

**PASMINCO MINING ROSEBERY**

**QUEENSBERRY (HENTY RIVER) EL 11/2001**

**ANNUAL REPORT**  
**FOR THE PERIOD ENDING 3<sup>rd</sup> JULY 2002**

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## **1. SUMMARY**

This report details exploration work undertaken on EL 11/2001 Queensberry (Henty River) during the period 3<sup>rd</sup> August 2001 to 3<sup>rd</sup> July 2002, the first 11 months of the tenement. Work on the licence has focussed on compiling previous exploration data preparatory to detailed exploration for Rosebery or Hellyer type VHMS deposits and (or) Devonian veins style mineralisation, planned for the upcoming year.

Reconnaissance field visits were made to locate old workings and to collect rock chip samples for Pb-Isotope analysis. Results of this sampling indicate that the Pb in the known mineralisation at Queensberry Mine has the target Cambrian (Rosebery) signature. Further follow-up is therefore warranted.

## **2. INTRODUCTION**

This report details exploration work undertaken on Queensberry (Henty River) EL 11/2001 during the period 3 August 2001 to 3 July 2002, the first 11 months of this tenement.

Pasminco's main target on EL 11/2001 is Cambrian Rosebery or Hellyer type, Zn-Pb-Cu-Au-rich VHMS mineralisation hosted by the Mount Read Volcanics (MRV). A secondary target is Pb-Zn Devonian vein style mineralisation of the type found at the Queensberry Mine. The tenement covers a fault-bounded outlier of Cambrian volcanoclastics and sediments that have been correlated with the Tyndall Group (see Section 4 below).

Pasminco plan to systematically explore the EL using a combination of geological mapping and partial leach soil geochemistry, followed-up by ground time-domain EM over areas of interest.

The only access to the tenement is via the Henty Road (B27), linking Zeehan and Strahan, then east and south via the ~9 km long Queensberry Track, which finishes at the Queensberry Mine in the centre of the tenement. Otherwise, the tenement is heavily forested, rugged and difficult to access with no useable exploration grids.

### **2.1 Attribution**

The following personnel were responsible for the work carried out by Pasminco Exploration/Pasminco Rosebery Mine on the EL 11/2001 Queensberry licence area during the reporting period:

Senior Geologist:                      Andrew McNeill – Pasminco Exploration Rosebery

### 3. LAND TENURE

EL 11/2001 Queensberry (10 sq km) was granted to Pasminco on 3 August 2001 for a period of 5 years. The location of the tenement is shown on Figure 1. EL 11/2001 covers ground that fell vacant on the relinquishment of EL 34/88 (Rio Tinto Exploration) in December 1998.

EL 7/2001 falls entirely within the Mt Dundas Regional Reserve all of which is available for exploration under the Mineral Resources Development Act 1995.

### 4. GEOLOGY

The regional geology of the tenement area is described by the Strahan 1:50,000 Geological Survey sheet and explanatory notes (Baillie et al., 1977 and 1985). Recent regional correlations are shown on Brown et al. (1995) and are discussed in Selley and Meffre (1997).

The geology of EL 11/2001 Queensberry is dominated a major regional fault system, the Firewood Siding Fault (FSF). The FSF extends some 35 km from Queenstown to near Trial Harbour on the west coast, has a general E-W to NNW trend and is offset by several NW to NNE faults, including the South Henty Fault. Stratigraphic and structural relationships indicate the FSF has had a prolonged history, with evidence of movements:

- Later than Jurassic, juxtaposing Permian sediments and Jurassic dolerite against Ordovician to Devonian sediments to the west of EL 11/2001 (Blissett and Guilline, 1962).
- In the Devonian, as indicated by the development of F<sub>3</sub> structures adjacent to the FSF. Devonian movement on the FSF appears to be sinistral (Baillie and Williams, 1975; Selley and Meffre, 1997)
- In the Late Cambrian based thickness variations in Denison Group correlates to the north of the fault (Baillie, et al., 1985) and the effect of the fault on interpreted Cambrian folds (Selley and Meffre, 1997). Selley and Meffre (ibid) conclude that there is no structural or stratigraphic evidence that the FSF was active in the Middle Cambrian i.e., time of VHMS formation. However, the localisation, near Pearl Creek to the east of EL 11/2001, of “Middle Cambrian mafic volcanic units along the present trace of the FSF may provide evidence of an ancient syn-magmatic fracture system” (Selley and Meffre, 1997).

The geology of EL 11/2001 can be subdivided into 3 lithological domains:

1. Correlates of the Devonian Bell, interbedded quartz sandstone and mudstones south of the Firewood Siding Fault.
2. A ~2.7 sq km fault bounded block of Mount Read Volcanic (Tyndall Group) correlates in the Firewood Siding Fault system.
3. A marine sedimentary sequence north of the Firewood Siding Fault, with fossils of Upper Cambrian age, that is correlated with the Denison Group.

Of these three, domain 2 is considered VHMS prospective. Lithologies from domain 2 have been described in some detail by Baillie et al (1985) and include siltstone, slate, lithicwacke (with a minor volcanogenic component) and volcanoclastics. The volcanoclastics are feldspar-quartz-phyric crystal-rich sandstones, shard-rich ash siltstones and lesser coarse sandstones, with a volcanolithic component. Poor outcrop and complex structure have prevented the location or tracing of any marker horizons (Baillie et al., 1985).

Known economic mineralisation on the tenement area is restricted to the Queensberry Mine, discovered in 1891 and worked prior to 1924, producing approximately 767t of Pb-Ag ore. More recently drilling (8 shallow holes) and surface sampling (Lennox, 1970) allowed the calculation of an 'inferred resource' of 28,300t @ 0.32% Cu, 11.53% Pb, 8.76% Zn and 52 g/t Ag (Green in Baillie et al., 1985). Only two Au assays of the ore are available and are in the range 0.2-0.3 g/t Au (Mathison, 1988). The geology of the Queensberry mine has been described in detail by Reid (1927), Forsythe (1968a), Lennox (1970) and Green (in Baillie et al., 1985). The deposit comprises 4 lodes (a fifth was known during initial mining but, has not been relocated in recent times) most of which have a northerly strike and west dip. Mineralogically the lodes comprise pyrite, arsenopyrite, sphalerite, chalcopyrite, galena, tetrahedrite and bournonite in a quartz-siderite gangue. Green (in Baillie et al., 1985) considered the mineralogy, coarse grain size, textures and paragenetic sequence of minerals was very similar to that of the Zeehan mineral field and concluded that the Queensberry Mine was a Devonian fissure fill deposit.

## 5. PREVIOUS EXPLORATION

The area of EL 11/2001 Queensberry has a long and complex tenement history, with the area of the Queensberry Mine held under a series of ML's from 1896 until 1994 (ML 27M/83) with the mining leases enclosed by a series of Special Prospectors Licences (SPL25 and 62) and Exploration Licences (ELs 4/78, 10/85 and 34/88). Modern exploration commenced in the 1960's and is summarised in Table 1.

**Table 1 Previous exploration on the area of EL 11/2001 Queensberry**

<b>Reporting Period/Tenement</b>	<b>Work Completed</b>
1968 ML 11/12M66 SPL 25 (Forsythe, 1968a,b)	Queensberry Mine: 7 km of line cutting, mapping, rock-chip, soil and stream sediment sampling was completed. An intense Pb-Zn anomaly west of lodes creek was the main target worthy of follow-up. Regional: establishment of access tracks, reconnaissance mapping, rock-chip and stream sediment sampling. Further work recommended.
1970 ML 11/12M66 SPL 62 (Lennox, 1970)	Detailed investigations of the Queensberry Mine area: Approximately 3300m of trenching and side-cutting over areas of interest, detailed mapping and soil geochemistry and 8 DDH (640.1m total). Initial metallurgical test work was also completed.
1981-1982 ML 11/12M66 (Bendall, 1982)	Mapping and relocating old workings and drill holes; estimation of a resource.
1983-1984 EL 4/78 (Jones, 1984)	Regional stream sediment sampling located a significant anomaly on Malcolm Creek. Airborne magnetic anomalies were followed-up.
1985-1986 EL 10/85 (Bendall, 1986)	Regional scale mapping and track cutting for access; no further outcrops of Cambrian volcanoclastics located.
1987 EL 10/85 (Leaman, 1987)	Reviewed available regional geophysical datasets (magnetics and gravity) and concluded that the mineralisation has a subtle geophysical signature much larger than the known mineralisation. Concluded that prospective corridor within 1500m of FSF. Indicated magnetic anomalies A and B (Amoco's anomalies I and F/G) warranted some ground checking.
1987-1988 EL 4/78 (Mathison, 1988)	Review previous data and field visit to collect samples for Au analysis – best result 0.058 g/t from a dump sample near the main shaft. No further work recommended.
1989-1990 EL 34/88 (Anon, 1990))	An orientation gradient array IP survey was completed over a 300x200m area at Queensberry; results not reported in any detail.
1990-1998 EL 34/88	No Field work. Kratochvil (1991) recommended stream sediment and other geochemical sampling at Queensberry to locate "leakage" on major faults, but, this was not done as exploration rapidly focussed on the Gordon Limestone.

## 6. WORK COMPLETED 2001-2002 REPORTING PERIOD

### 6.1 Data Compilation

Paper copies of previous exploration data have been obtained, however, digital compilation of previous exploration data has been delayed by problems with surveying (see section 6.2).

### 6.2 Field work

Several field visits have been made to the Queensberry Mine area with the following work completed:

- An excavator was used to improve drainage and repair the 4WD access track, at approximately 365000mE, 5349750mN, to allow safe vehicular access to the prospect area.
- Seven rock chip samples were collected from the rock-dump near the old mill site and analysed at Analabs for Pb, As, Ag, Cd, Sb, Sn and Bi by M104, Cu, Zn, Ni, Co, Fe, Mn, Ca, Na and K by I104, Ba by X401 and Au by F651 as SDS 3892. Assay results and locations are given in Appendix 1. Results were as expected with a best assay of 7.55% Pb, 21.4% Zn, 31 g/t Ag and 0.12 g/t Au.
- Galena separates from two of the rock-chip samples (274578 and 274582) were submitted to SIROTOPE for Pb isotope analysis. Results and interpretation are included as Appendix 2. Both samples have isotopic signatures consistent with Cambrian VHMS style mineralisation and plot close to the Rosebery field.
- An attempt was made to re-locate the workings, approximately 500m NNW of the main workings, described by Forsythe (1968a) and shown on the Minops "Geological plan of the Queensberry Mine" (Lennox, 1970). The area appears to have been extensively costeamed and any sign of the old workings obliterated.
- Previous work (soil sampling and drilling) in the immediate Queensberry Mine area had not been surveyed with reference to AMG coordinates and it was therefore decided to locate significant features to allow conversion of local coordinates to AMG. The following features have been located using DGPS (coordinates are AGD66):

No. 1 lode main shaft: 366411mE, 5344939.7mN

No. 4 lode adit entrance: 366300mE, 5344874mN

The collar of DDH No. 6 has been relocated, however, ongoing problems with the DGPS have prevented its accurate location. An un-successful attempt was also made to re-locate the East Lode once again the area appeared to have been heavily bulldozed and the old workings could not be found.

## **7. CONCLUSIONS & RECOMMENDATIONS**

Only minimal fieldwork was completed by Pasminco on EL 11/2001, Queensberry (Henty River), in the period August 2001 to 3<sup>rd</sup> July 2002. The lack of fieldwork was a direct result of a severely reduced resources and exploration budget, culminating in the disbanding of the Exploration Division and the transfer of responsibility for district exploration to Rosebery Mine.

The Cambrian Pb isotope signature from the Queensberry Mine raises the possibility that the known lodes are remobilised from a buried and blind VHMS deposit, that may be within explorable depths. It is therefore recommended that:

- Compilation of previous data, including DGPS surveying of old drill holes, be completed.
- Based on results from the data compilation, cutting of a new grid for geological mapping and partial leach soil sampling be commenced. This work will be designed to target both deeply buried VHMS mineralisation and shallower vein style mineralisation.

## **8. ENVIRONMENT AND REHABILITATION**

As indicated in section 6 a short (20m) washed out section of the 4WD access track was repaired using an excavator and new drainage channels dug in an attempt to prevent it washing out in future.

## 9. EXPENDITURE

Expenditure on EL 11/2001 during the 11 month period ending 3<sup>rd</sup> July 2002 was **\$6,531**. A detailed breakdown of this expenditure is presented below.

Personnel	\$2,593
Travel & Accommodation	\$0
Consultants & Contractors	\$800
Geological Consultants	\$0
Geochemical Consultants & Assays	\$581
Geophysical Surveys & Contractors	\$0
Drilling	\$0
Stores & Supplies	\$0
Vehicles Plant & Equipment	\$667
Land	\$452
Computing	\$0
Office	\$845
Administration Fee	\$593
<b>Total Tenement Expenditure</b>	<b>\$6,531</b>

## 10. KEYWORDS & LOCALITY

### Keywords

Queensberry Mine, Tyndall Group, Pb-isotopes, Firewood Siding Fault, rock chip sampling.

### Locality

1:250,000	QUEENSTOWN SK55-5
1:100,000	CAPE SORELL 7913
1:25,000	PROFESSOR 3634

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