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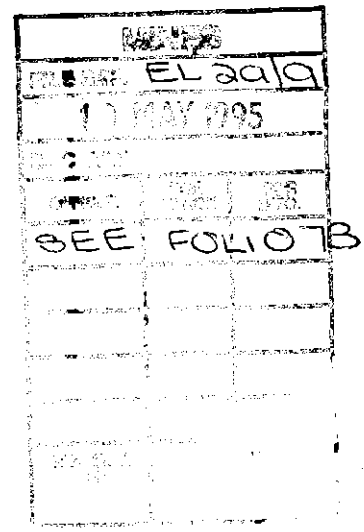
SIPA EXPLORATION NL

PIEMAN, TASMANIA
(EL29/91)

ANNUAL REPORT



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Author: Dr Peter Morant

Date: October 1994

Tenement: EL29/91

Holder: A J Hosking (100%)

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SUMMARY

Geological field reconnaissance and a review of available published and unpublished (company) reports indicate that there is very limited potential for either VHMS base metal or gold mineralisation in EL29/91.

Previously explored geochemical and geophysical anomalies are closely related to major structures, the Rosebery and Bobadil Faults (Dwg 1506). The geological domains separated by these faults differ markedly in their stratigraphy and potential for VHMS mineralisation:

- Volcaniclastic rocks derived from juvenile volcanic rocks are confined to east of the Rosebery Fault in the extreme northeast corner of the tenement. However, the Rosebery Fault dips moderately east, thus further limiting VHMS potential in EL29/91.

- Sedimentary rocks between the Bobadil and Rosebery Faults have mixed sedimentary, igneous and metamorphic provenance and are essentially unaltered. There appear to be no volcanic or juvenile volcaniclastic rocks between these faults which could host VHMS mineralisation.

- Sedimentary rocks west of the Bobadil Fault include the Eocambrian Crimson Creek Formation and Precambrian Oonah Formation (both older than the Mt Read Volcanics), neither of which are prospective for VHMS deposits.

Geochemical anomalies appear to be associated with minor structurally-controlled Pb±Zn±Ba±Ag mineralisation, and anomalous background base metals in the Oonah Formation. Lead isotope signatures at the Bastyan Dam Grid prospect are inconsistent with the lead having been remobilised from a Cambrian massive sulphide deposit.

Gravity and magnetic anomalies at the Bastyan Dam Grid prospect, which were tested by a 221 m diamond drill-hole, were attributed to sedimentary and structural sources. A deep, south-plunging conductor which was tested by two deep diamond drill-holes (454.1 m and 643.2 m) was interpreted to relate to graphitic sedimentary rocks in a fault-bounded slice of the Oonah Formation. Discordant geophysical anomalies may have resulted from a combination of structural and stratigraphic sources.

There appear to have been few analyses for gold during the previous exploration programmes. Gold is associated with both major styles of base metal mineralisation in the Rosebery area, that is with Cambrian VHMS and Devonian granite-related vein deposits. Vein-hosted mineralisation is associated with long-lived, north to northeast-trending regional structures. High grade gold mineralisation at the Henty prospect, 15 km to the south-southeast of EL29/91, occurs adjacent to one of these structures, the Henty Fault. Gold mineralisation is hosted by volcaniclastic rocks and closely associated with massive sulphide and a large sericite-pyrite alteration zone, possibly a Cambrian VHMS deposit – none of these features have been recognised in the Pieman tenement. Devonian vein-hosted precious and base metal deposits were mined elsewhere in western Tasmania until the 1970's, but none of these deposits would support mining today and do not represent a viable exploration target.

INTRODUCTION

The Pieman tenement, Exploration Licence 29/91, was granted to AJ Hosking for up to five years from 29 May 1992. The tenement, located to the near north-northwest of Rosebery in northwest Tasmania, covers about 23.5 km^2 of late Precambrian to Cambrian rocks.

Sipa Exploration NL entered an agreement with AJ Hosking early in 1994 whereby Sipa may earn up to a 100% interest in EL29/91. Exploration by Sipa up to 28 April 1994 is documented in the 1993 Annual Report on EL29/91 (Sipa Exploration NL, 1994).

This report documents two weeks of field reconnaissance on EL29/91 and literature research at Tasmania Development and Resources by Dr Peter Morant for Sipa in May 1994. Geological traverses were completed mainly along tracks and major creeks (Dwg 1507). Reference samples (43) of sedimentary and volcaniclastic rocks were collected from within and adjacent to EL29/91 (locations on Dwg 1507) but have not been submitted for analysis or thin sections. Representative samples of mineralisation from the nearby Pinnacles, Chester and Silver Falls prospects were also collected.

The area of EL29/91 was previously explored for base metals by CRA (1950's), Comstaff (1960's to mid-1970's), Asarco (mid-1970's), Aberfoyle and Shell (mid-1970's to 1988). The exploration programmes by Aberfoyle and Shell are summarised by McNeill (1988) and Hosking (1993).

GEOLOGY

The following discussion is based mainly on the field reconnaissance in May 1994 (Dwgs 1506 and 1507) and the 1:25,000 mapping of the Geological Survey of Tasmania (Corbett and McNeill, 1986).

The Pieman tenement is covered by residual soils (~70%) and glacial deposits (~30%). Outcrop is mainly limited to creek beds (generally fresh) and ridges/spurs (generally very strongly weathered). Some of the best exposure is provided in road cuttings, although these too are rapidly weathered and concealed by vegetation.

The hard-rock geology of the tenement can be subdivided into three structural-stratigraphic domains, separated by the north-striking Rosebery and Bobadil faults (Dwg 1506). These domains differ markedly in their stratigraphy and potential for VHMS mineralisation. The metamorphic grade is very low to low; Phanerozoic rocks are typically massive to weakly foliated and folded about upright structures, whereas Precambrian (?) rocks are typically more complexly deformed.

The eastern domain, east of the Rosebery Fault, only crops out in the extreme northeast corner of the tenement (Dwg 1506). Coarse volcaniclastic breccia (including quartz, feldspar and porphyry clasts) is interbedded with carbonaceous mudstones (assigned to the Dundas Group), which appear to conformably overlie the Central Volcanic Complex in the Pinnacles - Burns Peak area, farther to the east. This domain includes the Pinnacles and Chester VHMS prospects, 2 km east of the Pieman tenement, but the very small area (~0.5 km^2) of these rocks in EL29/91 and moderate easterly dip on the Rosebery Fault, severely limit its exploration potential.

The central domain comprises lithic sandstones, mudstones and polymict conglomerates, which generally dip and young to the east to northeast (Dwg 1506). Chert, sedimentary and volcanic clasts abound in the conglomerates, whereas the sandstones include detrital mica and chromite. This domain has previously been interpreted to include components of the Cambrian Dundas, Huskisson and Rosebery Groups (Brown, 1986). In EL29/91 it does not appear to contain volcanic rocks, or volcaniclastic rocks derived from a juvenile volcanic terrain, and is therefore of low prospectivity for VHMS mineralisation.

The western domain includes multiply-deformed meta-sedimentary rocks of the Precambrian (?) Oonah Formation, which appear to be structurally interleaved with essentially undeformed, west-younging, mafic-derived, turbiditic sedimentary rocks of the Eocambrian Crimson Creek Formation (Dwg 1506). These sequences are older than the Mt Read Volcanics and regionally are not known to contain VHMS or significant gold mineralisation.

MINERALISATION

No new occurrences of mineralisation in the Pieman tenement were discovered during the geological reconnaissance in May 1994.

Three Pb-Ba±Ag prospects were reported by Reid (1918) from within and immediately north of the Pieman tenement (Dwg 1506). The Lynch Creek prospect was reported as comprising Pb-Ba mineralisation in the bed of Lynch Creek, but was not located either during this reconnaissance or by previous exploration programmes. It may be similar to the structurally-controlled Just-in-Time barite occurrence 2 km north of the tenement. Minor Pb-Ag-Ba mineralisation at the intensively explored Silver Falls prospect, 1.5 km north of the tenement, is hosted by volcaniclastic felsic breccia adjacent to the Rosebery Fault. This mineralisation extends south across the extreme northeast corner of the Pieman tenement.

The Salmon's Lode prospect, reported by Reid (1918) as occurring about 1.5 km south of EL29/91, is in a mining tenement currently held by Pasminco. Two north-striking parallel lodes of Zn-Pb-Cu mineralisation are hosted by calcitic schist (Reid, 1918), within the central structural domain between the Bobadil and Rosebery Faults. Salmon's Lode was not visited during the field reconnaissance and it is not clear whether mineralisation is syngenetic, or if the host rocks can be correlated north into EL29/91. Brown (1986) interpreted that the now-named Bobadil Fault bifurcates near the southern margin of EL29/91, with the eastern branch extending beneath the valley of the Marionoak River to the Rosebery Fault in the Burns Peak area (Dwg 1506). This interpretation would severely limit the potential for mineralisation in the Pieman tenement along strike of Salmon's Lode.

Minor sphalerite-bearing veins were discovered in the south of EL29/91 (the Bastyan Dam Grid prospect) during construction of the access road to the Lower Pieman Dam. The veins and minor pyritic alteration are hosted by interbedded sandstones and mudstones, less than 100 m east of the interpreted position of the Bobadil Fault. Minor disseminated and vein-hosted sphalerite, galena, chalcopyrite and pyrite were intersected in the three diamond drill-holes at this prospect (Dwg 1506). Lead isotope ratios for galena samples from drill-hole MO-1 were interpreted by the CSIRO to be inconsistent with the lead having been remobilised from a Cambrian massive sulphide deposit (Carr & Gulson, 1985). Two populations of lead isotope ratios were recognised, which relate to upper Precambrian (basement) and Devonian (metamorphic) lead. Geophysical aspects of the Bastyan Dam Grid prospect are discussed below.

The area of EL29/91 was stream sediment sampled at ~250 m intervals by Aberfoyle and Shell Metals between 1975 and 1985. Anomalies of more than thrice threshold values (first-order) were followed up with further stream sediment sampling, geological traversing, soil sampling and costeaning. The first-order Zn-Pb-Cu Lynch Creek anomalies were interpreted by Aberfoyle to relate to minor quartz veins, sphalerite and gossan in silicified black mudstones (Oonah Formation), which were also anomalous in base metals (Freytag, 1978). Lower-order base metal anomalies defined by Aberfoyle (Higgins Creek, South Central) and Shell (Areas A, C[I], C[II] and D) were followed up by soil and rock chip sampling (Smyth, 1982). Base metal anomalies appear to be related to major faults and fault-bound wedges of the Oonah Formation.

Regional geophysical surveys have included helicopter-borne electromagnetics and magnetics; several low-order DIGHEM anomalies were identified. At the Bastyan Dam Grid prospect, gravity and magnetic anomalies were tested by diamond drill-hole SBD-1 (221 m). The drill-hole intersected minor sphalerite-galena veining, corresponding to the outcropping mineralisation. The geophysical anomalies were attributed to sedimentary and structural sources. A deep, south-plunging conductor defined by UTEM and CSAMT was tested by diamond drill-holes MO-1 (454.1 m) and MO-2 (643.2 m). It was concluded that the conductor was related to graphitic sedimentary rocks in a fault-bounded slice of the Oonah Formation. Geological mapping by Shell also showed a structural inlier of the Oonah Formation adjacent to the Bobadil Fault in the area of stream sediment anomaly C[II] (Purvis, 1986). Discordant geophysical anomalies at the Bastyan Dam Grid prospect may have resulted from a combination of structural and stratigraphic sources.

There appear to have been few analyses for gold during the previous exploration programmes. Gold is associated with both major styles of base metal mineralisation in the Rosebery area, that is with the Cambrian VHMS and Devonian vein (granite-related) deposits. Vein-hosted mineralisation is associated with long-lived, north to northeast-trending regional structures. High grade gold mineralisation at the Henty prospect, 15 km to the south-southeast of EL29/91, occurs adjacent to one of these structures, the Henty Fault. Gold mineralisation is hosted by volcaniclastic rocks (of the Tyndall Group) and closely associated with massive sulphide and a large sericite-pyrite alteration zone, possibly a VHMS deposit (McNeill and Corbett, 1992) – none of these features have been recognised in the Pieman tenement. Devonian vein-hosted precious and base metal deposits were mined elsewhere in western Tasmania until the 1970's, but none of these deposits would support mining today and do not represent a viable exploration target.

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APPENDIX A

Sample Descriptions

The following samples were collected during geological reconnaissance of the Pieman tenement in May 1994, but were not submitted for analysis or thin sections. Samples from EL29/91 unless stated.

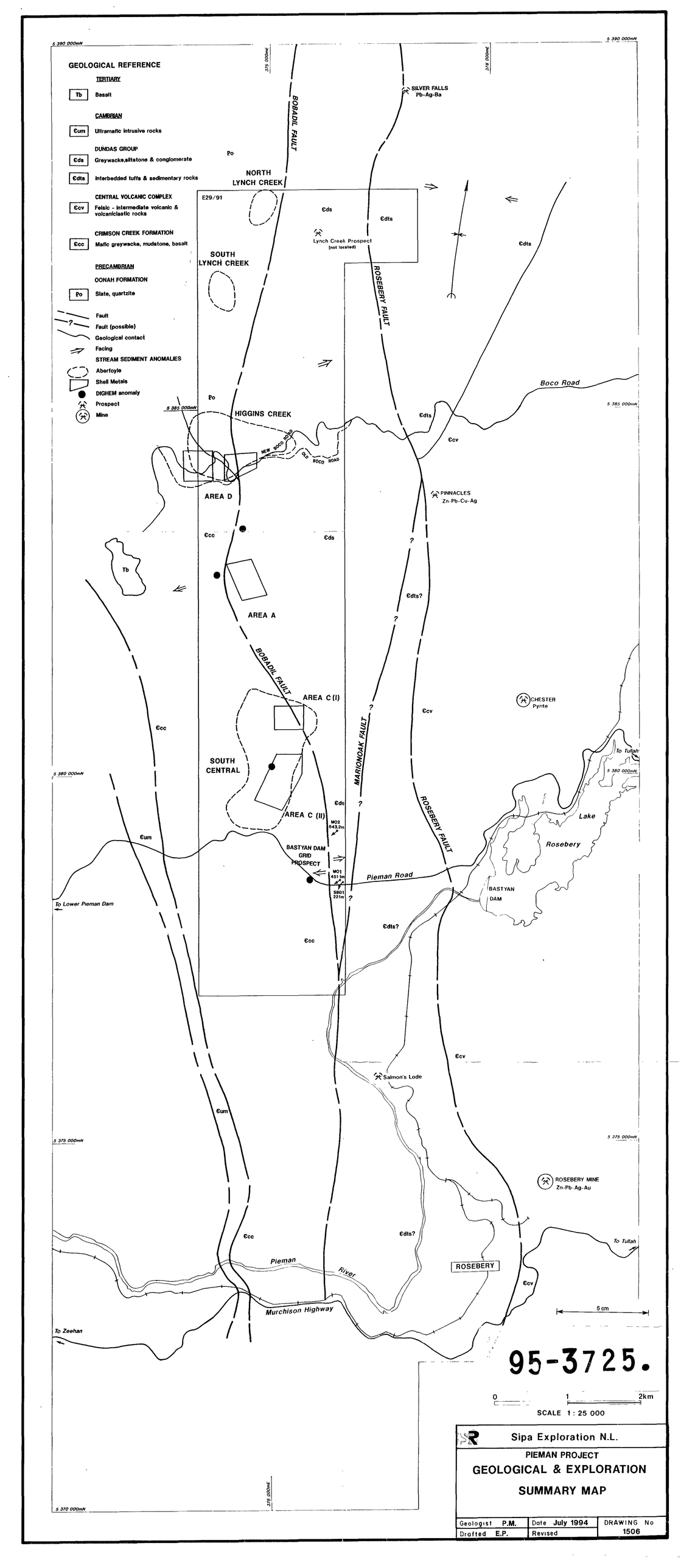
Samples of epiclastic & volcaniclastic sedimentary rocks collected for lithogeochemistry/thin sections

61701	Felsic volcaniclastic breccia (Marionoak River crossing, new Boco Road)
61702	Felsic volcaniclastic breccia (Marionoak River crossing, old Boco Road)
61703	Weakly oxidised, pale grey, weakly foliated, plane laminated siltstone
61704	Fresh, grey, plane laminated siltstone
61705	Weakly oxidised wacke from 0.3 m bed
61706	Weakly oxidised, massively bedded sandstone-wacke
61707	Pale grey friable siltstone
61708	Fresh, friable, grey-green plane laminated fine grained sandstone
61709	Fresh, polymict clast-supported pebble conglomerate
61710	Oxidised, friable, polymict clast-supported pebble conglomerate
61711	Oxidised, buff, interbedded sandstone and pebble conglomerate
61712	Weakly foliated, plane laminated very fine sandstone
61713	Plane laminated, thinly interbedded, micaceous, chloritic fine sandstone and siltstone
61714	Plane laminated, thinly interbedded, micaceous, chloritic fine sandstone and siltstone
61715	Fresh, grey micaceous sandstone
61716	Fresh, weakly foliated, interbedded siltstone and fine sandstone
61717	Strongly oxidised lithic wacke
61718	Pale green micaceous, chloritic sandstone
61719	Chloritic, micaceous, pebbly sandstone and polymictic conglomerate
61720	Grey-green, weakly foliated siltstone
61721	Felsic volcaniclastic breccia, minor disseminated galena (Silver Falls prospect)
61722	Tightly folded, foliated, interbedded shale/sandstone, Oonah Fm?
61723	Strongly oxidised, brown, weakly laminated siltstone, Crimson Ck Fm
61724	Strongly oxidised, brown, lithic sandstone, Crimson Ck Fm
61725	Strongly oxidised, brown, mudstone, Crimson Ck Fm
61726	Fresh, weakly foliated, micaceous interbedded siltstone and sandstone
61727	Grey, weakly foliated, plane laminated siltstone
61728	Massively bedded, clast supported polymict conglomerate
61729	Strongly oxidised, brown, micaceous lithic wacke (interbedded with siltstone)
61730	Strongly oxidised, brown, friable lithic wacke (interbedded with siltstone)
61731	Strongly oxidised, brown, massive sandstone, Crimson Ck Fm
61732	Strongly oxidised, khaki siltstone, Crimson Ck Fm
61733	Oxidised, fine sandstone with mudstone intraclasts, Crimson Ck Fm
61734	Strongly oxidised mafic wacke, Crimson Ck Fm
61735	Strongly oxidised mafic wacke, Crimson Ck Fm
61736	Weakly oxidised mafic wacke, Crimson Ck Fm

61737	Grey, volcaniclastic (?) wacke, trace py stringers, qtz-carb veins (adj to Bobadil Fault)
61738	Silicified mudstone, trace pyritew, minor stockwork veins (adj to Bobadil Fault)
61739	Fine wacke interbedded with siltstone (adj to Bobadil Fault)
61740	Micaceous quartz arenite (on HEC powerline east of EL29/91)

Mineralised Samples from Prospects near EL29/91

61627	Layered ore from dump at old Chester pyrite mine; massive pyrite and cherty layers.
61628	Laminated massive sulphide ore (sphalerite, pyrite, galena, chalcopyrite), southern trench, Pinnacles prospect
61629	Felsic volcaniclastic breccia with disseminated galena, Silver Falls prospect


GEOLOGICAL REFERENCE
TERTIARY
Tb Basalt
CAMBRIAN
Cum Ultramafic intrusive rocks
DUNDAS GROUP
Cds Greywacke,siltstone & conglomerate
Cdts Interbedded tuffs & sedimentary rocks
CENTRAL VOLCANIC COMPLEX
Ccv Felsic - intermediate volcanic & volcaniclastic rocks
CRIMSON CREEK FORMATION
Ccc Mafic greywacke, mudstone, basalt
PRECAMBRIAN
OONAH FORMATION
Po Slate, quartzite
Fault
Fault (possible)
Geological contact
Facing
STREAM SEDIMENT ANOMALIES
Aberfoyle
Shell Metals
DIGHEM anomaly
Prospect
Mine
5 390 000mN
375 000mE
378 000mE
BOBADIL FAULT
SILVER FALLS
Pb-Ag-Ba
NORTH LYNCH CREEK
E29/91
Cds
Cdts
Lynch Creek Prospect
(not located)
SOUTH LYNCH CREEK
ROSEBERY FAULT
Boco Road
5 385 000mN
Po
HIGGINS CREEK
NEW BOCO ROAD
OLD BOCO ROAD
AREA D
PINNACLES
Zn-Pb-Cu-Ag
Ccc
Tb
AREA A
Cdts?
AREA C (I)
CHESTER
Pyrite
Ccv
To Tullah
5 380 000mN
SOUTH CENTRAL
MARIONOAK FAULT
AREA C (II)
MO2
643.2m
Cum
BASTYAN DAM GRID PROSPECT
MO1
451.1m
SBD1
221m
Pieman Road
Lake Rosebery
BASTYAN DAM
To Lower Pieman Dam
Salmon's Lode
5 375 000mN
ROSEBERY MINE
Zn-Pb-Ag-Au
ROSEBERY
Pieman River
Murchison Highway
To Zeehan
5 370 000mN
5 cm
95-3725.
0 1 2km
SCALE 1 : 25 000
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PIEMAN PROJECT
GEOLOGICAL & EXPLORATION
SUMMARY MAP
Geologist P.M.
Drafted E.P.
Date July 1994
Revised
DRAWING No
1506

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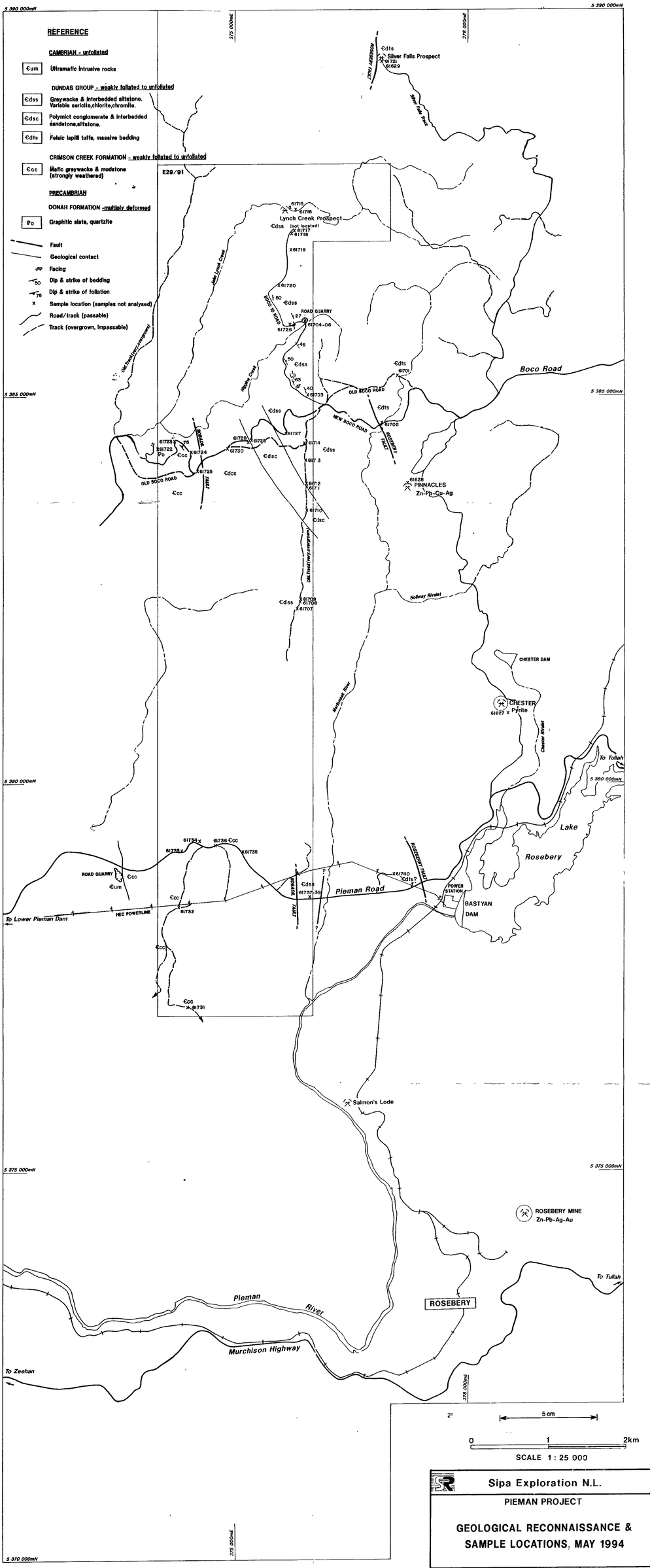

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PIEMAN PROJECT

GEOLOGICAL RECONNAISSANCE & SAMPLE LOCATIONS, MAY 1994

Geologist: P.M.	Date: July 1994	DRAWING No. 1507
Drafted: E.P.	Revised:	