1 line km of grid was cut, surveyed with DGPS and geologically mapped. These lines and 3.4 line km of uncut, DGPS located lines on Boco Plains were also partial leach (PL) soil sampled (322 samples including duplicates and standards submitted for analysis). 82 samples over the Sawmill Creek anomaly, previously analysed by PL methods, were re-submitted for total digest analysis to follow-up the PL soil anomaly.
2003-2004 McNeill (2004)	Work completed comprised 2.5 line km of gridding, surveying with DGPS and geologically mapping. These lines and 6.6 line km of uncut, DGPS located lines on Boco Plains were also partial leach (PL) soil sampled (373 samples including duplicates and standards submitted for analysis). Two anomalies worthy of further work remain on EL 4/2000 – The base of the Hollway andesite and at Sawmill Creek.
2004-2005 Skirka and McNeill (2005)	Work completed comprised partial leach (PL) soil sampling over the Hollway area and the central part of the tenement (404 samples), infill geological mapping on the Hollway grid and between the Hollway area and the Sawmill Creek anomaly and diamond drilling at Sawmill Creek (BOC1 and BOC2) and Hollway (BOC3). A surface EM survey between the Hollway area and the Sawmill Creek anomaly was also completed in addition to DHEM surveys at the Sawmill Creek anomaly (BOC1 and BOC2). Drillhole BOC3 returned 4.1m @ 11.3%Zn, 4.5% Pb associated with massive sulphide veining within altered felsic volcanics at the Hollway Prospect.

6. WORK COMPLETED 2005-2006 REPORTING PERIOD

Work carried out by Zinifex during this reporting period has included diamond drilling at Sawmill Creek and Hollway, DHEM surveys at Sawmill Creek and Hollway, Pb isotope analysis of BOC3 samples and whole rock geochemistry on selected samples from current and historic drilling. Infill partial leach soil sampling was also completed in the northern part of the license.

6.1 Partial Leach soil sampling

The Boco partial leach soil sampling program was designed to cover the northeast striking contact between the Central Volcanic Complex and Southwell sub-group correlates, interpreted to be the time equivalent of the Rosebery host sequence, between Burns Peak, to the south west, and Animal Creek, to the north east, a strike length of some 9.6 km. Samples collected during the current year were additional infill lines in the northern part of the license area.

The soil samples were collected at 25m intervals at or near a grid peg and involved digging a hole with a pick, removing the organic rich A-horizon and collecting approximately 500g of sample from the nominal B horizon. The samples were placed in ziplock plastic bags and once returned to the field office the bags were stored open to prevent anaerobic reactions. When a batch of 200 samples was collected, the sample bags were sealed and the samples despatched to Amdel in Adelaide for analysis by partial leach technique DL42. Elements determined were Ag, As, Au, Ba, Bi, Cd, Cu, Co, Mo, Ni, Pb, Ni, Y, Zn, Zr and the rare earth elements Ce, Eu, Gd, La and Sm. The pH of the leachate, after digestion, was also determined.

Three duplicate and two standard samples were collected per 100 samples. The field duplicates were also analysed in duplicate to allow assessment of both the sample and laboratory variance. Additionally at each sample site a small amount of soil was collected and stored in a chip tray for reference and to allow soil colour to be recorded. Soil colour was assigned from a Munsell Colour chart with 19 colours.

The 70 samples (including duplicates and standards) from this program were analysed as part of two batches (SDS 4558 and 4559). No samples are obviously contaminated and all 70 samples had an acceptable (pH>8.0) post-digest pH. Assay results are presented in Appendix 1 and sample locations are shown on Plan 1.

The entire Boco dataset (2374 samples, including duplicates) has been plotted as a series of images (Plan 2). The raw data has been used to prepare these images, however, images were also prepared using response ratios (value/median for each element) and also by SDS (both using the median value for each element). These images did not show anything additional to the raw data and have not been included. Interpretation of the data is largely as per McNeill (2003).

6.2 Diamond drilling

Four diamond drillholes were completed during the reporting period for a total of 2399.7m. Drillholes BOC4, BOC5 and BOC7 targeted the Hollway anomaly in the southwestern part of the license area to follow up significant mineralisation intersected in BOC3. Drillhole BOC6 targeted the Sawmill Creek Track anomaly in the north-eastern part of the license area.

6.2.1 Hollway Prospect:

The Hollway geochemical anomaly is a linear, 700m long, multi-element (Cu, Pb, Bi, As +/- Zn) partial leach soil anomaly described by Simpson and McNeill (2001). The anomaly appears to be offset to the north of a linear A0 and C horizon total digest soil geochemical anomaly (to 1800 ppm Pb, 3600 ppm Zn and 115 ppm Cu) coincident with an IP resistivity low at the base of the Hollway Andesite (Anderson, 1982b). The anomaly was tested by a 178m drillhole (EAB4), which intersected minor sphalerite and galena (<1% Pb + Zn) in veins. No downhole geophysics were completed on EAB4 and a UTEM survey completed across the area in 1998 (Anon, 1998) did not identify any significant conductors (Silic in McNeill, 2001).

Drillhole BOC3 targeted the Hollway anomaly downdip from EAB4 and intersected a wide zone of pervasively altered felsic lithologies within the upper CVC. An interval of strong to intense carbonate-sericite alteration and silicification (450m-475m) containing minor sphalerite-galena mineralisation was intersected which included a one-metre massive sulphide vein at 467.0m. This zone returned 4.1m @ 11.1% Zn, 4.5% Pb and 68 g/t Ag including 1.0m @ 34.6% Zn, 14.8% Pb and 235 g/t Ag from the massive sulphide vein.

Diamond Drillhole BOC4:

Diamond drillhole BOC4 was collared at 379479mE, 5384413mN (AGD66_55) on 30/05/2005 and completed at 669m on 22/07/2005. Drillhole collar and survey data are contained in Appendix 2, sampling and assay data are included in Appendix 3 and a detailed geological log is included in Appendix 4.

The drillhole intersected mixed amygdaloidal basalt to feldspar phyric andesite lava, lava breccia / hyaloclastite with sporadic trace sphalerite and galena to 284.8m (Hollway Andesite) with an underlying interval of fine grained to locally coarse grained, qtz-fsp-lithic sandstone/greywacke to 287.3m. A thick interval of variably altered feldspar phyric felsic lavas from 287.3m – 436.8m, interpreted to correlate with the upper CVC, overlies a mixed sequence of pumiceous breccia, felsic lavas and lava breccia and intermediate to mafic dykes from 436.8m to 689.0m (EOH).

The drillhole failed to intersect any significant mineralisation with observed mineralisation confined to minor sphalerite-galena associated with sporadic carbonate veining within the Hollway Andesite (typically on the contacts between amygdaloidal and fsp-phyric facies) and trace to minor sphalerite and galena (1-2%) as veins and veinlets within the upper part of the CVC. In general the felsic volcanics of the CVC were significantly less altered than those intersected in

BOC3. A summary log of BOC4 is presented in Table 4 below:

Table 4: Summary Log, BOC4

Interval	Description	Interpreted Geological Unit
0 – 178.4m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Rare trace pyrite.	
178.4m – 179.8m	Poorly sorted, fine to very coarse grained polymict volcanoclastic sandstone/mass flow. Trace pyrite.	
179.8m – 186.2m	Amygdaloidal basalt / andesite lava. Weak to moderate albite-sericite alteration.	
186.2m-188.9m	Poorly sorted, fine to very coarse grained polymict volcanoclastic sandstone/mass flow. Trace pyrite.	Hollway Andesite
188.9m-277.1m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Minor sph/ga mineralisation at 237.5-240.0m.	
277.1m-278.6m	Poorly sorted, fine to very coarse grained polymict volcanoclastic sandstone/mass flow. Trace pyrite.	
278.6m – 284.8m	Amygdaloidal basalt / andesite lava / lava breccia. Trace to minor pyrite	
284.8m – 287.3m	Fine grained qtz-fsp-lithic greywacke. Trace pyrite	Animal Creek Greywacke ??
287.3m – 436.8m	Variably altered, fsp phyric rhyolite / dacite lavas. Trace pyrite and rare trace sph/galena.	
436.8m – 545.7m	Intercalated fsp phyric felsic lavas and poorly sorted pumice breccias. Sporadic trace sph/galena. Mafic dyke at 485.2m-486.8m	
545.7m – 603.8m	Massive fine-grained andesite/basalt dyke (lava?).	
603.8m – 609.7m	Poorly sorted, clast supported polymict breccia. Trace pyrite	CVC
609.7m – 641.8m	Feldspar phyric felsic lavas. Minor lava breccia and thin mafic dykes.	
641.8m – 687.0m	Massive fine-grained andesite/basalt dyke. Minor galena at 641.8m-645.8m	
687.0m – 689.0m	Feldspar-qtz phyric felsic lava.	

Thirty-five samples (including one standard) were analysed at Busang Laboratories, Burnie for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF).

Better results included 7.0m @ 0.7% Zn and 0.1% Pb from 324.0m, including 1.0m @ 2.75% Zn from 330.0m, and 1.0m @ 0.6% Zn and 0.16% Pb from 334.0m. These intersections occur in the top of the CVC, stratigraphically higher than the BOC3 intersection. As with previous results from this area, the Cu, Ag and Au values were all low.

Diamond Drillhole BOC5:

Diamond drillhole BOC5 was collared at 379380mE, 5384409mN (AGD66_55) on 24/03/2006 and completed at 547.5m on 23/05/2006. Drillhole collar and survey data are contained in Appendix 2, sampling and assay data are included in Appendix 3 and a detailed geological log is included in Appendix 4.

The drillhole intersected pyritic black shale and vitric sandstone to 24.8m (Southwell Subgroup) with mixed amygdaloidal basalt to feldspar phyric andesite lava, lava breccia / hyaloclastite and reworked hyaloclastite with sporadic trace sphalerite and galena to 306.75m (Hollway Andesite). A thick interval of variably altered, feldspar phyric felsic lava and lava breccia, interpreted to correlate with the upper CVC, was intersected from 306.75m – 547.5m with only sporadic trace base metal mineralisation. Several thick intermediate to mafic dykes were intersected within the felsic lithologies of the CVC.

A summary log of BOC5 is presented in Table 5 below:

Table 5: Summary Log, BOC5

Interval	Description	Interpreted Geological Unit
0-24.8m	Pyritic black shale and vitric sandstone.	Southwell Subgroup
24.8m-181.0m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Sporadic trace to minor pyrite, predominantly within breccia matrix.	
181.0m-190.4m	Medium to coarse grained, mafic volcanoclastic sandstone. Minor disseminated pyrite.	
190.4m-261.75m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Trace to minor disseminated pyrite, predominantly within breccia matrix.	Hollway Andesite
261.75m-264.75m	Mafic volcanoclastic grit and minor interbedded siltstone. Trace pyrite.	
264.75m-306.6m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Minor pyrite in breccia matrix. Minor cb-hematite veinlets. Minor sphalerite at lower contact.	
306.6m-378.1m	Massive fsp phyric dacite lava and lava breccia. Minor sphalerite as small stringers near lower contact.	
378.1m-386.7m	Fine grained chloritic mafic dyke.	
386.7m-409.25m	Massive fsp phyric dacite lava and lava breccia. Minor sphalerite as small stringers near upper contact.	CVC
409.25m-428.4m	Fine grained chloritic mafic dyke.	
428.4m-547.5m	Variably fsp phyric and silicified dacite lava and lava breccia. Trace pyrite. Brecciated andesite dyke at 521.0m-525.5m.	

Six samples (including one standard) were analysed at Amdel Laboratories, Adelaide for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF). No significant results were received with maximum values of 2400ppm Zn and 155 ppm Pb.

Diamond Drillhole BOC7:

Diamond drillhole BOC7 was collared at 379590mE, 5384470mN (AGD66_55) on 20/05/2006 and completed at 494.0m on 19/07/2006. Drillhole collar and survey data are contained in Appendix 2, sampling and assay data are included in Appendix 3 and a detailed geological log is included in Appendix 4.

The drillhole intersected weathered fsp phyric felsic lava and lava breccia to 44.0m with mixed basaltic and andesitic lava, lava breccia / hyaloclastite and reworked hyaloclastite with sporadic trace sphalerite and galena to 267.8m (Hollway Andesite). The upper part of the CVC comprises mixed felsic lava breccia with common irregular amygdaloidal basalt dykes to 302.0m. A thick interval of variably altered, weakly feldspar phyric felsic lava and lava breccia was intersected from 302.0 – 454.5m with only trace disseminated pyrite. The lower part of the drillhole intersected mixed felsic lava breccia and aphyric dacitic lava with sporadic irregular amygdaloidal basalt dykes.

A summary log of BOC7 is presented in Table 6 below:

Table 6: Summary Log, BOC7

Interval	Description	Interpreted Geological Unit
0-44.0m	Weathered fsp phyric felsic lava and lava breccia.	Southwell Subgroup
44.0m-143.35m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Sporadic trace to minor pyrite, and rare trace sph and cpy.	Hollway Andesite
143.35m-151.3m	Medium to coarse grained, mafic volcanoclastic sandstone. Minor disseminated pyrite.	
151.3m-210.9m	Feldspar phyric andesite lava. Minor thin interbedded volcanoclastic sandstone and breccia. Trace disseminated pyrite.	
210.9m-215.0m	Pyritic, mafic volcanoclastic sandstone and minor breccia.	
215.0m-267.8m	Intercalated feldspar phyric andesite and amygdaloidal basalt lavas and breccias. Minor pyrite in breccia matrix.	
267.8m-276.8m	Variably altered felsic lava breccia. Minor intermediate to mafic 'clasts' or irregular dykes.	CVC
276.8m-302.0m	Mixed amygdaloidal basalt breccia and felsic lava breccia. Interpreted as irregular feeder dykes to Hollway Andesite crosscutting upper CVC. Trace disseminated pyrite and rare trace sph.	
302.0m-454.5m	Weakly feldspar phyric, albite altered felsic lava and lava breccia. Trace pyrite toward base of interval.	
454.5m-475.8m	Sericite altered felsic breccia with sporadic irregular mafic dykes or large clasts. Trace fine grained disseminated pyrite and rare trace sphalerite.	CVC
475.8m-494.0m	Mixed interval of amygdaloidal basalt dykes and generally aphyric felsic lava and lava breccia. Basaltic dyke intervals up to 2.9m with chilled, irregular contacts. Trace disseminated pyrite and rare trace galena.	

Thirty-two samples (including one standard) were analysed at Amdel Laboratories, Adelaide for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF). Only minor base metal anomalism was returned with maximum values of 4700ppm Zn and 240ppm Pb.

6.2.2 Sawmill Creek Track Anomaly:

The Sawmill Creek Track soil anomaly, a 900-1200m long linear feature sub parallel to an un-named creek, is defined by elevated (generally >5 x background [bg] and up to 20 x bg) As, Ag, Bi, Cu, Pb and Zn in partial leach soil samples. Total digest analysis of samples from two lines over the anomaly indicated low-level anomalism of Pb, Zn and As and a ground EM survey failed to locate any significant conductors (McNeill, 2003). The lack of an EM response may be seen to downgrade this target, however, if any mineralisation is poorly electrically connected, or of Que River size and at depth of >150m then it may not have been detectable. The presence of a soil anomaly at the interpreted host position (top of the CVC) made the anomaly attractive enough to warrant drill testing.

Two drillholes (BOC1 and BOC2) were completed into the anomaly during 2004/05, both of which intersected minor base metal mineralisation within the lower part of the Black Harry Beds.

The mineralisation intersected in BOC2, although of low-grade, was generally of higher tenor than that from BOC1 and the Sawmill Creek Track Anomaly continues northeast from BOC2 to the Boco Plains where it is interpreted to be overprinted by contamination from the Emu Bay Railway line, used for hauling base metal concentrates. It was therefore recommended that an additional drillhole be drilled to target the Black Harry Beds / CVC to the northeast of BOC2, beneath the Boco Plains.

Diamond Drillhole BOC6:

Diamond drillhole BOC6 was collared at 383120mE, 5388825mN (AGD66_55) on 28/10/2005 and completed at 669.8m on 16/12/2005. Drillhole collar and survey data are contained in Appendix 2, sampling and assay data are included in Appendix 3 and a detailed geological log is included in Appendix 4.

The drillhole intersected mixed dacite lava, lava breccia, pumice breccia and siltstone/shale of the Southwell Subgroup to approximately 230m, micaceous greywacke and siltstone of the Animal Creek Greywacke to 438.0m and tuffaceous sandstones of the Black Harry Beds to 468.4m. An interpreted faulted repeat of the Animal Creek Greywacke occurs from 468.4m to 530.7m with underlying tuffaceous sandstone of the Black Harry Beds. The drillhole was terminated at 669.8m (limit of rig capability) in mixed volcanoclastic sandstone and pumiceous mass flows, interpreted to be the lower part of the Black Harry Beds. The drillhole failed to reach the CVC, due mainly to an interpreted structural repeat of the Animal Creek Greywacke and a steeper than expected overall dip.

Observed mineralisation comprised trace sphalerite as veins and disseminations through the Southwell Subgroup and as trace to minor sphalerite (to 1-2%) as veins, blebs and disseminations throughout the Black Harry Beds.

A summary log of the drillhole is presented in Table 7 below:

Table 7: Summary Log, BOC6

From (m)	To (m)	Description	Interpreted Geological Unit
0	76.6	Feldspar phyric dacite, dacite breccia and pumiceous mass flows.	Southwell Subgroup
76.6	105.8	Black shale and tuffaceous siltstone. Trace disseminated sphalerite.	
105.8	151.4	Felsic mass flows / pumice breccia and poorly sorted lithic wacke. Trace sphalerite as disseminations and small veins.	
151.4	224.1	Feldspar phyric dacite and dacite breccia. Sporadic trace sphalerite.	
224.1	230.1	Laminated, pyritic siltstone.	
230.1	438.0	Fine to medium-grained qtz-mica-lithic sandstone. Variable cycles from massive to well-bedded. Minor intervals of laminated black shale and coarse grained lithic wacke. Trace to minor pyrite as blebs along So.	Animal Creek Greywacke
438.0	468.4	Fine grained to very fine grained, tuffaceous sandstone. Grading downhole to coarse grained volcaniclastic sandstone. Faulted lower contact.	Black Harry Beds
468.4	530.7	Fine to medium-grained qtz-mica-lithic sandstone and interbedded siltstone	Animal Creek Greywacke
530.7	598.8	Fine grained to very fine grained, tuffaceous sandstone. Trace sphalerite as small veinlets and disseminations	Black Harry Beds
598.8	669.8	Mixed interval of tuffaceous sandstone, coarse grained crystal rich sandstones and pumiceous mass flows. Trace to minor sphalerite as blebs, disseminations and veinlets	

One hundred and eleven samples (including two standards) were analysed at Busang laboratories, Burnie for Cu, Pb, Zn, Ag, Fe, Mn, As and Sb (by ICP), Au (by ppb fire assay) and Ba (by XRF).

Better results included 7.0m @ 0.4% Zn from 98.8m including 1.6m @ 1.75% Zn from 104.2m from black shale and tuffaceous siltstones of the Southwell Subgroup. Several other wide intervals returned >0.1% Zn including 12.2m @ 0.2% Zn from 606.7m within the Black Harry Beds.

6.3 Geophysics

During February-March 2006, Outer Rim Exploration completed a Down Hole EM survey on drillholes BOC3, BOC4 and BOC6.

A single transmitter loop was used and single component data was collected at 25m intervals over the entire length of the drillhole. The operations report and results of this survey are contained in Appendix 5.

In December 2006, Outer Rim Exploration also completed a DHEM survey on drillholes BOC5 and BOC7. A single transmitter loop was used and single component data was collected at 25m intervals over the entire length of the drillhole. The operations report and results of this survey are contained in Appendix 6.

The results from both surveys were reviewed by consultant geophysicist Jovan Silic. No anomalies worthy of follow-up were identified.

6.4 Whole rock geochemistry

Fifty samples (including two standards) from drillholes BOC3, BOC4 and EAB4 were submitted to Amdel, Adelaide for whole rock geochemistry. Results are presented in Appendix 7.

The majority of these samples were collected as part of an honours project on the Hollway Andesite by Daniel McIntyre at CODES, University of Tasmania. For the remaining samples, box plots for Ishikawa Alteration Index (AI) vs Na₂O and AI vs Chlorite-carbonate-pyrite Index (CCPI) were produced and are presented in Figure 3. Most samples displayed little evidence of significant VHMS-style hydrothermal alteration with several samples showing moderate to strong Na-depletion and weak – moderate alteration signatures.

6.5 Pb Isotope Analyses

Two samples of galena from the main base metal vein mineralisation intersected in drillhole BOC3 were submitted to Graham Carr at Sirotope, CSIRO.

Pb was separated from the samples using ion exchange resin following digestion in a solution of 8M HCl + 8M HNO₃ and analysed by conventional Thermal Ionisation mass Spectrometry (TIMS) using a VG Sector 54E multi-collector instrument. The analyses were undertaken by M. Korsch. Analytical precision at the 95% confidence level based on over 2000 analyses of standard SRM 981 is 0.10% for the ²⁰⁶Pb/²⁰⁴Pb ratio, 0.15% for the ²⁰⁷Pb/²⁰⁴Pb ratio and 0.3% for the ²⁰⁸Pb/²⁰⁴Pb ratio. Results are shown in Table 8 below and plotted in Figure 4.

Table 8: Pb Isotope Results. BOC3.

Plot No	Lab No	Sample No	²⁰⁶ Pb/ ²⁰⁴ Pb	²⁰⁷ Pb/ ²⁰⁴ Pb	²⁰⁸ Pb/ ²⁰⁴ Pb	Anal. Date
1	W395	BOC3_1	18.419	15.619	38.302	26/09/2005
2	W396	BOC3_2	18.394	15.605	38.219	26/09/2005

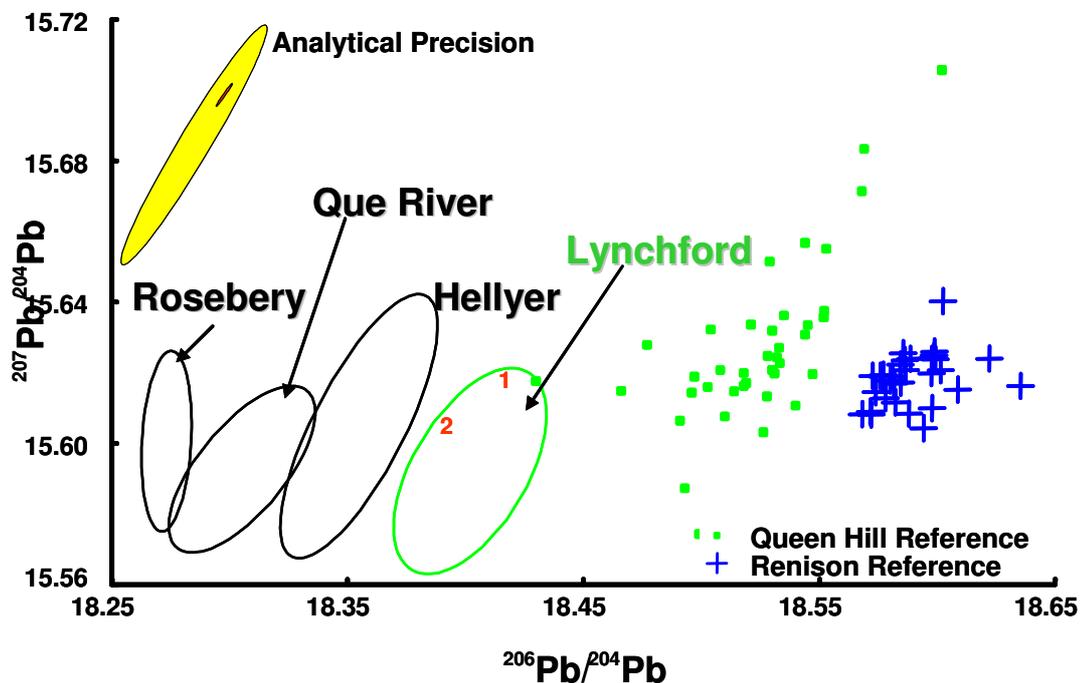


Figure 4. Pb isotope analyses, BOC3.

As shown in Figure 4 above, the Pb isotope values plot within the Lynchford field, between the Hellyer and Queen Hill fields, in the ambiguous area between the Cambrian and Devonian mineralisation events.

7. CONCLUSIONS

A program of partial leach soil geochemistry, geological mapping, surface and Down Hole EM surveying and diamond drilling was completed during the six years of tenure of EL 4/2000. This work has focussed on exploring the northeast striking contact between the Central Volcanic Complex and Southwell sub-group correlates, along a strike length of some 9.6 km, for Rosebery and Hellyer style VHMS deposits. Partial leach soil geochemistry, geological mapping and surface EM coverage over the prospective stratigraphy is now complete. Two areas of interest were identified on EL 4/2000.

Hollway Prospect

At the Hollway prospect, drillhole BOC3 intersected 4.1m @ 11.3% Zn, 4.5% Pb and 70 g/t Ag from 464.9m (including 1.0m @ 34.6% Zn, 14.8% Pb and 235 g/t Ag from 467.0m) associated with qtz-sericite-carbonate altered felsic volcanics. This mineralisation is located within a wide zone of pervasively altered lithologies, comprising strong to intense carbonate-sericite alteration and silicification.

Three drillholes (BOC4, BOC5 and BOC7) were completed to follow-up the BOC3 intersection down dip and along strike to the southwest and northeast (Figure 5). These drillholes have failed to intersect any significant mineralisation. Down-hole EM surveys on all four drillholes have been completed and the absence of any conductive response from these surveys has downgraded the potential of the Hollway Prospect area to host a significant base-metal resource.

Sawmill Creek Track Anomaly

Three diamond drillholes targeting the Sawmill Creek Track Anomaly (BOC1, BOC2 and BOC6) all intersected wide intervals of minor base metal mineralisation associated with weakly altered qtz-lithic sandstones correlated with the Black Harry Beds. The results from this drilling indicates that the Sawmill Creek Track Anomaly is likely to be sourced from minor base metal mineralisation within the lower part of the Black Harry Beds.

Down-hole EM surveys on all three drillholes have been completed and the absence of any conductive response from these surveys has downgraded the potential of the Sawmill Creek Track anomaly area to host a significant base-metal resource.

8. ENVIRONMENT AND REHABILITATION

Surface disturbance activities undertaken during the reporting period comprised:

- One drill pad including two in-ground sumps at the BOC6 site and the reopening of an historic spur track off the Sawmill Creek Track;
- One drill pad including two in-ground sumps at the BOC5 site, located on the BOC3 access track at the historic BPD88 drillsite.
- One drill pad including one in-ground sump at the BOC7 site, and the excavation of approximately 150m of new access track through moderately open forest from the BOC3 drill site.
- Minor trackcutting to enable DHEM survey loops at BOC7 and BOC6.

All drillhole collars were capped and sumps backfilled. The BOC6 drillsite has been rehabilitated including the lower part of the spur track off the Sawmill Creek Track.

At the time of writing the access track between BOC5 and BOC7 remained open. Rehabilitation of this track is scheduled for January 2007. After consultation with MRT environmental staff, the reopened access track down to BOC5 will remain open pending the ERA process for EL4/2000. Zinifex will rehabilitate this track to the satisfaction of MRT environmental staff if the successful ERA applicant does not require the use of the track.

9. EXPENDITURE

Total expenditure for all work undertaken by Zinifex Rosebery Mine within Bulgobac EL 4/2000, for the period ending 15th December 2006 was **\$556,203.65**. A detailed expenditure statement is given below.

Personnel	\$7,424.21
Travel & Accommodation	\$511.2
Geoscience Consultants	\$20,709.54
Geophysics	\$21,303.97
Geochemical/Assays	\$23,814.26
Diamond Drilling	\$318,511.15
Other Contractors	\$51,326.26
Stores & Supplies	\$5,888.55
Vehicles, Plant & Maintenance	\$7,388.3
Land & Environment	\$43,905.09
Computing	\$450.5
Depreciation, Office, Sundry	\$4,406.65
Administration Fee 10%	\$50,563.97
Total	\$556,203.65

10. KEYWORDS & LOCALITY

Keywords

Hollway Andesite, Boco Alteration Zone, geology, Partial Leach soil geochemistry, line cutting, geological mapping, diamond drilling, whole rock geochemistry, geophysics – DHEM, geophysics – EM, Sawmill Creek prospect, Pb isotope

Locality

1:250,000 BURNIE SK55-3
1:100,000 SOPHIA 8014
1:25,000 PARSONS 3638; BLOCK 3838

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