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PASMINCO EXPLORATION

EL 2/90 BOCO
 EL 8/90 NORTH PINNACLES
 EXPLORATION REPORT
 FOR THE PERIOD
 6 MAY 1994 - 30 APRIL 1994
 3

MINES		
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EL 8/90 FOLIO 65		
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 DATE: May 1994
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1 SUMMARY

Exploration completed by Pasminco during the 1993/94 licence year has included access line cutting, soil geochemistry, compilation and interpretation of electrical geophysics and diamond drilling. This work was designed to test for VHMS mineralisation at North Pinnacles, Silver Falls and Bulgobac Falls.

At North Pinnacles a blind target, the Brown's Tunnel host sequence (EL44/88 Burns Peak) beneath the Pinnacles Rhyolite was tested by DDH NPD5. The hole did not penetrate the base of the Pinnacles Rhyolite, which is more than 740m thick. Alteration and hole rock geochemistry from core does not indicate that the target horizon is likely to be close to the end of the hole. Extensive silicification, minor disseminated sphalerite and galena, and localised galena-fluorite veining was intersected higher up the hole. The best assay interval was 677.00–679.20m, 2.2m @ 0.23% Pb, 0.95%Zn. The maximum gold assay in the silicified zone was 0.02g/t.

At Silver Falls the best soil Pb–Zn anomaly occurs west of the licence boundary within EL 1/93 and was tested by DDH HRD1 in that licence.

Access lines have been cut at Bulgobac Falls, these lines will facilitate mapping in this under explored area. Reconnaissance traverses have located black shale and limestone with traces of galena and sphalerite adjacent to felsic porphyry intrusives.

2 INTRODUCTION

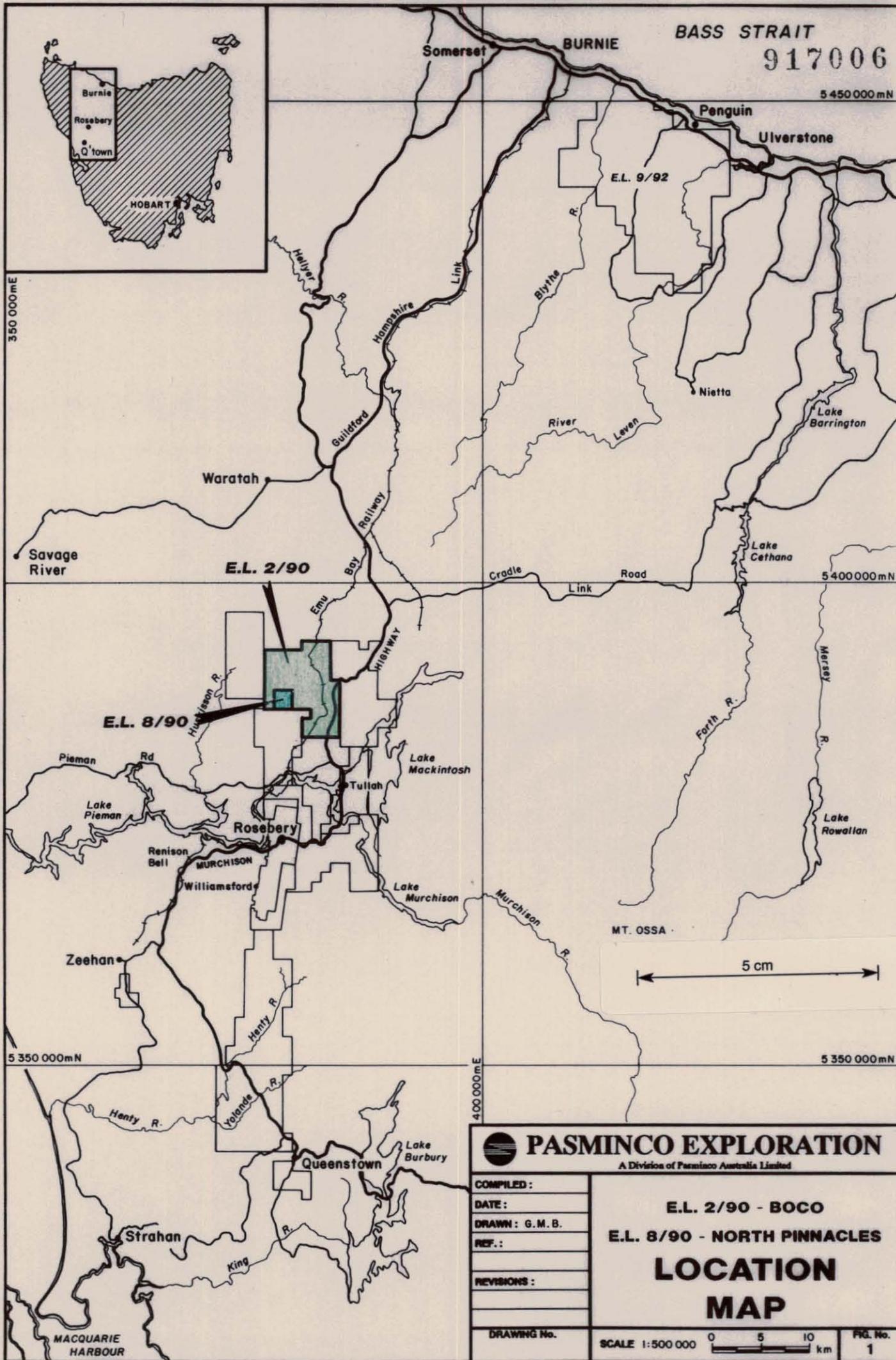
This report documents work undertaken on Exploration Licences 2/90 Boco and 8/90 North Pinnacles in Western Tasmania, covering the period 8 May 1993 to 30 April 1994.

The two licences reported here are held under the same terms and conditions and are subject to the one joint venture agreement (The Boco JV), between licensee, the Shell Company of Australia Limited, and manager/operator, Pasminco Exploration, a division of Pasminco Australia Limited. The licences form one geographically and geologically coherent block, thus an amalgamated report is clearly the most effective method of data presentation and technical discussion. The licence renewal dates have been synchronised (8 June 1993), however budgets and expenditure on the licences remains separate, in accord with an agreement approved by the Mines Department on 11 May 1992.

EL 2/90 (55km²) and EL 8/90 (4km²) jointly cover 59km² of the Cambrian Mt Read Volcanics and are centred 17km NNE of Rosebery and 16km SW of the Hellyer Mine on Tasmania's West Coast (figure 1). The principal targets of exploration on the licences are volcanic hosted auriferous base metal massive sulphide bodies similar to those at Rosebery and Hercules.

The EL's include old workings at Boco Creek (Samuel Smith's Lode), with the Silver Falls lead workings occurring immediately outside the licences' western boundary. Advanced exploration throughout the past 20 years, principally over the North Pinnacles, Silver Falls and Boco Siding prospects, (figure 4) has left a legacy of good access tracks and grid lines on the southern half of the licences, with access in the east and northeast along the Murchison Highway and Emu Bay Railway. The northwest corner of EL 2/90 can be accessed by APPM's Huskisson Drive and Olympic Road forestry roads.

During the period covered by this report exploration has been completed at North Pinnacles, Silver Falls and Bulgobac Falls. Work has included diamond drilling, access line cutting, soil and rock geochemistry, geological mapping and compilation and computerisation of geochemical and electrical geophysical data.



BASS STRAIT
917006

5 450 000mN

350 000mE

5 400 000mN

5 350 000mN

5 350 000mN

400 000mE



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COMPILED :
DATE :
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REF. :
REVISIONS :
DRAWING No.

E.L. 2/90 - BOCO
E.L. 8/90 - NORTH PINNACLES
LOCATION
MAP

SCALE 1:500 000 0 5 10 km FIG. No. 1

3 TENURE

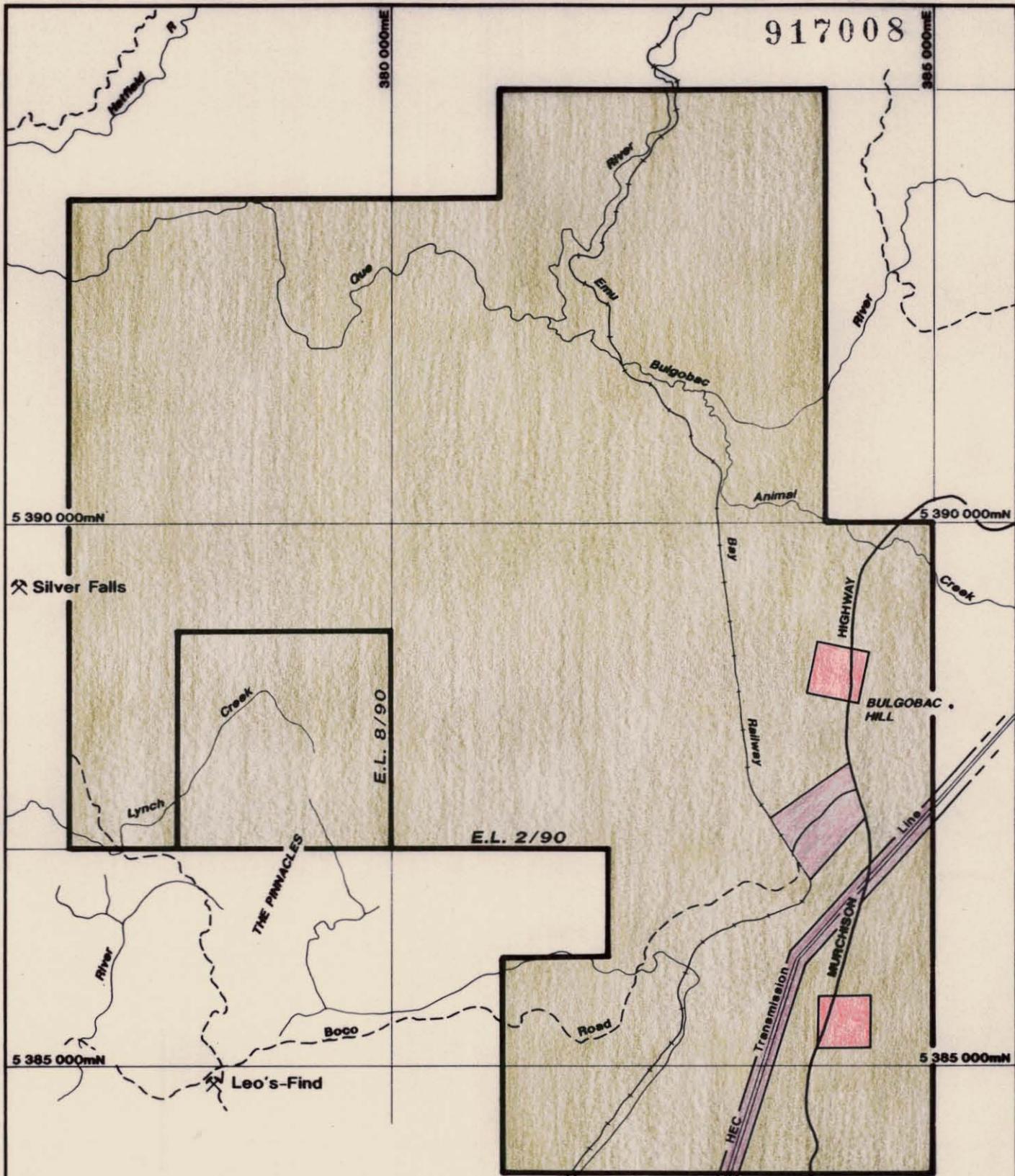
Exploration Licences 2/90 (Boco) and 8/90 (North Pinnacles) of 55km² and 4km² respectively were granted to the Shell Company of Australia Limited on 20 April 1990 and 8 June 1990 respectively, each for a period of 10 years, renewable every 12 months. This followed Shell's successful tenders through the Tasmanian Department of Mines tender system.

Billiton Australia, the metals division of the Shell Company of Australia, were sole managers and operators of both EL 2/90 and EL 8/90 from their dates of inception until 12 October 1990 when a heads of agreement to form a joint venture between the Shell Company of Australia Limited and Pasminco Australia Limited was signed. This Joint Venture agreement allows Pasminco to earn a 60% interest in the two licences by spending a combined total of \$500 000 over 4 years from the date of inception of the Joint Venture. Pasminco Exploration manage and operate all exploration on EL 2/90 and EL 8/90 on behalf of the Joint Venture.

Both EL 2/90 and EL 8/90 were renewed in 1993 and a further one year renewal of each licence is being sought.

This report covers exploration activities on the two licences ("the Boco Joint Venture") from 8 May 1993 until 30 April 1994.

EL 2/90 excludes lands vested in the HEC, and 0.5km² of Mine Leases. The remainder of EL 2/90 and all of EL 8/90 are Un-allocated Crown Land designated as Multiple Use Forest Land (figure 2).



LEGEND

-  HEC Vested Land included in E.L.
-  Mining Lease
-  Multiple Use Forest
-  Uncommitted Crown Land

NOTE - The Land Tenure is only shown within E.L. 2/90 and E.L. 8/90

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COMPILED : G.M.B.
DATE : May, 1993
DRAWN :
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REVISIONS :

E.L. 2/90 - BOCO JV
E.L. 8/90 - NTH. PINNACLES JV
LAND TENURE



DRAWING No. SCALE 1:50 000 500 0 500 m FIG. No. 2

4 REGIONAL GEOLOGY

ELs 2/90 and 8/90 are located in the Dundas Trough of western Tasmania. The prospective sequence forms part of the mid to late Cambrian Mt Read Volcanics.

Basement in western Tasmania is the Precambrian comprising dominantly green schist facies meta-sediments with minor basalts and dolerites. Higher grade amphibolite and eclogite facies also occur within the Precambrian (Turner, 1989). Basement is exposed west of the licences in the Huskisson River valley (Fig 3).

Cambrian volcanism and sedimentation developed on this continental crust, and can be subdivided into the eo-Cambrian tholeiitic Crimson Creek Formation (CCF) and the mid to late Cambrian Dundas Group and predominantly calc-alkaline Mt Read Volcanics.

The CCF was deposited in shallow but rapidly subsiding basins (Brown, 1986 and Haines, 1991). The formation includes basaltic lavas and volcanoclastics, haematite facies turbidites, carbonates, chert and minor evaporites. The formation is exposed west of the licences.

Ultramafic cumulates and volcanic equivalents were thrust onto the CCF in the mid Cambrian (Crawford and Berry 1991). These rocks are associated with strong magnetic anomalies and out crop to the west of the licences in the Huskisson Syncline (Fig 3). The ultramafics are interpreted at depth beneath EL 2/90 by Leaman (Appendix III) as the source of the large magnetic anomaly (Fig 6) between North Pinnacles and Silver Falls.

A package of sediments which post dates the ultramafics and possibly predates the MRV occurs in the NW sector of the licence. These carbonate rich siltstones, wackes and polymict conglomerates are correlated with the Westcott Argillite /Salisbury Conglomerate in the Rosebery area and are considered to form the basal units of the Dundas Group. Gradationally overlying this sequence are quartz muscovite sandstones and conglomerates largely derived from Precambrian metasediments, but with some material from felsic volcanics and ultramafics. The sequence is correlated with the Stitt Quartzite at Rosebery.

5 cm

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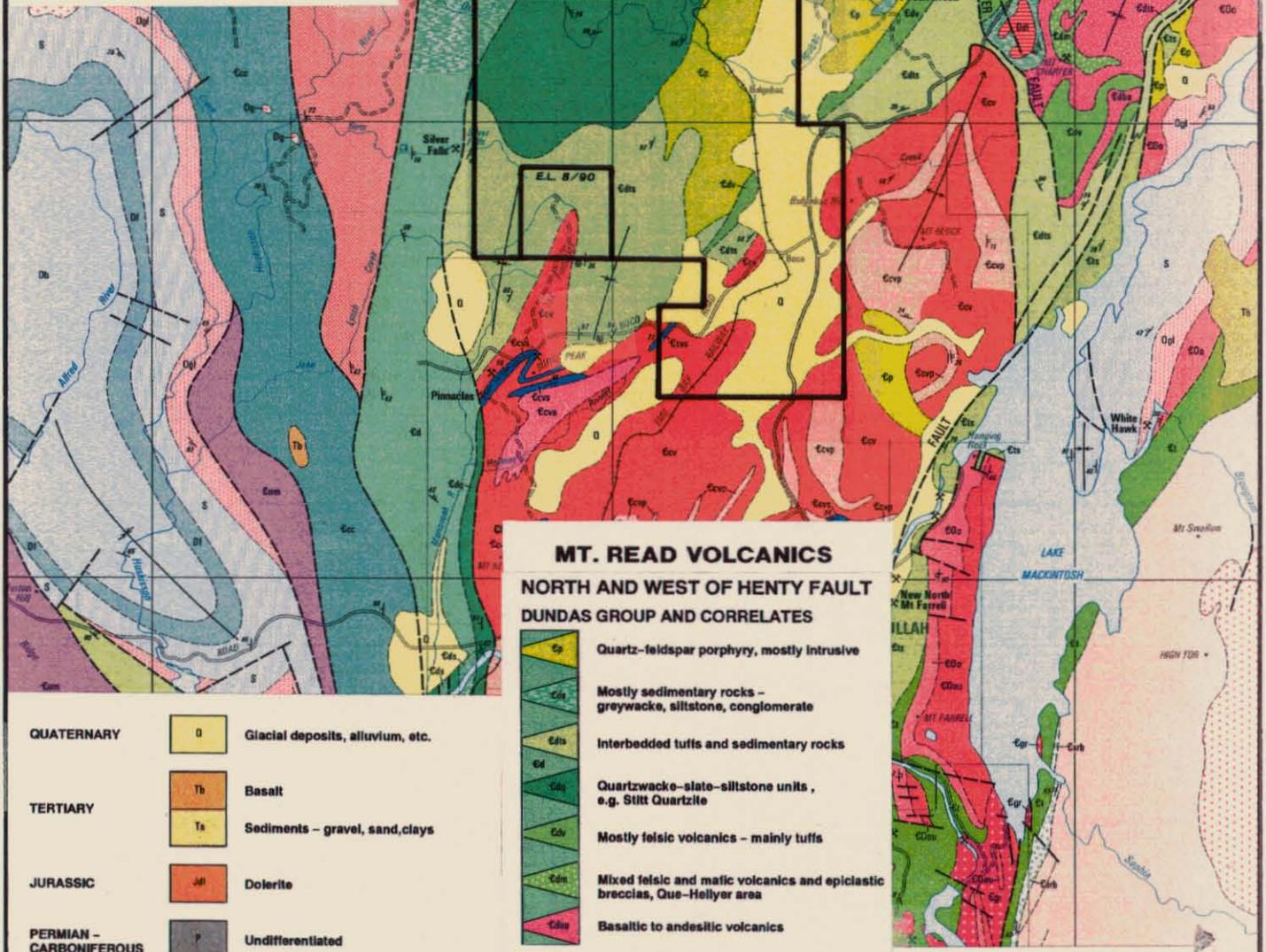
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DATE : May, 1993
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REFERENCE :
REVISIONS :
DRAWING No. **3**

BOCO JOINT VENTURE
E.L. 2/90 - BOCO
E.L. 8/90 - NORTH PINNACLES
REGIONAL GEOLOGY
FROM MAP 6 OF THE
MT. READ VOLCANICS PROJECT

SCALE 0 2 4 km

FIG. No. **3**

ACKNOWLEDGEMENT:
Mt. Read Volcanics Project Map adopted from Map 6 - Geological Compilation Map of the Mt. Read Volcanics and Associated Rocks, from Hellyer to South Darwin Peak.
K. D. Corbett B Sc (HON) PhD and
A. W. McNeill B Sc (HON) 1988.



MT. READ VOLCANICS
NORTH AND WEST OF HENTY FAULT
DUNDAS GROUP AND CORRELATES

- Quartz-feldspar porphyry, mostly intrusive
- Mostly sedimentary rocks - greywacke, siltstone, conglomerate
- Interbedded tuffs and sedimentary rocks
- Quartzwacke-slate-siltstone units, e.g. Stitt Quartzite
- Mostly felsic volcanics - mainly tuffs
- Mixed felsic and mafic volcanics and epiclastic breccias, Que-Hellyer area
- Basaltic to andesitic volcanics

CENTRAL VOLCANIC COMPLEX

- Mainly feldspar-phyric volcanics - dacite, rhyolite, minor andesite (Ccv)
- Felsic porphyry, mainly intrusive
- Mainly pyroclastic rocks
- Sedimentary rocks, mainly shale and sandstone
- Andesitic volcanics

CAMBRIAN INTRUSIVE ROCKS

- Granite
- Felsic porphyry
- Gabbro
- Ultramafic rocks & serpentinite

SOUTH AND EAST OF HENTY FAULT
TYNDALL GROUP AND CORRELATES

- Mainly sed. rocks, incl Farrell Slates
- Mainly quartz-feldspar-phyric volcanic and volcanoclastic rocks (Ct)
- Mainly volcanoclastic congl. and sandstone
- Sticht Range Beds - sandstone, siltstone, siliciclastic conglomerate

PRECAMBRIAN

- Quartzite-slate sequences - correlates of Oonah Formation
- Metamorphosed sequences of Tyennan Region. Major lithological boundary trends shown

- QUATERNARY**
- Q Glacial deposits, alluvium, etc.
- TERTIARY**
- Tb Basalt
 - Ts Sediments - gravel, sand, clays
- JURASSIC**
- Jd Dolerite
- PERMIAN - CARBONIFEROUS**
- P Undifferentiated
- DEVONIAN**
- Dd Dolerite
 - Dg Granite
- DEVONIAN - SILURIAN**
- Ds Bell Shale
 - Df Florence Sandstone
 - S Silurian
- ORDOVICIAN**
- Ogl GORDON GROUP limestone
- EARLY ORDOVICIAN - LATE CAMBRIAN**
- COu Upper sandstone sequence including Pioneer Beds (COu)
 - Undifferentiated conglomerate and sandstone (COo)
 - Newton Creek Sandstone (COon) - interbedded sandstone siltstone and conglomerate with marine fossils

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 overlapping and intruding the Precambrian basement. The volcanics include intermediate to felsic lavas, subvolcanic porphyries and granites, volcanoclastics and basement-derived sedimentary rocks. The MRV host five economically significant volcanic hosted massive sulfide deposits.

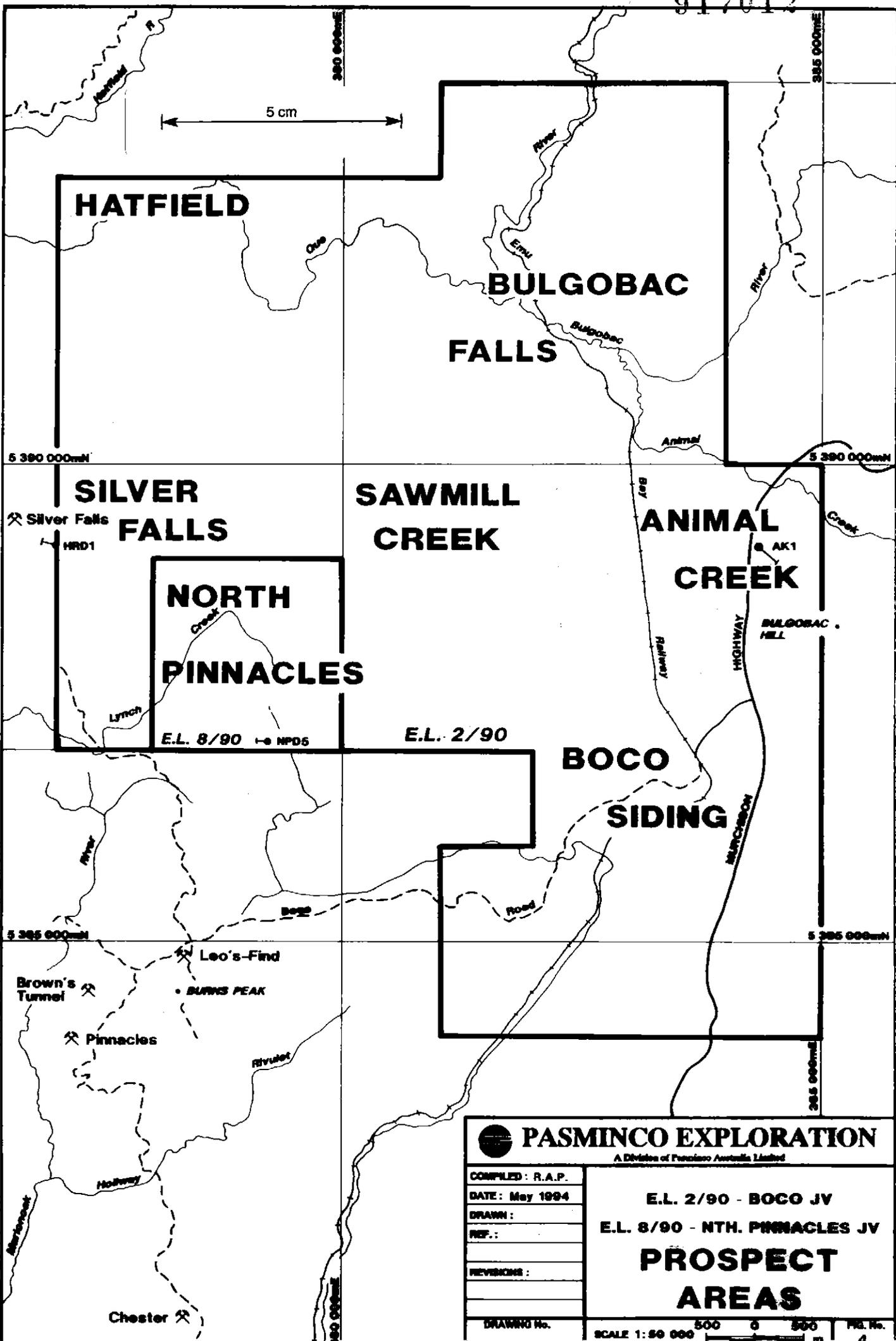
At Boco the MRV can be subdivided into three sequences on the basis of lithotypes and magnetic character. The two NW sequences (Burns Peak/Pinnacles and Tyndall/Southwell) are conformable, the SE (CVC) sequence is probably fault juxtaposed. Boundaries of these three units in part overlap the CVC and Dundas Group contacts on MRV Project Map 2 (Corbett and McNeill, 1986).

Regional structures associated with the MRV are the Rosebery Fault, splays of which probably extend into the Silver Falls area, and the Henty Fault which is located 2km east of the licences. Within the Boco JV gravity defines a prominent feature which is coincident with the western flank of the Pinnacles ridge. Leaman (Appendix III) interprets this feature as a basement rift which may be manifest at the surface as the Burns Peak Shear Zone and Pinnacles Shear Zone.

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 lithologies occur within the licences.

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 Boco JV are NNE to NE.

Deformation was followed by the extensive intrusion of Devonian to Carboniferous granitoids. The Meredith Granite, located 5km west of the licences and Granite Tor, 10km to SE (see Fig 3), are associated with the main regional gravity feature in the area. Leaman models these on section, Figure 16 (see Appendix III).



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COMPILED : R.A.P.	E.L. 2/90 - BOCO JV E.L. 8/90 - NTH. PINNACLES JV PROSPECT AREAS
DATE : May 1994	
DRAWN :	
REF. :	
REVISIONS :	
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Pg. No. 4

These granites are associated with carbonate replacement tin mineralisation at Renison Bell and Mount Bischoff, and the Pb Zn Ag vein deposits of Zeehan and possibly Tullah Fields.

After substantial erosion of this terrane extensive Tertiary flood basalts and subvolcanic sediments were deposited. Remnants of the Tertiary gravels are preserved immediately north of the Que River on line 13980N.

Pleistocene fluvioglacial clays and gravels derived primarily from Ordovician siliciclastic conglomerates blanket the MRV to a maximum depth of 100m at Boco Siding and occur as remnant patches at Sawmill Creek.

At 5391000N 378300E an anomaly with peak values of Zn 368ppm Pb417ppm occurs on lines 11600N - 12000N, Mn values are high(4882ppm) and are indicative of scavenging. Grey green siltstones underlie the area and no evidence of mineralisation has been located. The trend is coincident with a IP resistivity high in the EZ data (see Hughes, Appendix III).

6.2 Diamond drilling NPD 5

Hole NPD5 was designed to intersect the Brown's Tunnel host sequence (BTHS) beneath the Pinnacles Rhyolite at North Pinnacles (see drilling proposal Appendix IV). The BTHS comprises a distinctive package of felsic volcanic derived epiclastics, black siltstone and andesite lava. Narrow zinc-rich massive sulfide lenses occur in the Brown's Tunnel area in EL 44/88 Burns Peak, 3km SSW of North Pinnacles. The northern most drill intersection of the BTHS at Burns Peak was in BPD71, 1.8km south of North Pinnacles (Kirsner, Lorrigan and Rae 1991), in this hole 473.6m of the overlying Pinnacles Rhyolite was drilled.

Extensive silicification associated with anomalous Pb Ag Au in the Pinnacles Rhyolite (Mathison, 1989) at North Pinnacles was interpreted as hanging wall alteration to a VHMS .

The NPD5 drill log is included as Appendix V and the drill section as Fig 12. A summary log of the hole is as follows:

0 - 44m White Spur Formation.

Laminated siltstone and feldspathic sandstones overlying conglomeratic mass flow which are derived from the underlying Pinnacles Rhyolite.

44- 781.6m Pinnacles Rhyolite.

Lavas, lava breccias and minor epiclastic horizons.

The Pinnacles Rhyolite comprises a series of quartz feldspar and feldspar phyric rhyolite lava flows and lava breccias. Lithogeochemical plots (Figs 13-15) show that the rhyolite is similar to CVC footwall and the upper section of the Pinnacles Rhyolite at Brown's Tunnel. A more mafic basal part of the Pinnacles Rhyolite which occurs at Brown's Tunnel was not intersected in NPD5 (see Figs 13-15).

6 WORK UNDERTAKEN May 1993 – April 1994

6.1 Soil geochemistry

470 B/C horizon soil samples were collected on the Silver Falls grid late in the 1992/93 year. This analytical data was not available at the time of reporting in 1993.

The survey was designed to cover extensions of the Silver Falls soil anomaly defined previously by Aberfoyle (Taylor, 1979) and EZ (Mollison, 1980). Samples were dried, pulverised and analysed at Analabs for Cu Pb Zn Mn As by AAS, data is included in Appendix I, sample locations are plotted on Fig 6 and 7 and proportional plots of Pb and Zn are shown on Figs 8 – 11.

Maximum values for elements in the survey were Cu 7ppm, Pb1178ppm, Zn 391ppm, Mn 1.19% and As 100ppm

Soil geochemical data from Aberfoyle (Taylor 1979) and EZ(Mollison, 1980) has been digitised and combined with the Pasminco data and can be seen on Figs 8–11.

There is a positive correlation between Zn and Mn indicating scavenging and enhancement of base metals. In the Silver Falls area Mn is associated with carbonatised felsic volcanics.

Two anomalous areas have been defined by the soil geochemistry, a NNE continuation of the Silver Falls prospect and an area centred on 5391000N 378300E. Both the anomalies had been located by Aberfoyle and EZ.

At Silver Falls the maximum values for the survey were recorded, the anomaly has a strike of 600m (Lines10200–10800N). The anomaly is associated with galena–sphalerite–quartz–carbonate veining in carbonatised and sericitised felsic volcanics in the hanging wall of the Rosebery Fault. The anomaly straddles the boundary between EL2/90 and 1/93 and has been adequately tested at Silver Falls by shallow pits and DDH HRD1.

5 PREVIOUS EXPLORATION

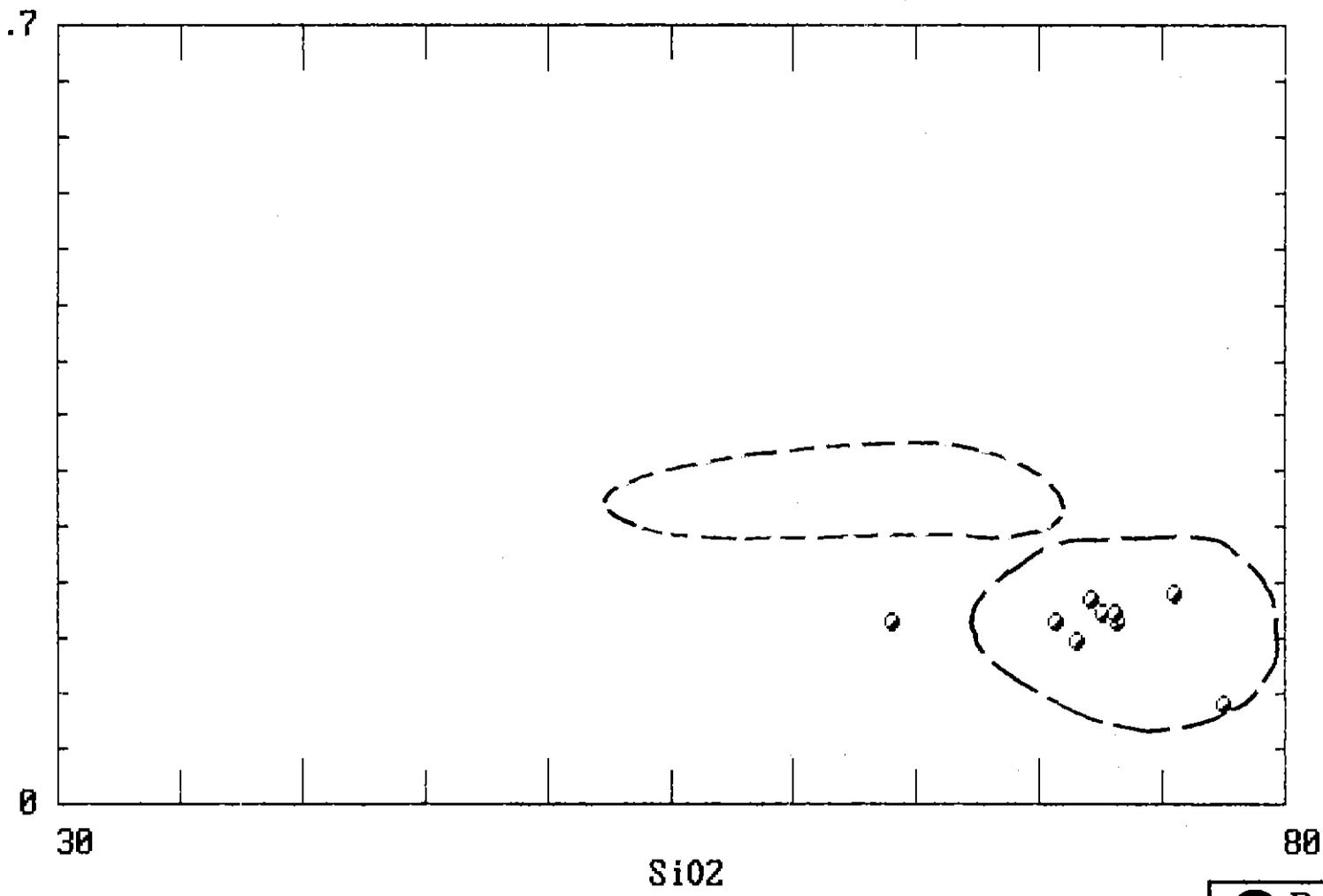
Previous exploration on what is now the Boco JV has been summarised by Kirsner (1992).

Exploration carried out on the Boco JV by Pasminco from inception to February 1992 is summarised in Poltock (1993). Work in the 1992/93 year was concentrated in the NW sector of EL 2/90 and is reported in Poltock (1993), this program included:

- gridding
- soil and rock geochemistry
- pole-dipole IP
- mapping
- petrology
- gravimetric surveying
- gravity and magnetics interpretation

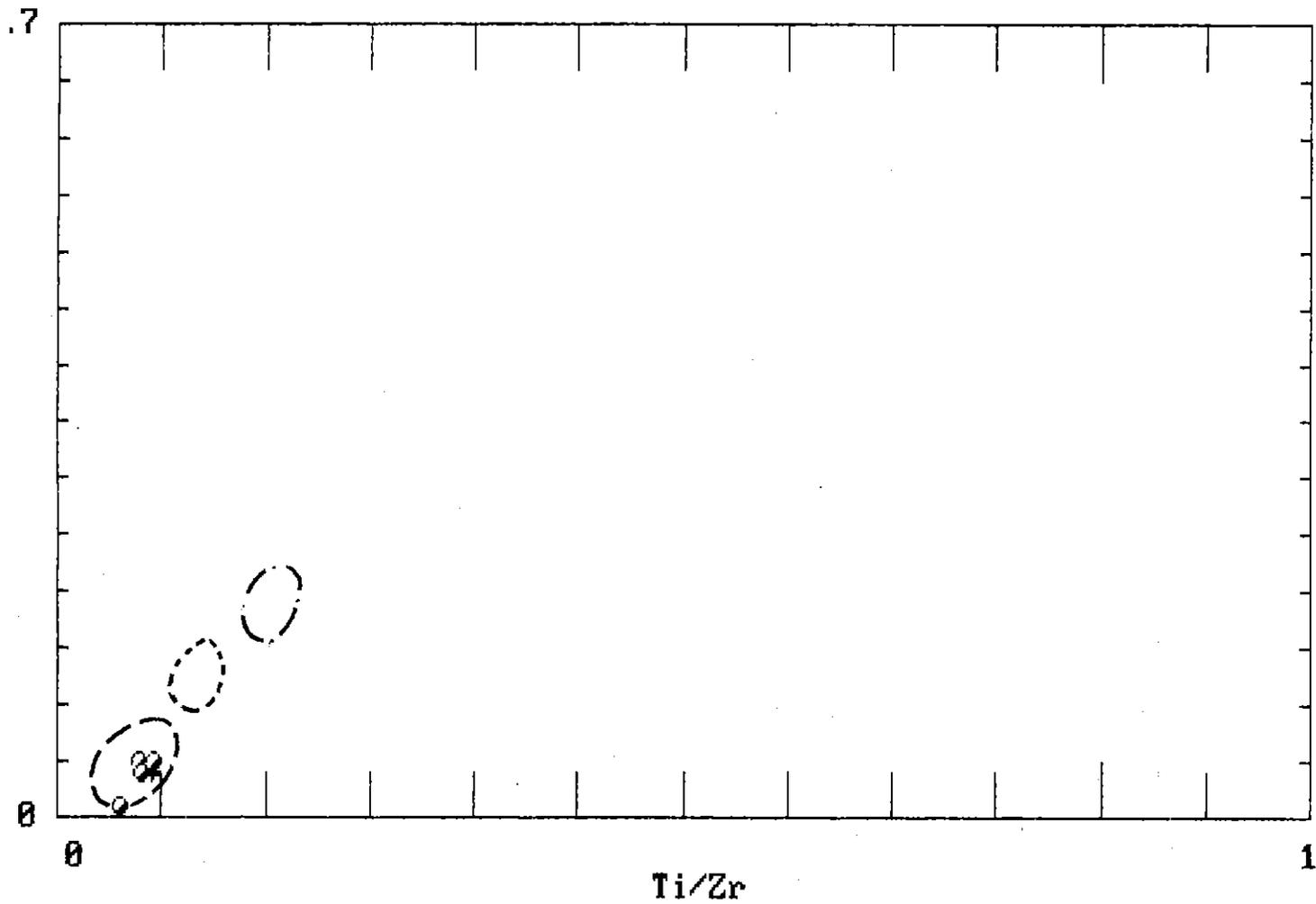
LEGEND

- — — CVC + Pinnacles Rhyolite
- - - - Base of Pinnacles Rhyolite
- Brown's Tunnel Andesite
- * Fields from E.L.44/88 Database



917017

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COMPILED : R.A.P. DATE : May 1994 DRAWN : P.G.R. REFERENCE : REVISIONS :	E.L. 8/90 - NORTH PINNACLES NPD5 LITHOGEOCHEMICAL PLOT P₂O₅/TiO₂ - SiO₂	
DRAWING No.	SCALE	FIG. No. 13



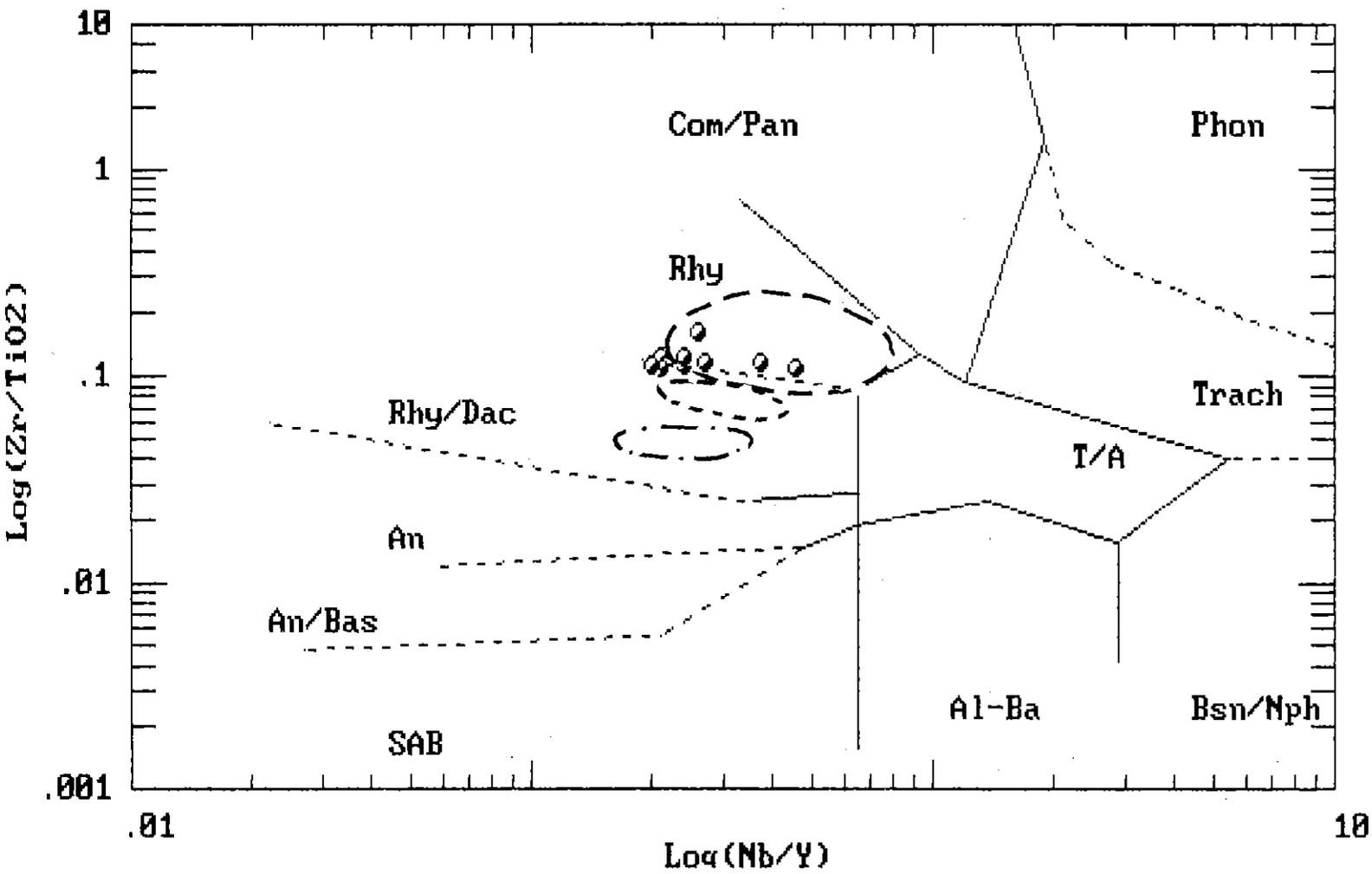
LEGEND

- — CVC + Pinnacles Rhyolite
- - - - Base of Pinnacles Rhyolite
- · - · - Brown's Tunnel Andesite
- * Fields from E.L.44/88 Database

917018

PASMINGO EXPLORATION <small>A Division of Pasmenco Australia Limited</small>		
COMPILED : R.A.P. DATE : May 1984 DRAWN : F.G.R. REFERENCE : REVISIONS :	E.L. 8/90 - NORTH PINNACLES NPD5 LITHOGEOCHEMICAL PLOT P₂O₅ - Ti/Zr	
DRAWING No.	SCALE	FIG. No. 14

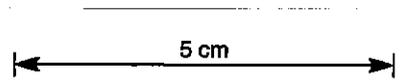
5 cm



LEGEND

- — CVC + Pinnacles Rhyolite
- - - - Base of Pinnacles Rhyolite
- · - · Brown's Tunnel Andesite
- * Fields from E.L.44/88 Database

Winchester & Floyd 1977



917019

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COMPILED : R.A.P.	E.L. 8/90 - NORTH PINNACLES NPD5 LITHOGEOCHEMICAL PLOT Zr/TiO₂ - Nb/Y	
DATE : May 1994		
DRAWN : P.G.R.		
REFERENCE :		
REVISIONS :		
DRAWING No.	SCALE	FIG. No. 15

Core bedding angles and facings at 673m in a sandstone are the only good indication that the thickness of Pinnacles Rhyolite intersected is near the true thickness.

Alteration and vein mineral assemblages in NPD5 appear to be zoned as follows:

55 – 241m, in the upper part of Pinnacles Rhyolite pervasive silicification occurs associated with disseminated and veinlet pyrite and traces of Pb–Zn mineralisation. Silicification is frequently associated with hydrothermal brecciation (71.00–97.90m). The best gold assay from this zone is 0.02g/t.

280 – 458m, zone of patchy silicification and chloritisation with scattered veins of galena and fluorite, best assay interval 1m @ 2.11% Pb.

Minor mineralisation is associated with fault zones and epiclastic horizons. Disseminated, semi-massive and vein pyrite occurs in a narrow fault zone between 360–362m, the interval assayed 2m at 0.38% Pb, 0.14% Zn. A felsic volcanic derived mass debris flow between 673.50–708.90m is associated with diffuse fine grained cream sphalerite blebs, the best assay interval is 677.00 – 679.20m, 2m at 0.23% Pb 0.95% Zn.

6.3 Review and compilation of electrical geophysics

As an aid to targeting drilling at North Pinnacles and Silver Falls extant electrical geophysics was compiled and integrated with the Pasminco IP survey (see Appendices II and III). Areas of potential interest were generated in the NW sector of EL 2/90 and at North Pinnacles.

NNE of Silver Falls an IP resistivity high is associated with siltstones with moderately anomalous Pb Zn (see 6.1). The IP anomaly has only been recorded in the EZ data and has not been confirmed in the Pasminco 1993 survey.

At North Pinnacles a near surface EM response is located on the contact between the Pinnacles Rhyolite and overlying White Spur Formation. This feature is associated with Pb Zn soil anomalies (725ppm Pb 1700ppm Zn). The northern end of this anomaly has been tested by DDH NPP214, however this hole may have stopped before reaching the contact with the Pinnacles Rhyolite.

6.4 Access line cutting

3.6km of access lines have been cut in the Bulgobac Falls area in the NE sector of EL2/90 (see Fig 3). The lines will facilitate mapping in tributaries of the Que and Bulgobac Rivers. This area lies outside the regional Geological Survey mapping coverage of the Mt Read Volcanics.

The area may contain equivalents of the Que /Hellyer Volcanics. Drilling at Sock Creek South (Fig 3) intersecting mafic volcanics, the geochemical affinities of which are uncertain at this stage. A significant proportion of the area is blanketed by fluvio-glacials, part of the Boco glacial valley.

Reconnaissance scale mapping in Bulgobac River at 5391700N 381650E located black siltstone interbedded with fossiliferous limestone adjacent to a sericitised felsic porphyry intrusive. The siltstone contains traces of galena sphalerite on joint faces.

6.5 Environmental Disturbance

Activities which impacted the environment during this licence year included drilling at North Pinnacles and line cutting at Bulgobac Falls.

The NPD5 access track and drill pad utilised 4WD tracks established by previous explorers. Rehabilitation has been restricted to cutting grips across the track to minimise erosion by water run off.

Access to DDH HRD1 at Silver Falls (EL 1/93) was via the Boco JV area, again existing tracks were used and rehabilitated in the same way after rig demobilisation.

Lines cut at Bulgobac Falls were accessed via the Emu Bay Railway and the existing Sock Creek 4WD track.

7 EXPENDITURE SUMMARY EL 2/90 & EL 8/90

Expenditure for all exploration completed from May 1993 to April 1994 on EL's 2/90 and 8/90 is **\$86 683** and **\$107 795**, respectively. This brings the total expenditure on the two tenements since their inception in 1990 to **\$579709** and **\$164028**, respectively.

A summary of the 1993–94 expenditure statement is presented below.

	EL 2/90	EL 8/90
Personnel: salaries, wages & on-costs	18 603	11 792
Travel & Accommodation	2 101	865
Geological Contractors	8 938	5 363
Analytical Costs	3 984	735
Geophysical Consultants	2 360	730
IP Survey	20 445	3 500
Track Cutting & Gridding	5 388	600
Other Consultants	1 117	84
Drilling: including contractor, access & core storage	427	66 153
Stores & Supplies	1 781	430
Vehicles Plant & Equipment	2 962	2 107
Tenement Costs	1 125	360
Computing	1 243	766
Office Running Costs	8 329	4 510
Administration	7 880	9 800
Total	86 683	107 795

8 CONCLUSIONS

Extensive silicification and weak base metal mineralisation intersected in DDH NPD5 at North Pinnacles may be associated with a hydrothermal system that may have generated a VHMS deposit. More mafic volcanics at the base of the Pinnacles Rhyolite which overlie the BTHS at Burns Peak were not intersected.

In the western sector of EL 2/90 the best Pb Zn soil geochemical anomaly lies west of the licence in EL 1/93 and has been tested by DDH HRD1. Mineralisation intersected was lead-rich vein style, similar to that exposed at the Silver Falls prospect. No further work is warranted at this stage.

Coincident soil and electrical geophysical anomalies occur on the western flank of the Pinnacles anticline in EL 8/90 and should be ground checked with mapping. DDH NPP214 targeted the northern end of the zone and may not have tested the White Spur Formation-Pinnacles Rhyolite contact.

Traces of galena and sphalerite in the siltstone-limestone sequence at Bulgobac Falls is of interest and will be evaluated during 1994/95.

9 RECOMMENDATIONS

The following relating low key exploration is recommended to evaluate potential VHMS targets within EL's 2/90 and 8/90:

1. DHEM at North Pinnacles in NPD5 to test for off-hole conductors, particularly adjacent to the zone of intense silicification.
2. Ground checking coincident soil and electrical geophysical anomalies at North Pinnacles and north of Silver Falls.
3. Complete geological mapping and sampling, in conjunction with gravity and magnetic interpretation, at Bulgobac Falls.

10 REFERENCES

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11 KEY WORDS

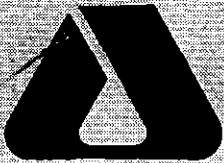
BOCO, SILVER FALLS, NORTH PINNACLES, BULGOBAC FALLS, EZ, BILLITON PINNACLES RHYOLITE, WHITE SUR FORMATION, LEAD, ZINC, MANGANESE, GOLD, GALENA, FLUORITE, CARBONATISATION, DRILLING, ELECTRICAL GEOPHYSICS, SOIL GEOCHEMISTRY, 1:25 000 BLOCK, CHARTER, PARSONS, RAMSAY.

APPENDICES

APPENDIX I

Analytical Report Silver Falls Soil Geochemistry

917029



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186

SAMPLE NUMBERS	SAMPLE DESCRIPTION	ELEMENT/METHOD
035201/226 035231/035290 035301/035400	SD Prep : 6P029,P2	Cu,Pb,Zn,Mn/6A140 As/HA140

REMARKS

RESULTS

TO

Roger Pollock Geological Pty Ltd
Mineral Exploration Contractor
C/- Post Office
WILMOT TAS 7310

RESULTS

TO

Mr F Fitzgerald
Pasminco Exploration
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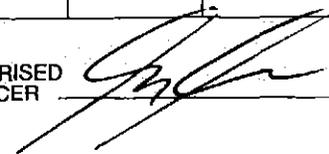
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3	035203	2	11	13	23	<1				
4	035204	5	18	23	30	7				
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6	035206	3	11	14	18	1				
7	035207	4	10	16	26	1				
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9	035209	7	15	22	33	4				
10	035210	6	17	19	31	3				
	035211	4	7	15	26	2				
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13	035213	6	22	23	33	6				
14	035214	8	42	21	30	6				
15	035215	9	42	25	32	4				
16	035216	5	18	14	27	2				
17	035217	12	36	24	37	4				
18	035218	4	12	15	23	2				
19	035219	8	16	21	29	3				
20	035220	10	19	24	40	3				
21	035221	13	41	22	28	25				
22	035222	9	19	15	27	4				
23	035223	8	17	25	35	4				
	035224	25	95	67	502	23				
25	035225	28	117	70	555	37				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
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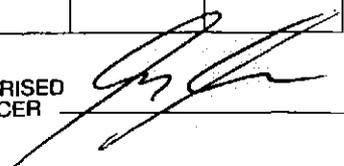
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2	035231	15	71	82	84	6				
3	035232	7	25	57	98	4				
4	035233	6	16	35	68	5				
5	035234	4	13	16	39	<1				
6	035235	8	41	28	59	4				
7	035236	7	32	35	74	6				
8	035237	6	46	49	105	3				
9	035238	9	77	254	640	6				
10	035239	4	18	30	121	2				
11	035240	5	57	23	40	27				
12	035241	6	20	33	35	11				
13	035242	5	44	29	33	17				
14	035243	4	73	27	31	11				
15	035244	5	52	33	45	8				
16	035245	12	36	71	47	7				
17	035246	5	45	44	80	3				
18	035247	13	96	93	97	14				
19	035248	18	88	108	113	13				
20	035249	5	37	46	137	4				
21	035250	6	36	72	129	4				
22	035251	12	28	76	559	4				
23	035252	12	22	76	258	3				
24	035253	4	16	84	326	3				
25	035254	10	20	70	59	4				

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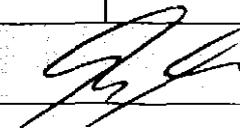
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2	035256	5	12	59	72	2					
3	035257	4	17	25	29	1					
4	035258	5	24	27	29	1					
5	035259	4	12	30	27	2					
6	035260	7	28	67	85	4					
7	035261	11	112	100	359	7					
8	035262	7	104	67	67	9					
9	035263	3	107	34	36	9					
10	035264	4	231	25	42	6					
11	035265	2	73	25	49	7					
12	035266	5	120	36	64	7					
13	035267	12	330	89	104	8					
14	035268	73	688	391	3167	8					
15	035269	30	694	142	1290	15					
16	035270	6	442	54	452	6					
17	035271	3	739	86	448	7					
18	035272	4	817	120	696	11					
19	035273	3	468	32	210	4					
20	035274	4	208	59	91	6					
21	035275	5	1178	50	1523	5					
22	035276	8	498	78	717	9					
23	035277	6	154	77	146	8					
24	035278	4	124	33	67	4					
25	035279	4	80	20	44	3					

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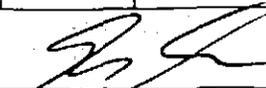
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1	035280	4	112	24	39	1				
2	035281	4	77	18	32	<1				
3	035282	2	47	14	36	<1				
4	035283	3	86	26	38	6				
5	035284	4	156	33	74	8				
6	035285	5	561	46	175	22				
7	035286	3	169	34	61	3				
8	035287	5	265	33	98	10				
9	035288	3	280	38	71	6				
10	035289	4	155	21	49	4				
11	035290	2	38	10	32	1				
12	035301	5	25	53	102	5				
13	035302	10	42	70	241	8				
14	035303	6	26	35	51	14				
15	035304	6	54	32	55	12				
16	035305	6	61	36	64	8				
17	035306	11	83	67	122	13				
18	035307	7	29	38	68	5				
19	035308	14	24	43	75	10				
20	035309	13	27	69	93	4				
21	035310	10	21	58	80	3				
22	035311	3	18	56	66	3				
23	035312	6	14	47	61	3				
24	035313	14	45	71	84	6				
25	035314	18	35	83	93	9				

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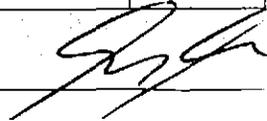
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1	035315	10	90	158	260	6				
2	035316	13	118	205	614	6				
3	035317	10	79	98	131	5				
4	035318	7	51	58	55	8				
5	035319	3	17	38	42	3				
6	035320	5	37	63	82	5				
7	035321	11	56	93	175	13				
8	035322	6	53	65	123	6				
9	035323	3	68	90	178	6				
10	035324	6	10	43	42	3				
11	035325	2	11	102	395	3				
12	035326	2	3	148	633	3				
13	035327	2	3	234	560	3				
14	035328	3	14	163	286	5				
15	035329	11	35	78	78	4				
16	035330	10	35	150	272	4				
17	035331	17	31	124	160	4				
18	035332	9	25	60	132	3				
19	035333	8	33	145	1198	5				
20	035334	7	32	116	437	4				
21	035335	4	18	147	412	4				
22	035336	5	26	84	129	4				
23	035337	3	24	123	225	4				
24	035338	3	23	93	112	3				
25	035339	3	34	100	106	5				

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	As				
1	035340	3	22	54	47	2				
2	035341	10	62	40	46	5				
3	035342	5	52	29	32	4				
4	035343	5	68	28	37	4				
5	035344	11	90	106	264	7				
6	035345	9	78	75	168	6				
7	035346	8	101	107	558	6				
8	035347	4	18	25	38	1				
9	035348	8	204	42	46	5				
10	035349	5	100	24	39	3				
11	035350	3	133	12	29	1				
12	035351	3	153	10	34	<1				
13	035352	3	159	19	36	4				
14	035353	6	463	35	267	10				
15	035354	3	459	35	61	5				
16	035355	4	448	25	52	4				
17	035356	3	381	36	61	4				
18	035357	3	126	22	37	4				
19	035358	5	77	18	24	2				
20	035359	3	138	29	62	7				
21	035360	4	101	29	58	3				
22	035361	5	472	57	64	18				
23	035362	4	16	15	25	3				
24	035363	2	44	15	33	1				
25	035364	3	27	14	24	2				

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	As				
1	035365	2	7	9	29	<1				
2	035366	2	6	7	18	<1				
3	035367	3	9	10	18	4				
4	035368	3	6	6	19	<1				
5	035369	2	9	6	22	<1				
6	035370	3	7	6	19	<1				
7	035371	2	9	7	21	<1				
8	035372	3	7	7	22	<1				
9	035373	2	6	7	19	<1				
10	035374	3	6	6	25	<1				
	035375	2	6	7	20	<1				
12	035376	3	8	9	20	<1				
13	035377	9	25	21	22	<1				
14	035378	24	67	53	109	40				
15	035379	4	8	8	14	3				
16	035380	3	5	6	21	<1				
17	035381	4	4	7	35	<1				
18	035382	2	5	7	21	<1				
19	035383	4	8	8	27	<1				
20	035384	3	10	9	23	1				
21	035385	4	8	10	47	1				
22	035386	3	9	10	23	2				
23	035387	7	60	52	88	5				
24	035388	6	93	37	58	8				
25	035389	6	107	35	47	10				

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	As				
1	035390	5	58	25	34	6				
2	035391	4	59	19	36	5				
3	035392	30	43	59	52	100				
4	035393	5	21	20	26	2				
5	035394	4	84	19	41	2				
6	035395	3	181	26	44	2				
7	035396	5	22	12	42	1				
8	035397	3	17	14	32	1				
9	035398	8	17	17	38	1				
10	035399	3	25	20	54	1				
11	035400	7	14	16	45	1				
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	2	3	2	3	1				
24	UNITS	ppm	ppm	ppm	ppm	ppm				
25	METHOD	GA140	GA140	GA140	GA140	HA140				

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035401/685	SD Prep : 6P029,P2	Cu, Pb, Zn, Mn/6A140, Mn/6A104 As/HA140

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Roger Pollock Geological Pty Ltd
Mineral Exploration Contractor
C/- Post Office
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RESULTS

TO

Mr F Fitzgerald
Pasminco Exploration
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1 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As		
1	035401	6	19	21	34	-	1		
2	035402	5	41	33	53	-	1		
3	035403	7	20	29	47	-	1		
4	035404	5	26	60	323	-	2		
5	035405	6	17	21	34	-	1		
6	035406	5	23	26	32	-	7		
7	035407	8	54	44	29	-	11		
8	035408	6	54	44	42	-	6		
9	035409	11	428	142	88	-	48		
10	035410	13	419	252	146	-	22		
11	035411	5	45	20	29	-	1		
12	035412	4	40	15	34	-	6		
13	035413	5	22	13	29	-	8		
14	035414	4	38	22	36	-	7		
15	035415	5	25	13	33	-	1		
16	035416	4	48	30	54	-	3		
17	035417	5	73	40	63	-	10		
18	035418	4	110	27	60	-	6		
19	035419	4	269	33	52	-	10		
20	035420	5	241	39	52	-	8		
21	035421	5	145	36	44	-	17		
22	035422	7	135	38	42	-	8		
23	035423	8	66	42	43	-	5		
24	035424	5	71	32	34	-	45		
25	035425	7	69	39	36	-	8		

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
-- = element not determined

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OFFICER*Keith Hand*

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2 OF 12

TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
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2	035427	12	101	47	43	-	9			
3	035428	18	41	73	83	-	7			
4	035429	12	31	89	171	-	5			
5	035430	13	28	118	387	-	5			
6	035431	8	22	106	996	-	3			
7	035432	6	22	83	182	-	4			
8	035433	9	33	33	75	-	4			
9	035434	14	73	201	>5000	1.19	62			
10	035435	9	47	32	90	-	8			
11	035436	7	46	25	45	-	2			
12	035437	5	26	17	22	-	1			
13	035438	6	71	21	30	-	5			
14	035439	5	23	16	25	-	<1			
15	035440	7	28	24	49	-	2			
16	035441	5	74	23	31	-	<1			
17	035442	4	23	107	199	-	5			
18	035443	6	40	31	35	-	3			
19	035444	10	91	46	40	-	5			
20	035445	13	124	64	79	-	6			
21	035446	4	127	33	45	-	3			
22	035447	7	292	69	92	-	10			
23	035448	4	158	41	57	-	7			
24	035449	7	150	50	80	-	5			
25	035450	8	226	45	60	-	7			

Results in ppm unless otherwise specified
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-- = element not determined

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
1	035451	11	193	65	108	-	10			
2	035452	6	116	37	91	-	6			
3	035453	6	149	47	75	-	5			
4	035454	3	101	43	65	-	6			
5	035455	5	140	77	113	-	12			
6	035456	4	36	43	51	-	3			
7	035457	4	29	22	51	-	3			
8	035458	7	213	235	282	-	7			
9	035459	5	107	79	84	-	8			
10	035460	25	169	164	302	-	29			
11	035461	3	43	22	44	-	2			
12	035462	6	55	36	93	-	3			
13	035463	12	64	57	197	-	10			
14	035464	18	87	84	2178	-	9			
15	035465	16	109	76	225	-	11			
16	035466	25	45	176	4661	-	8			
17	035467	17	58	86	1541	-	10			
18	035468	14	29	89	2400	-	5			
19	035469	7	25	93	454	-	8			
20	035470	7	56	79	147	-	9			
21	035471	10	58	122	270	-	6			
22	035472	8	48	69	91	-	5			
23	035473	6	26	45	89	-	4			
24	035474	6	87	46	32	-	2			
25	035475	6	98	51	100	-	4			

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
1	035476	8	53	44	46	-	5			
2	035477	4	39	28	29	-	2			
3	035478	4	33	56	58	-	5			
4	035479	8	86	96	215	-	4			
5	035480	18	212	151	359	-	9			
6	035481	26	191	167	1466	-	11			
7	035482	23	202	198	520	-	8			
8	035483	25	143	208	238	-	11			
9	035484	9	75	168	143	-	5			
10	035485	3	62	125	146	-	5			
11	035486	3	44	90	89	-	1			
12	035487	3	116	88	88	-	2			
13	035488	5	127	84	77	-	2			
14	035489	7	142	102	110	-	3			
15	035490	5	52	63	77	-	3			
16	035491	5	69	26	44	-	3			
17	035492	7	34	21	36	-	2			
18	035493	7	110	31	50	-	4			
19	035494	6	94	25	43	-	6			
20	035495	6	50	28	47	-	8			
21	035496	6	71	25	41	-	4			
22	035497	8	80	24	31	-	4			
23	035498	8	51	20	30	-	4			
24	035499	14	19	52	31	-	7			
25	035500	6	19	18	26	-	1			

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As				
1	035501	7	27	25	35	-	1				
2	035502	7	21	22	34	-	2				
3	035503	13	15	38	93	-	3				
4	035504	8	7	25	41	-	3				
5	035505	6	12	18	29	-	2				
6	035506	9	6	34	88	-	1				
7	035507	4	7	9	20	-	1				
8	035508	9	20	26	54	-	2				
9	035509	12	18	30	42	-	4				
10	035510	8	21	21	35	-	3				
11	035511	10	22	32	58	-	3				
12	035512	15	32	50	79	-	6				
13	035513	9	29	35	56	-	4				
14	035514	8	46	33	59	-	7				
15	035515	8	18	28	51	-	5				
16	035516	10	14	46	84	-	1				
17	035517	4	8	11	28	-	1				
18	035518	12	26	52	104	-	11				
19	035519	25	30	79	206	-	17				
20	035520	22	33	78	301	-	9				
21	035521	26	34	81	386	-	9				
22	035522	19	40	62	301	-	8				
23	035523	9	46	77	239	-	5				
24	035524	13	100	168	796	-	9				
25	035525	38	45	368	559	-	12				

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		111310.60.09475				28/05/93		0237		6 OF 12	
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As				
1	035526	14	42	52	86	-	9				
2	035527	7	55	35	55	-	4				
3	035528	11	103	100	277	-	6				
4	035529	15	42	145	394	-	7				
5	035530	7	18	64	142	-	4				
6	035531	7	20	45	78	-	4				
7	035532	10	23	42	69	-	3				
8	035533	5	5	19	28	-	2				
9	035534	17	13	40	61	-	7				
10	035535	21	19	80	143	-	5				
	035536	34	46	80	885	-	7				
12	035537	40	100	139	2227	-	6				
13	035538	36	93	209	706	-	7				
14	035539	26	36	90	217	-	7				
15	035540	16	23	62	134	-	5				
16	035541	10	35	39	49	-	3				
17	035542	8	34	34	52	-	2				
18	035543	7	29	22	33	-	3				
19	035544	11	61	44	65	-	5				
20	035545	10	58	43	57	-	5				
21	035546	10	45	36	40	-	4				
22	035547	5	21	40	56	-	2				
23	035548	5	15	31	46	-	2				
24	035549	6	70	35	50	-	2				
25	035550	6	25	27	44	-	2				

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
1	035551	6	30	24	47	-	4			
2	035552	6	31	18	41	-	1			
3	035553	6	19	11	25	-	<1			
4	035554	5	16	7	24	-	<1			
5	035555	6	18	9	22	-	<1			
6	035556	6	11	11	27	-	<1			
7	035557	6	16	7	21	-	<1			
8	035558	5	6	5	18	-	<1			
9	035559	5	8	6	16	-	<1			
10	035560	5	18	7	17	-	2			
	035561	5	46	8	12	-	2			
12	035562	6	11	7	18	-	1			
13	035563	8	20	14	26	-	3			
14	035564	19	13	39	70	-	8			
15	035565	15	21	27	48	-	6			
16	035566	11	56	21	50	-	7			
17	035567	12	49	24	49	-	8			
18	035568	9	32	17	37	-	5			
19	035569	11	31	22	45	-	6			
20	035570	15	24	30	54	-	7			
21	035571	17	19	30	79	-	7			
22	035572	14	13	32	70	-	4			
23	035573	15	15	32	61	-	5			
24	035574	15	18	34	67	-	4			
25	035575	18	83	69	180	-	6			

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
1	035576	13	177	124	393	-	9			
2	035577	16	205	179	510	-	11			
3	035578	18	309	225	559	-	11			
4	035579	8	215	311	875	-	8			
5	035580	18	176	73	671	-	13			
6	035581	32	223	104	3189	-	10			
7	035582	20	238	129	3024	-	10			
8	035583	25	417	328	4882	-	12			
9	035584	8	33	84	497	-	4			
10	035585	12	39	59	231	-	4			
11	035586	28	82	91	326	-	5			
12	035587	16	33	82	396	-	4			
13	035588	11	36	38	83	-	2			
14	035589	13	37	45	97	-	2			
15	035590	11	27	42	103	-	4			
16	035591	7	32	20	38	-	2			
17	035592	29	132	55	61	-	7			
18	035593	43	31	57	374	-	7			
19	035594	20	32	50	108	-	3			
20	035595	21	28	34	70	-	3			
21	035596	17	30	29	56	-	3			
22	035597	18	11	29	77	-	3			
23	035598	19	23	30	58	-	3			
24	035599	10	18	19	43	-	2			
25	035600	9	16	54	100	-	2			

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As				
1	035601	26	36	94	443	-	4				
2	035602	19	44	172	1815	-	3				
3	035603	15	45	91	227	-	3				
4	035604	17	62	134	1641	-	4				
5	035605	28	61	214	729	-	5				
6	035606	20	59	171	1091	-	4				
7	035607	17	43	156	307	-	4				
8	035608	9	47	71	123	-	5				
9	035609	10	50	60	86	-	7				
10	035610	7	43	31	54	-	6				
11	035611	7	48	41	56	-	5				
12	035612	3	16	15	20	-	<1				
13	035613	3	11	9	23	-	<1				
14	035614	3	9	8	19	-	<1				
15	035615	4	11	10	16	-	<1				
16	035616	4	7	5	17	-	<1				
17	035617	3	7	5	19	-	<1				
18	035618	4	15	8	17	-	<1				
19	035619	4	14	7	15	-	<1				
20	035620	3	12	11	17	-	<1				
21	035621	5	13	13	20	-	<1				
22	035622	4	11	8	13	-	<1				
23	035623	4	9	8	17	-	<1				
24	035624	3	9	6	13	-	6				
25	035625	18	30	27	59	-	7				

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		111310.60.09475				28/05/93	0237			10	OF 12
TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As				
1	035626	16	24	23	55	-	8				
2	035627	13	24	29	114	-	4				
3	035628	28	72	72	1486	-	19				
4	035629	30	39	53	414	-	13				
5	035630	26	79	84	1065	-	18				
6	035631	23	122	97	2438	-	15				
7	035632	17	83	68	1075	-	13				
8	035633	28	86	79	4740	-	11				
9	035634	35	72	111	4511	-	10				
10	035635	17	66	62	1254	-	8				
11	035636	22	58	92	2669	-	10				
12	035637	19	56	87	1132	-	8				
13	035638	12	51	82	949	-	10				
14	035639	18	66	140	1171	-	8				
15	035640	9	25	67	152	-	4				
16	035641	5	26	111	215	-	4				
17	035642	2	10	29	99	-	<1				
18	035643	2	11	7	30	-	<1				
19	035644	6	29	63	109	-	3				
20	035645	4	19	16	37	-	2				
21	035646	3	28	14	32	-	3				
22	035647	2	32	10	27	-	1				
23	035648	12	75	27	82	-	3				
24	035649	31	108	127	1208	-	4				
25	035650	29	47	57	1631	-	6				

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As			
1	035651	34	38	65	1209	-	6			
2	035652	51	35	104	1390	-	5			
3	035653	39	49	60	966	-	6			
4	035654	30	51	67	1178	-	6			
5	035655	52	52	79	2054	-	9			
6	035656	62	60	104	3151	-	6			
7	035657	19	86	64	351	-	7			
8	035658	15	45	46	247	-	7			
9	035659	41	55	231	533	-	4			
10	035660	21	26	108	836	-	6			
	035661	17	51	182	485	-	4			
12	035662	37	32	112	1963	-	4			
13	035663	40	35	150	1185	-	4			
14	035664	24	32	57	168	-	6			
15	035665	6	24	23	63	-	4			
16	035666	45	67	141	2483	-	9			
17	035667	29	52	96	1215	-	7			
18	035668	25	76	97	1234	-	7			
19	035669	17	68	56	679	-	6			
20	035670	41	71	106	2310	-	8			
21	035671	38	57	117	2979	-	7			
22	035672	48	86	118	2368	-	7			
23	035673	42	88	118	1478	-	7			
	035674	32	63	107	947	-	6			
25	035675	22	64	85	201	-	8			

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Mn	Mn	As				
1	035676	29	124	105	197	-	9				
2	035677	8	41	52	67	-	6				
3	035678	4	14	23	27	-	1				
4	035679	5	12	20	34	-	1				
5	035680	6	6	16	27	-	<1				
6	035681	4	6	13	23	-	<1				
7	035682	5	12	18	25	-	<1				
8	035683	4	5	10	28	-	<1				
9	035684	5	29	23	26	-	5				
10	035685	6	24	18	27	-	3				
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23	DETECTION	2	3	2	3	0.01	1				
	UNITS	ppm	ppm	ppm	ppm	%	ppm				
25	METHOD	GA140	GA140	GA140	GA140	GA104	HA140				

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APPENDIX II

**Reassessment of Electrical Geophysical Data
over the Silver Falls (EL 2/90) and North Pinnacles (EL 8/90)**



**PASMINCO
EXPLORATION**

MEMORANDUM

TO: R Poltock

FROM: NA Hughes

DATE: September 01, 1993

FILE: EP/02/3009

SUBJECT: **Reassessment of Electrical Geophysical Data over the Silver Falls (EL2/90) and North Pinnacles Grids (EL4/90).**

A Division of Pasma Australia Limited,
A.C.N. 004 074 962

Level 7
380 St Kilda Road
Melbourne, Australia 3004
G.P.O. Box 1291K
Melbourne, Australia 3001

Summary

A review of extant electrical geophysical data over the Silver Falls and North Pinnacles Grids, EL2/90 and EL4/90, failed to reveal any anomalies worthy of follow-up, save perhaps ground checking.

Silver Falls Extension Grid

Two reconnaissance style IP and Resistivity surveys have been conducted over this area, both by Scintrex, in 1979 and 1993. The first survey for EZ used a dipole-dipole array with a 100m dipole separation, the second survey for Pasma Exploration used a pole-dipole array with a 100m dipole separation. The second survey was initiated to obtain greater coverage over the contact of the Pinnacles Rhyolite and White Spur Formation, and was run on lines striking N45W to account for local strike, whereas the first ran along EW lines.

Neither survey detected any significant chargeability anomalies, however several moderate strength (double background) anomalies are noted. No drilling has been done on the grid to date.

North Pinnacles Grid

An IP and Resistivity survey was conducted over the area during 1979 by Scintrex on behalf of EZ, and a large loop TEM survey by Geotrex on behalf of Outokumpu/Pancontinental in 1987.

The IP and Resistivity survey used a dipole-dipole array with a dipole separation of 100m. No significant anomalies were detected, however several of the better defined anomalies were detailed using a dipole separation of 40m, the results of which indicate a more polarisable near surface. Drilling of coincident IP and geochemical anomalies intersected disseminated base metal sulphides but no massive sulphides.

The IP and Resistivity data have been Fraser Filtered and then contoured to aid in line to line comparison of results (Figures 1 and 2). Also shown on the figures is the contact of the Pinnacles Rhyolite and the White Spur formation and location of drill-holes.

The large loop TEM surveys undertaken by Pancontinental and Outokumpu failed to detect any significant anomalies. An early time response is noted on line 10200N at station 10000E (5387100mN, 378600mE) in both the in-line and vertical components. The fact the response has a reversed polarity would indicate a source close to surface (at surface) and dipping east. This position is at the contact of the Pinnacles Rhyolite and the White Spur Formation and east of an IP anomaly. The anomaly is not detected on lines to the south or north, nor is it detected by resistivity surveying.

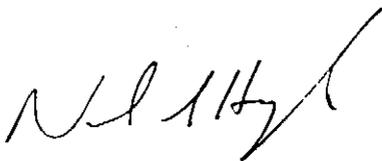
Conclusions

No significant IP or EM anomalies were detected on either grid. The two IP anomalies detected on the North Pinnacles Grid have been drill-tested.

Recommendations

For the North Pinnacles Grid it is recommended that the position of the weak EM anomaly be ground checked to determine a source, either a contact or change in the conductivity and/or thickness of the cover.

For the Silver Falls Grid it is recommended that the data from the 1979 and 1993 IP surveys be merged and imaged/contoured for future reference and as a mapping aid for geology.



Neil

REFERENCES

Howland-Rose, A.W. 1979, Comments on Additional Dipole-dipole EIP surveys over the North Pinnacles Grid, Rosebery Area, Tasmania, on behalf of Electrolytic Zinc Company of Australasia Limited

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Wilson, D.R. 1987, Report on an EM37 Survey, North Pinnacles Prospect, Bulgobac E.L. 12/72. Tasmania

North Pinnacles (Fraser Filtered) IP

378000

378500

379000

379500

380000

Scintrex 1979 survey,
Dipole-dipole array,
a=100m, n=1 to 4,
units=mV/V

5388000

5388000

5387500

5387500

5387000

5387000

378000

378500

379000

379500

380000

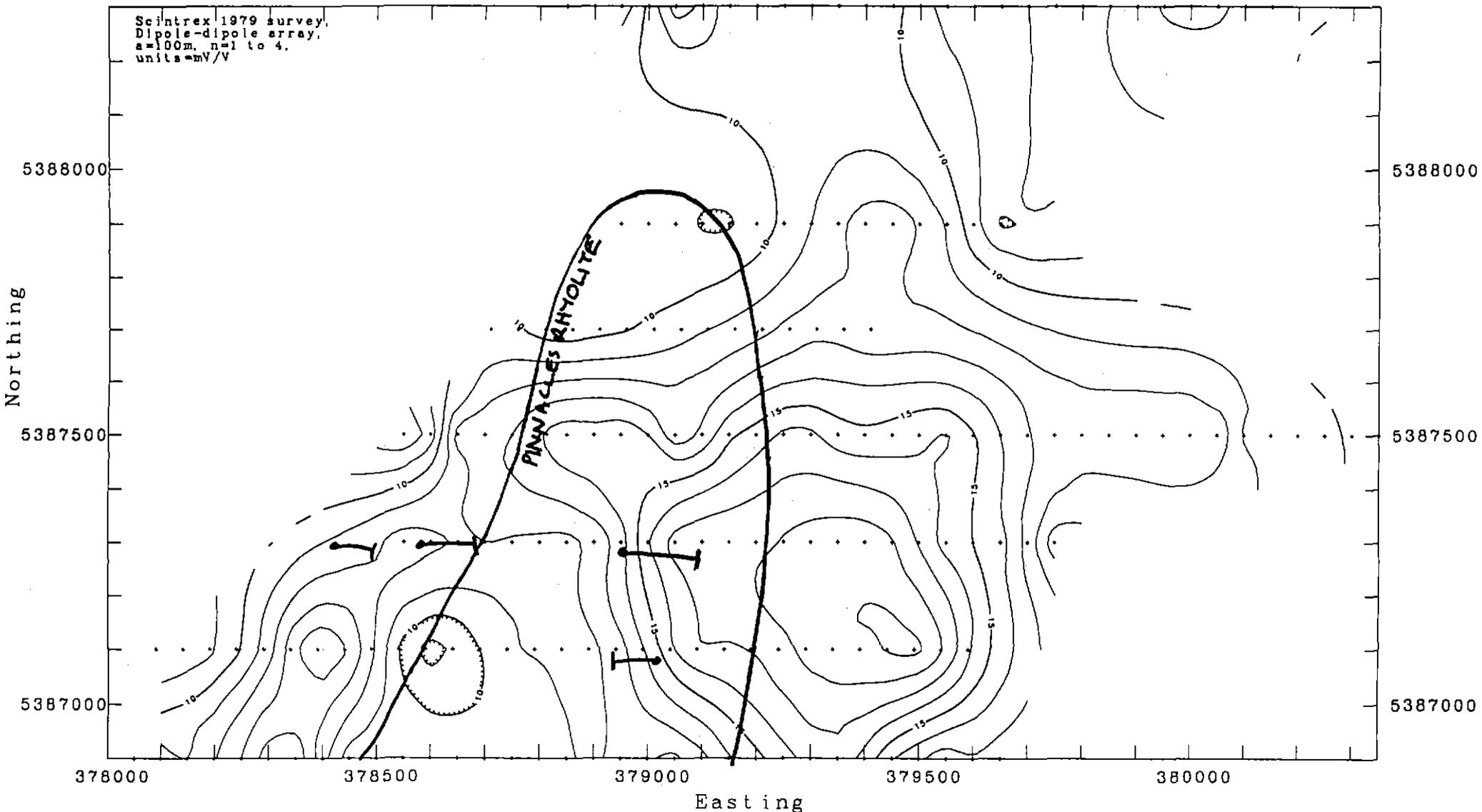
Easting

SCALE 1 cm. = 100 metres

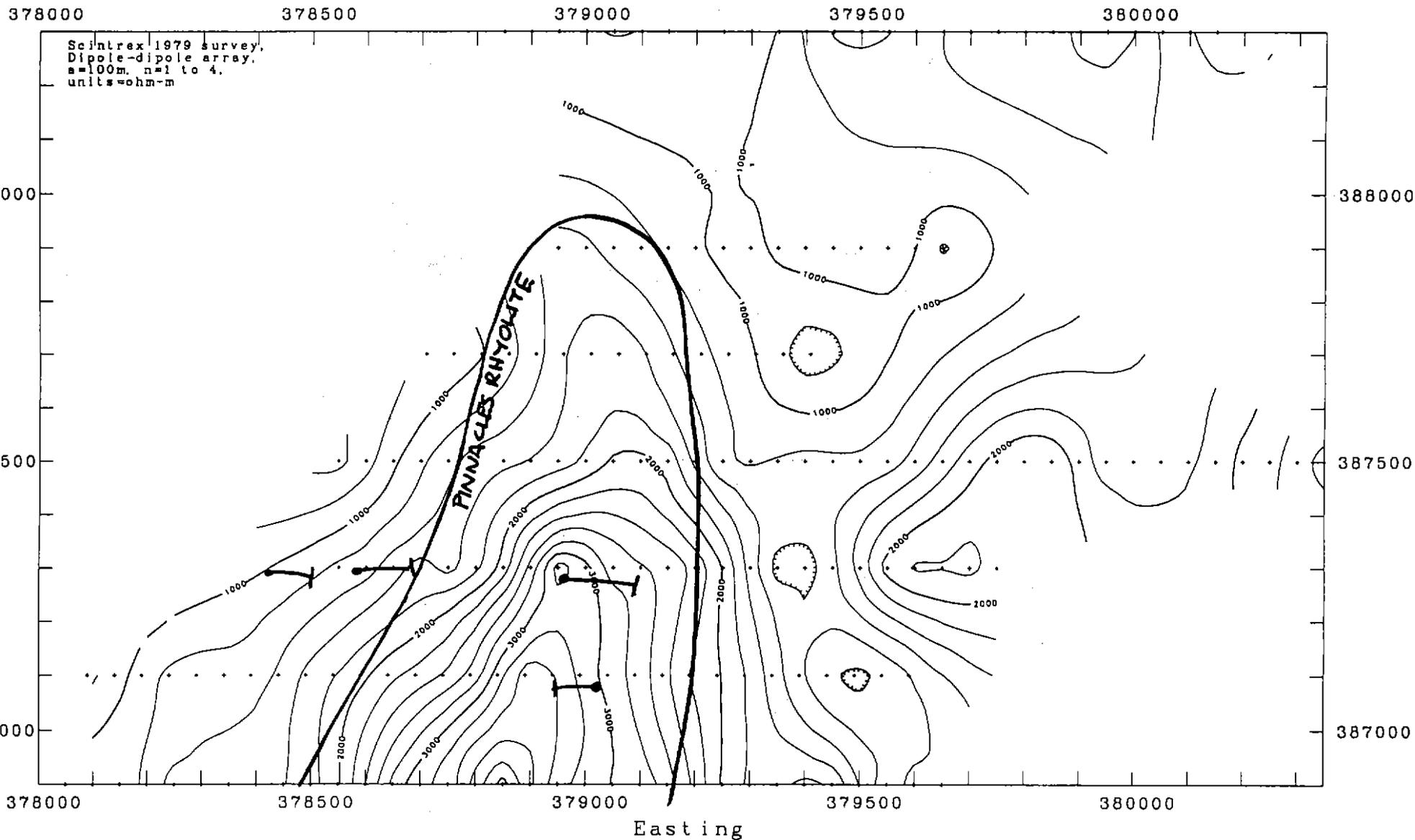
5 cm

917055

Figure 1



North Pinnacles (Fraser Filtered) Resistivity



917056

Figure 2

APPENDIX III

**Merging of the 1979 and 1993 IP and Resistivity Data Sets
over the Silver Falls (EL 2/90) Grid**

MEMORANDUM



917058

**PASMINCO
EXPLORATION**

TO: R Poltock
FROM: NA Hughes
DATE: October 19, 1993
FILE: EP/02/3009
SUBJECT: Merging of the 1979 and 1993 IP and Resistivity
Data sets over the Silver Falls (EL2/90) Grid.

A Division of Pasma Australia Limited,
A.C.N. 004 074 962

Level 7
380 St Kilda Road
Melbourne, Australia 3004
G.P.O. Box 1291K
Melbourne, Australia 3001

Two reconnaissance style IP and Resistivity surveys have been conducted over the Silver Falls Grid, both by Scintrex, in 1979 and 1993. The first survey for EZ used a dipole-dipole array with a 100m dipole separation and four potential dipoles read from each current set up, the second survey for Pasma Exploration used a pole-dipole array with a 100m dipole separation and six potential dipoles read per current set up.

The second survey was initiated to obtain greater coverage than the first over the contact of the Pinnacles Rhyolite and Whiter Spur Formation, and was run on lines striking N45W to account for local strike, whereas the first ran along EW lines.

The data for both surveys have been merged into a common data set for future reference. For the 1979 data this involved digitising all the data points into files, since it was only available as pseudosections, and then fraser filtering the results. For the 1993 survey the data for the first four dipoles were fraser filtered for the resistivity and tenth channel of chargeability (450 to 590 milli seconds for a 2 second bipolar interrupted transmitter pulse).

The data from the 1993 data was converted from grid coordinates to AMG coordinates as to match those of the 1979 survey.

To grid both data sets together the 1979 data was "normalised" to the 1993 data by adjusting the 1979 data to have the same mean and standard deviation as the 1993 data set. This is done by first finding the mean and standard deviation for both grids and then calculating a "normalised" value for the 1979 data using the formula :

$$m_1 = (m_0 - \mu_0) \times \sigma_1 / \sigma_0 + \mu_1$$

Where: m_0 = 1979 IP value m_1 = "normalised" IP value
 μ_0 = 1979 mean value μ_1 = 1993 mean value
 σ_0 = 1979 std deviation σ_1 = 1993 std deviation

(from Whitaker, 1991)

Figure 1 shows the IP and Resistivity coverage from the two surveys. Figures 2 and 3 are contour plan maps of the IP and Resistivity results for the combined grid. A copy of the digitised data for the 1979 survey and the combined fraser filtered results are attached.

Neil 

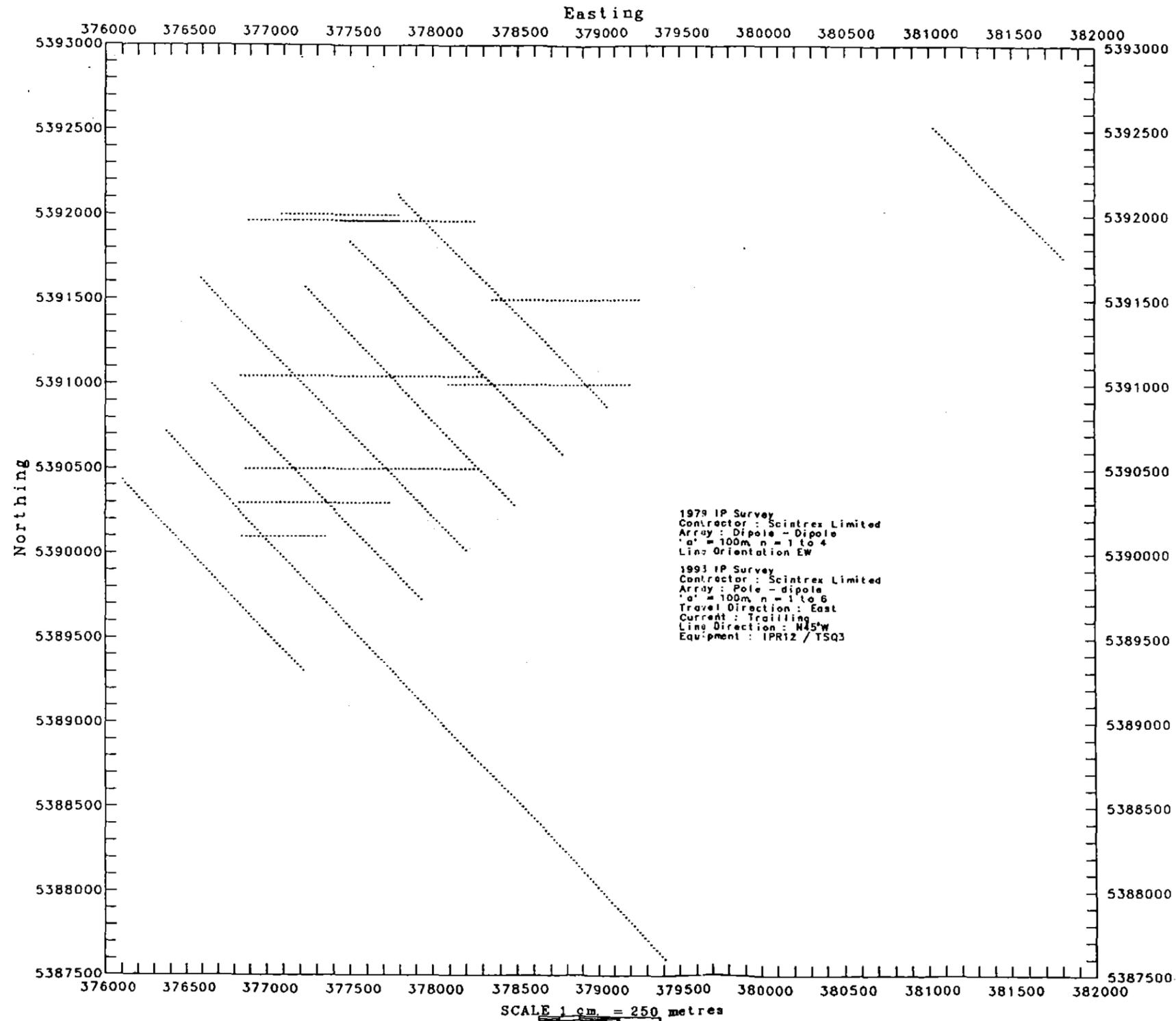
REFERENCES

Basford, P.W. 1992, Pasminco Exploration Report. A Compilation of the IP and Resistivity Data Collected on the Little Broken Hill E.L. (HL213,BH59)

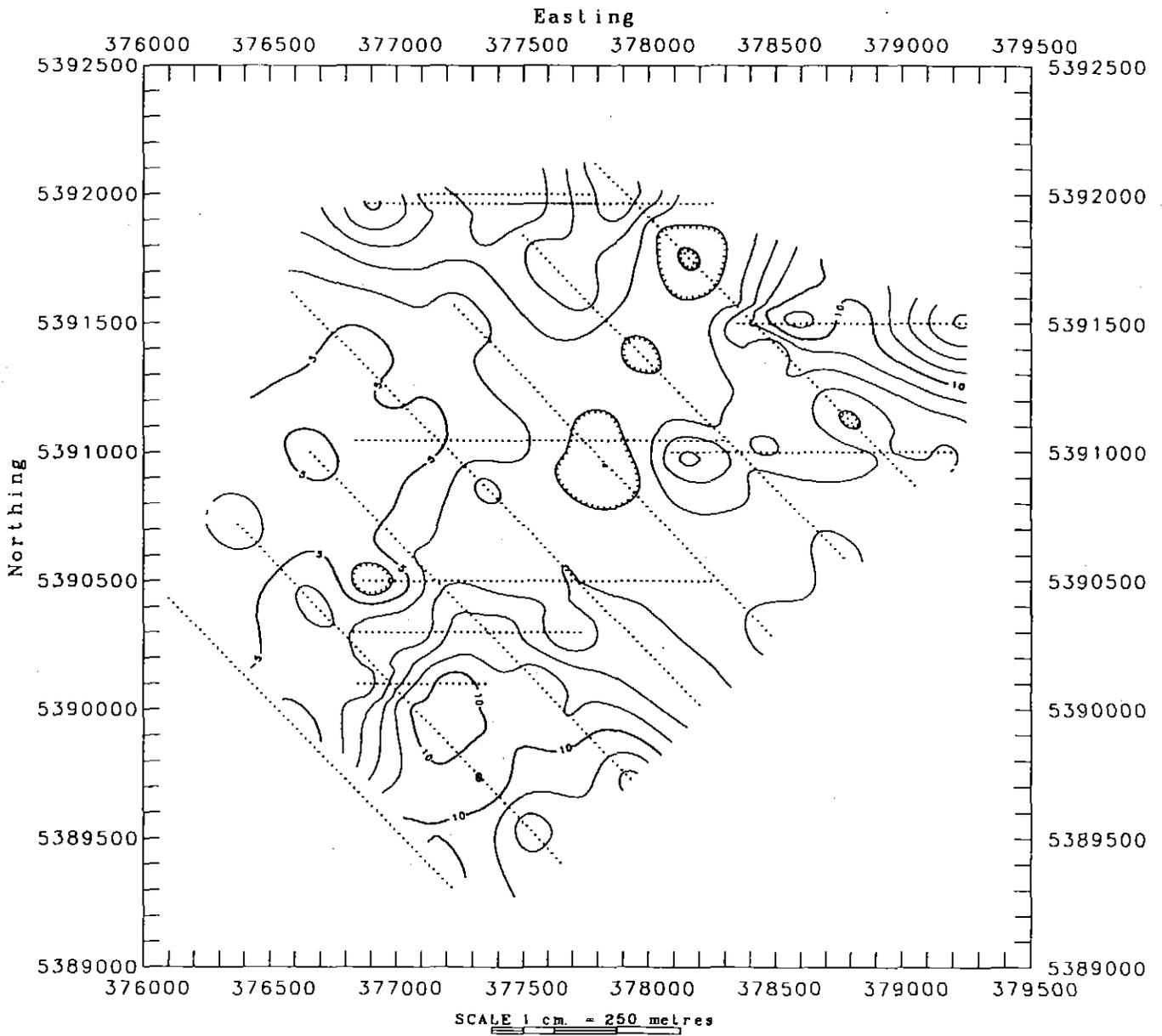
Howland-Rose, A.W. 1980, Comments on Dipole-dipole Reconnaissance Surveys, Silver Falls Grid, Near Tullah, Tasmania, on behalf of Electrolytic Zinc Company of Australasia Limited

Hughes, N.A. 1993, Pasminco Exploration Memorandum. Interpretation of Induced Polarisation and Resistivity Results from BOCO EL2/90 and EL4/90.

BOCO EL 2/90 : IP Coverage 1979, 1993

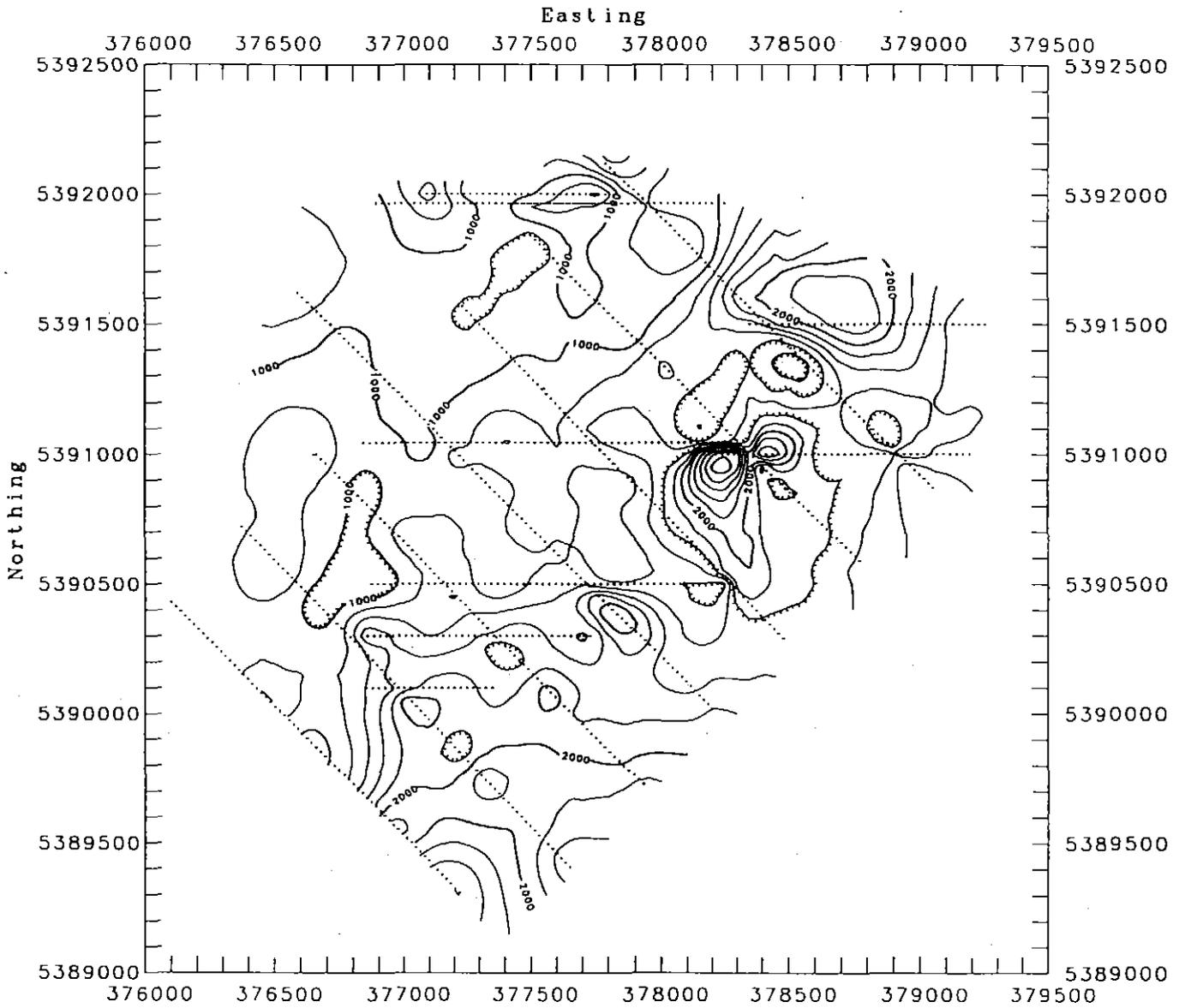


BOCO EL 2/90 : IP Contour Map (mV/V)



5 cm

BOCO EL 2/90 : Resistivity Contour Map (ohm-m)



5 cm

APPENDIX IV

Drilling Proposal NPD5

PASMINCO EXPLORATION
EL 8/90 NORTH PINNACLES
DIAMOND DRILL HOLE PROPOSAL NPD005

Prepared by RA Poltock

Collar 5 387 100N 379 275E 560m ASL
 270° AMG
 dip - 80°

Target depth Interpretation "A" 600-700m
 Interpretation "B" 350-450m

TARGET

Volcanic hosted massive Zn, Pb, Cu and precious metal-rich sulphides within the "Browns Tunnel Host" (BTH) sequence beneath the Pinnacles Rhyolite. The best intersection to date at Brown's Tunnel (within EL 44/88) is in DDH EAF9, 24.1m @ 9.3% Zn, 3.8% Pb, 0.5% Cu and 2.5g/t Au.

Regionally, this stratigraphic position has similarities to the Rosebery Mine Host Sequence. Both host sequences overlie thick pumiceous mass flows of the Central Volcanic Complex.

This blind target and the interpreted occurrence of the BTH beneath the Pinnacles Rhyolite is based on exploration drilling by Pasminco on the Burns Peak licence (EL 44/88) which adjoins EL 8/90 to the south (see Figure 1).

The North Pinnacles area has been surveyed by previous tenement holders with EM, IP soil/rock geochemistry and four shallow diamond drill holes (see Figure 2). From these surveys the only focus for further drilling is the Pb, Ag, Au soil and rock geochemical anomaly, which was tested by drill holes NPP215 and NPD004 (EZ and North Broken Hill Peko). These holes intersected sericite-silica-pyrite altered breccias (in part hydrothermal brecciation) with anomalous Pb, Zn and gold. EZ and Peko's target was gold and basemetals within the Pinnacles Rhyolite and the alteration was interpreted as footwall to a VHMS system.

From Pasmenco's work at Burns Peak this alteration and weak mineralisation in the Pinnacles Rhyolite is interpreted as hangingwall to a VHMS system, and more specifically the BTH. The target is further enhanced by the occurrence of Billiton's "CL" lithochemical indicator suite (see Figure 2).

Two target depths, "A" and "B" are based on the occurrence of a distinctive rhyolite lava which overlies the BTH and occurs in NPD004 and NP215. Both interpretations are shown on Figures 4 & 5.

STRATIGRAPHY & SETTING OF THE BROWN'S TUNNEL HOST SEQUENCE

The sequence from stratigraphic top to base is: White Spur Formation (Dundas Group); Pinnacles Rhyolite; Brown's Tunnel Host and Central Volcanic Complex. Only the upper two units are exposed at North Pinnacles.

White Spur Formation, comprises a thick sequence of grey siltstones intercalated with felsic mass debris flows. Contacts with the underlying Pinnacles Rhyolite are interpreted to be gradational (although some shearing is evident) and are exposed on the Silver Falls track and in vicinity of NPP214.

Pinnacles Rhyolite, a thick package of feldspar > quartz-phyric lavas and lava breccias with minor siltstone/sandstone lenses. The interpreted thickness of the rhyolite is critical for this drill proposal but can only be a very rough estimate due to:

- i. variable primary thickness of the Pinnacles Rhyolite as a result of irregular lava flows.
- ii. internal stratigraphy of the rhyolite has not been established.
- iii. possible structural thickening or faulting out of parts of the sequence.

Geoff Randell discussed these points in the North Pinnacles Annual Report in 1990.

Two interpretations (A and B) for thickness estimates for the rhyolite are based on intersections in BPD71 the northern most hole in the Burns Peak area, 2km to the south.

DEPTH TO TOP OF BTH INTERPRETATION "A".

400m of rhyolite was intersected in BPD71 and it is estimated that another 225m of rhyolite exists west of the collar (Figures 2 and 3), giving a total of 600-650m.

DEPTH TO TOP OF BTH INTERPRETATION "B".

A lithologically distinctive rhyolite lava overlies the BTH in BPD71 and several other BPD holes. The lava is feldspar-phyric with a very fine grained groundmass and is frequently sericite-carbonate-pyrite altered with veinlets/stock-works of fine grained silica pyrite and diffuse Pb/Zn sulphide spotting (feldspar replacement). This lava and associated alteration is similar to lavas intersected in NPD004 and NPP215 at North Pinnacles. In the Burns Peak area the lava varies from 40 to 170m thick. If this lava is the same and occurs at a similar stratigraphic level within the Pinnacles Rhyolite then the target at North Pinnacles may be considerably shallower than that proposed in "A".

Brown's Tunnel Host, mixed package of cherty pyritic mudstones, shales, coarse epiclastics, andesitic lavas and disseminated to massive sulphide lenses. The northernmost exposure of the host sequence is along the Boco Road immediately west of the North Pinnacles turnoff.

Central Volcanic Complex, thick felsic pumiceous mass flow. Quartz feldspar porphyry sills are common in the upper part of this unit and the base of the BTH.

STRUCTURE

The BTH is exposed in a north plunging (about 20°) syncline-anticline pair in the Brown's-Thomas Tunnel area 3km south of the proposed drill site. These folds are further complicated by the NNE-trending Pinnacles Shear Zone and proximity to the moderately east dipping Rosebery Fault. The Pinnacles Shear would extend into the drill area but has not been constrained by mapping.

FIGURES

1	Location & regional geology	1:25 000
2	North Pinnacles geology & geochemistry	1:5 000
3	Interpretive geological section BPD71	1:5 000
4	Interpretive geological section 5 387 100N	1:5 000
5	Interpretive geological section 5 387 300N	1:5 000



PASMINCO EXPLORATION

A Division of Pasma Australia Limited

COMPILED BY G.M.B.

DATE: May, 1993

DRAWN BY

REFERENCE

REVISIONS:

DRAWING No.

SCALE



FIG. No.

1

E.L. 2/90 - BOCO

E.L. 8/90 - NORTH PINNACLES

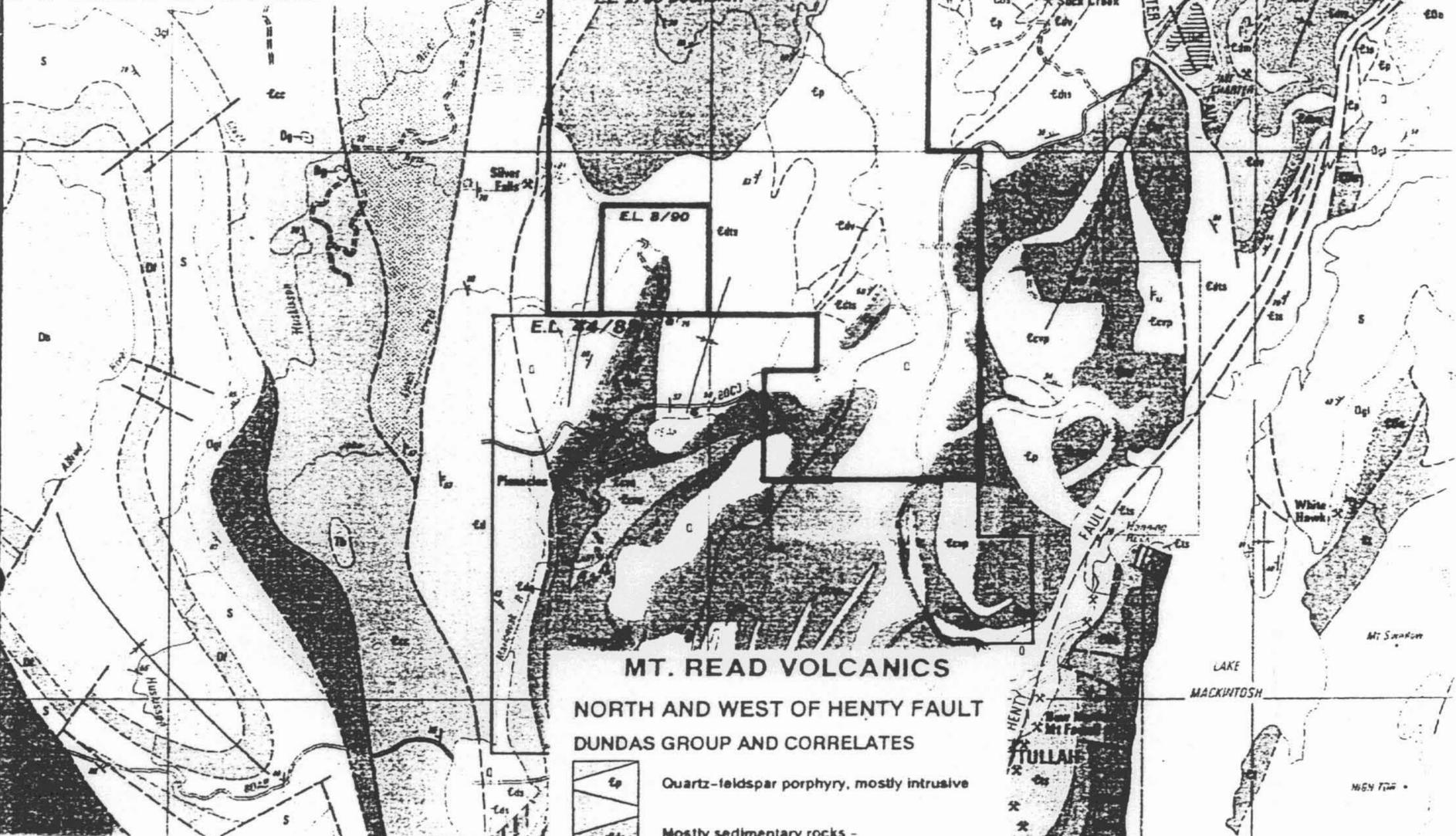
REGIONAL GEOLOGY

FROM MAP 6 OF THE
MT. READ VOLCANICS PROJECT

ACKNOWLEDGEMENT:

Mt. Read Volcanics Project Map adopted from Map 6 - Geological Compilation Map of the Mt. Read Volcanics and Associated Rocks, from Hellyer to South Darwin Peak.

K. D. Corbett B.Sc (HON) PhD and
A. W. McNeill B.Sc (HON) 1988.



MT. READ VOLCANICS

NORTH AND WEST OF HENTY FAULT DUNDAS GROUP AND CORRELATES

- Quartz-feldspar porphyry, mostly intrusive
- Mostly sedimentary rocks - greywacke, siltstone, conglomerate
- Interbedded tufts and sedimentary rocks
- Quartzwacke-slate-siltstone units, e.g. Stitt Quartzite
- Mostly felsic volcanics - mainly tufts
- Mixed felsic and mafic volcanics and epiclastic breccias, Que-Hellyer area
- Basaltic to andesitic volcanics

CENTRAL VOLCANIC COMPLEX

- Mainly feldspar-phyric volcanics - dacite, rhyolite, minor andesite (Ccv)
- Felsic porphyry, mainly intrusive
- Mainly pyroclastic rocks
- Sedimentary rocks, mainly shale and sandstone
- Andesitic volcanics

SOUTH AND EAST OF HENTY FAULT TYNDALL GROUP AND CORRELATES

- Mainly sed. rocks, incl Farrell Slates
- Mainly quartz-feldspar-phyric volcanic and volcanoclastic rocks (Ct)
- Mainly volcanoclastic congl. and sandstone
- Sticht Range Beds - sandstone, siltstone, siliciclastic conglomerate

CAMBRIAN INTRUSIVE ROCKS

- Granite
- Felsic porphyry
- Gabbro
- Ultramafic rocks & serpentinite

PRECAMBRIAN

- Quartzite-slate sequences - correlates of Onah Formation
- Metamorphosed sequences of Tyennan Region

QUATERNARY

- C Glacial deposits, alluvium, etc.

TERTIARY

- Tb Basalt
- Ts Sediments - gravel, sand, clays

JURASSIC

- Jd Dolerite

PERMIAN - CARBONIFEROUS

- Undifferentiated

DEVONIAN

- Dolerite
- Granite

DEVONIAN - SILURIAN

- Dc Bell Shale
- DI Florence Sandstone
- S Silurian

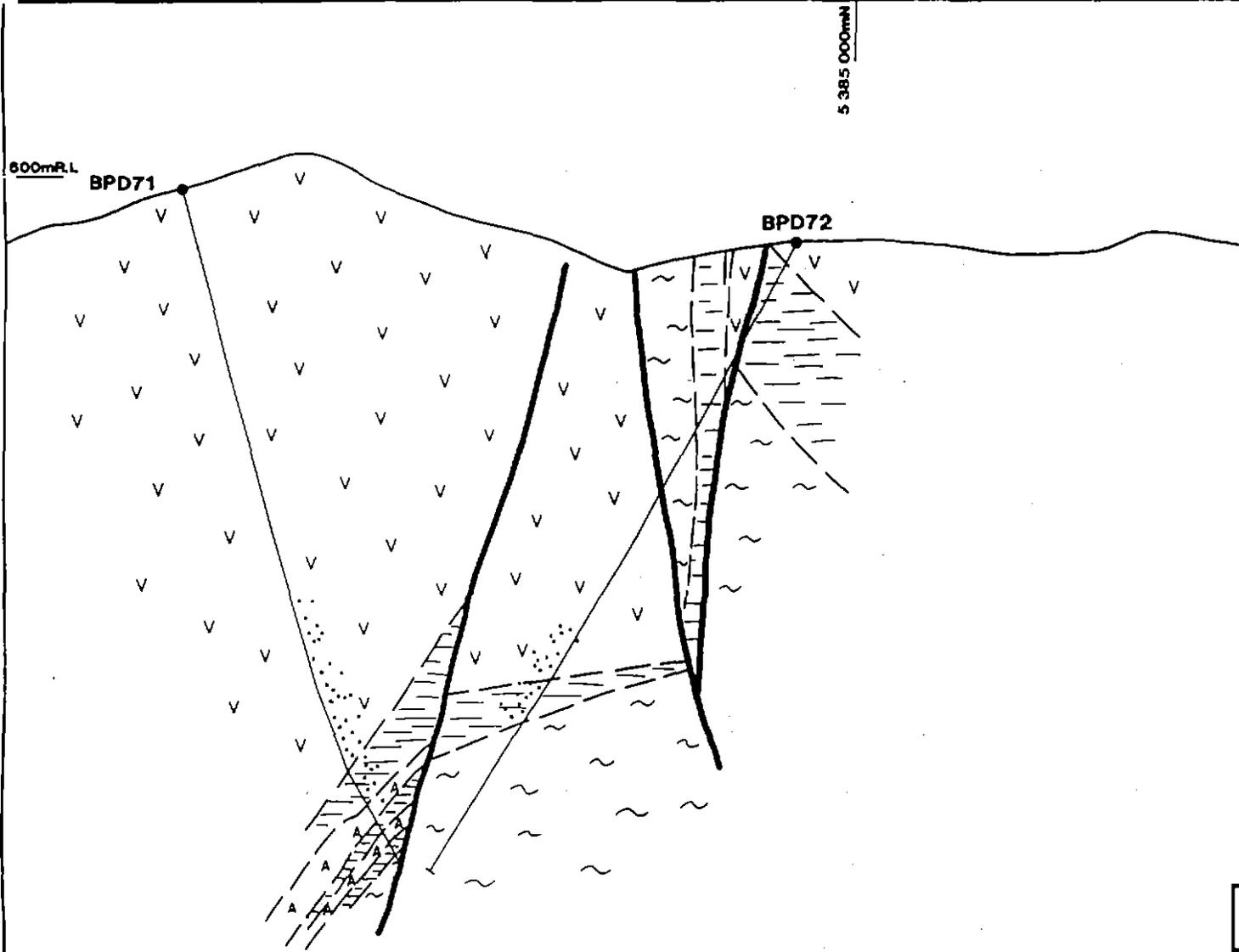
ORDOVICIAN

- Gp GORDON GROUP limestone

EARLY ORDOVICIAN - LATE CAMBRIAN

- Upper sandstone sequence including Pioneer Beds (COou)
- Undifferentiated conglomerate and sandstone (COo)
- Newton Creek Sandstone (COon) - interbedded sandstone siltstone and conglomerate with marine fossils

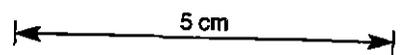
5 cm



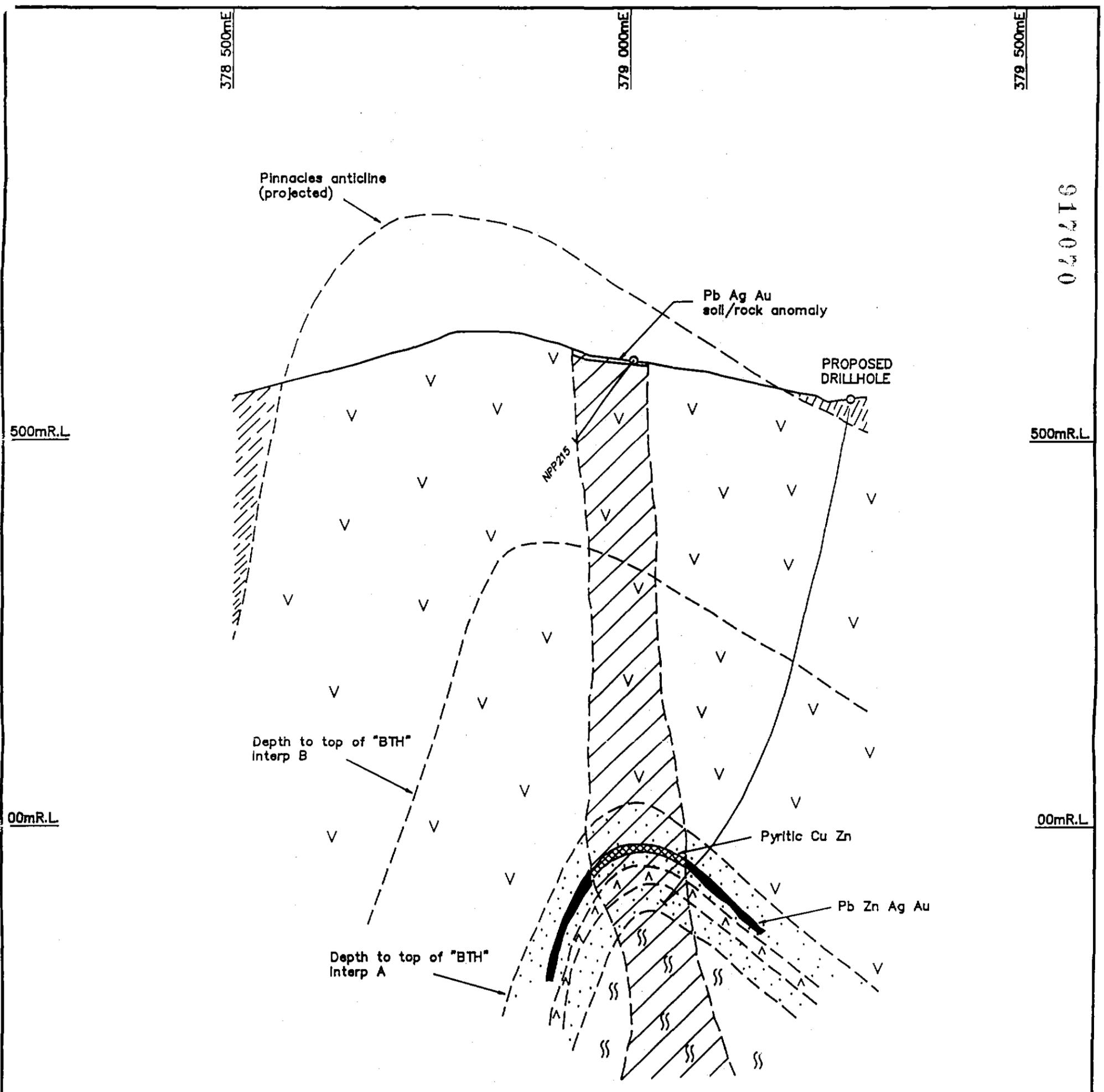
LEGEND

- Quartz-Crystal Sandstone with Black Shale Lenses
- Quartz-Feldspar Porphyry
- Rhyolite Lava
- Bedded Mudstone and Sandstone
- Dacite Lava
- Andesite Lava
- Pumiceous Volcaniclastic
- Mineralisation: Massive, Disseminated
- Probable Fault
- Fault

917068



PASMINCO EXPLORATION <small>A Division of Pasminco Australia Limited</small>	
COMPILED : A.N.L.	E.L. 44/88 - BURNS PEAK JV LEO'S FIND INTERPRETED CROSS SECTION ON BEARING 135°(t) THROUGH BPD71 AND BPD72 LOOKING NORTH
DATE : Oct., 1991	
DRAWN : G.M.B.	
REF. :	
REVISIONS :	
DRAWING No.	SCALE 1:5000
	FIG. No. 3



917070

LEGEND

- White Spur Formation
- Pinnacles Rhyolite
- Andesite
- Brown's Tunnel Host Horizon
- Pumiceous mass flows (CVC)
- Massive sulfide
- Sericite silica carbonate pyrite alteration

5 cm

PASMINCO EXPLORATION <small>A Division of Pasminco Australia Limited</small>	
COMPILED : R.A.P. DATE : Nov. 1993 DRAWN : G.M.B. REFERENCE : REVISIONS :	BOCO JV E.L. 8/90 - NORTH PINNACLES DRILLHOLE PROPOSAL 5 387 100mN SECTION 270' AMG
DRAWING No. NPDS100N	SCALE 1:5000 100 m FIG. No. 4

-500mR.L.

379 000mE

378 500mE

379 000mE

379 500mE

Pinnacles anticline (projected)

Pb Ag Au
soil/rock anomaly

PROPOSED
DRILLHOLE

500mR.L.

500mR.L.

00mR.L.

00mR.L.

Depth to top of "BTH"
Interp B

Pyritic Cu Zn

Pb Zn Ag Au

Depth to top of "BTH"
Interp A

LEGEND

 White Spur Formation

 Pinnacles Rhyolite

 Andesite

 Brown's Tunnel
Host Horizon

 Pumiceous mass
flows (CVC)

 Massive sulfide

 Sericite silica carbonate
pyrite alteration

5 cm

379 500mE

-500mR.L.

379 000mE

PASMINCO EXPLORATION <small>A Division of Pasminco Australia Limited</small>			
COMPILED : R.A.P.	BOCO JV E.L. 8/90 - NORTH PINNACLES DRILLHOLE PROPOSAL 5 387 300mN SECTION 270° AMG		
DATE : Nov., 1993			
DRAWN : G.M.B.			
REFERENCE :			
REVISIONS :			
DRAWING No. NPOS300N	SCALE 1:5000	0 100 m	FIG. No. 5

917071

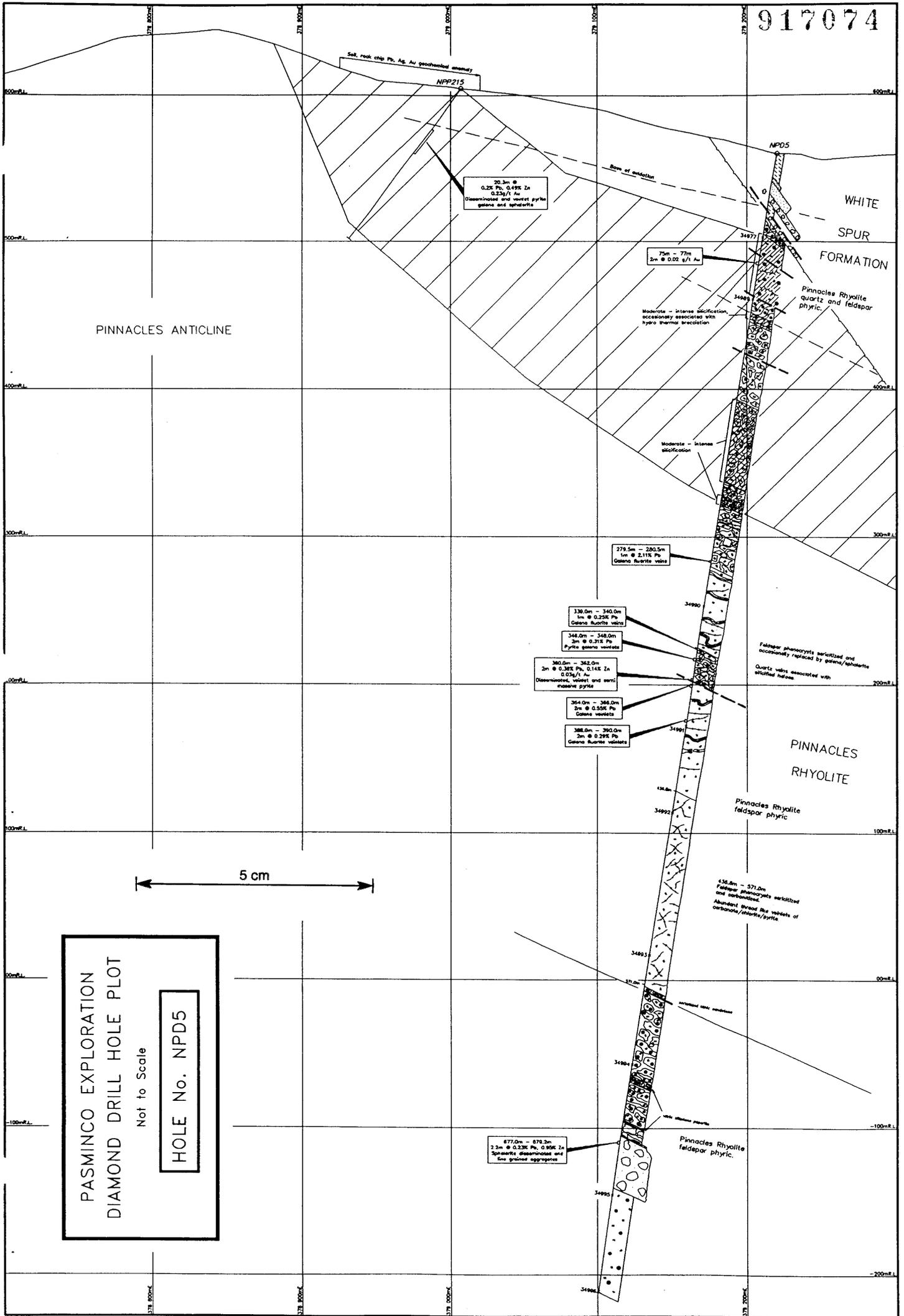
APPENDIX V

Drill Log NPD5

PASMINGO EXPLORATION DIAMOND DRILL CORE RECORD

LOCATION		OBJECTIVE						LOCATION/SURVEY DATA (AMG)						
PROJECT	TASMANIA	Target Zn rich VHMS mineralization in the Brown's Tunnel host sequence (ELW/BE) beneath the Pinnacles Rhyolite.						Grid	AMG	RL Collar m		560 m		
PROSPECT	EL 2/90							Northing m	5387100 N		Bearing Collar		270°	
DESIGNED BY	NORTH PINNACLES							Easting m	379275E		Dip Collar		-80°	
LOGGED BY	R. Pollock							DH Survey Type			Length Hole m		721.6 m	
RELOGGED	-	RESULT						Depth m	Bearing	Dip	Depth m	Bearing	Dip	
COMMENCED	7-12-93	The hole remained in Pinnacles Rhyolite, drilling 737m of this unit. Pervasive silicification intersected between 55-241m. Sulf values in this zone ≤ 0.029/t.						49.9 m	267	-81				
COMPLETED	15-1-94							100 m	261	-81				
DRILLED BY	FL. DL ORTNER							151 m	273	-81				
DRILL RIG	LONGYEAR 44							199 m	278	-81				
SIGNIFICANT INTERSECTIONS														
From m	To m	Interval m	P ₃	Z _w			Comments	250 m	280	-81				
279.50	280.50	1	2.11%				Galena / fluorite veins	301 m	279	-81				
360.00	362.00	2	0.38%	0.14%			Pyritic fault zone	349 m	281	-82				
677.00	679.20	2.2	0.23%	0.95%			Sphalerite in epiblastic	400 m	281	-81				
								451 m	282	-81				
								499 m	280	-81				
								550 m	279	-81				
								607 m	280	-81				
SIGNIFICANT CORE LOSS			POOR GROUND CONDITION ZONES						652 m	286	-81			
From m	To m	% Lost	From m	To m			Condition	700 m	282	-82				
HOLE SIZE		HOLE CONDITIONS AFTER COMPLETION												
Size	Depth m	Collar	STEEL CAP											
HQ	0-51.1m	Steel Casing	3m HW.											
NQ	51.1-721.6	PVC Casing	NIL											
		Ground Water	-											
		Wedge	-											
		Drill Pad	No rehabilitation, site on HWD track.											

917073



PASMINCO EXPLORATION
 DIAMOND DRILL HOLE PLOT
 Not to Scale
 HOLE No. NPD5

PINNACLES ANTICLINE

WHITE SPUR FORMATION

PINNACLES RHYOLITE

20.3m @
 0.2% Pb, 0.49% Zn
 0.23g/t Au
 Disseminated and vuggy pyrite
 galena and sphalerite

75m - 77m
 Zn @ 0.02 g/t Au

278.5m - 280.5m
 1m @ 2.11% Pb
 Galena fluorite veins

330.0m - 340.0m
 1m @ 0.25% Pb
 Galena fluorite veins

348.0m - 348.0m
 Zn @ 0.21% Pb
 Pyrite galena veins

362.0m - 362.0m
 Zn @ 0.38% Pb, 0.14% Zn
 0.03g/t Au
 Disseminated, vuggy and semi
 massive pyrite

364.0m - 368.0m
 Zn @ 0.55% Pb
 Galena veins

388.0m - 390.0m
 Zn @ 0.29% Pb
 Galena fluorite veins

477.0m - 478.2m
 2.3m @ 0.33% Pb, 0.15% Zn
 Sphalerite disseminated and
 few galena aggregates

450.0m - 571.0m
 Feldspar phenocrysts sericitized
 and carbonated
 Abundant broad flat veinlets of
 calcite/chlorite/pyrite

Feldspar phenocrysts sericitized and
 occasionally replaced by galena/sphalerite
 Quartz veins associated with
 sericitized feldspar

Pinnacles Rhyolite
 feldspar phytic

Pinnacles Rhyolite
 feldspar phytic

5 cm

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

Page 1 of 23

DESCRIPTION		GRAPHIC			CODES				
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT	
0.00 - 16.30 m SILTSTONE Grey, Fine grained, Laminated, Moderately Oxidised, 0.00 - 16.30 m CONTAINING LAMINAE OF SANDSTONE Cream, Medium grained, Crystal, Quartz phytic, Feldspar phytic, Slightly Oxidised, Sandstone bands <50mm thick, fine to medium grained, composed of crystal fragments.	DISSEMINATED, minor pyrite Pyrite mainly in sandstone lenses..	0		↑	BEDDING, A 80, Younging uphole.	S silt S sst	ss ss	ox ox	
		10		↑	BEDDING, A 50, Younging uphole, Uphole facing indicated from grading and load/flame structures.		ss		
16.30 - 19.00 m SANDSTONE Grey, Green, Fine grained, Bedded, Slightly Oxidised, CONTACT: Gradational,		20					S sst		ox
19.00 - 27.70 m SANDSTONE Grey, Green, Medium grained, Coarse grained, Massive, Crystal, Quartz phytic, Feldspar phytic, Slightly Oxidised, CONTACT: Gradational,						BEDDING, A 75,	S sst	ss	ox
	sphalerite in veinlets, Sphalerite galena in fine discontinuous veinlets and spots..	30					S sst		ox
27.70 - 33.00 m SANDSTONE Grey, Medium grained, Coarse grained, Upwards fining sequence, Matrix supported, Crystal, Lithic, Slightly Oxidised, Clasts to 75mm, polymict, subrounded, mainly felsic volcanics, some pyritic. CONTACT: Conformable abrupt,						S sst		ox	
33.00 - 39.40 m SILTSTONE Dark, Grey, Fine grained, Laminated, Base of oxidation at 34.8m. CONTACT: Faulted, Possible fault movement on contact	DISSEMINATED, 0.5% pyrite Fine disseminated pyrite on bedding plus coarser				BEDDING, A 80,	S sst	ss		

917075

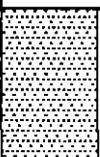
PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

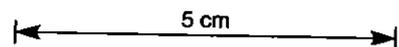
HOLE No. NPDS

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

Page 2 of 23

DESCRIPTION	MINERALISATION	GRAPHIC			CODES				
		Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT	
<p>SILTSTONE Dark, Grey, Fine grained, Laminated, base of oxidation at 34.8m. CONTACT: Faulted, Possible fault movement on contact. CONTAINING LAMINAE OF SANDSTONE Cream, Medium grained, Coarse grained, Poorly sorted, Crystal, Lithic,</p>	<p>Fine disseminated pyrite on bedding plus coarser pyrite grains on joint faces..</p>				<p>FOLD, Small scale folding associated with faulting and cleavage development.</p>		fold	ss	
<p>39.40 - 44.00 m CONGLOMERATE Cream, Pink, Very coarse grained, Poorly sorted, Polymict, Crystal, Clasts <200mm of feldspar/quartz phytic lava (Pinnacles Rhyolite), black siltstone, sericitized glass and coarse quartz feldspar crystal sandstone. Conglomerate is clast to matrix supported. CONTACT: Conformable abrupt, WITH MINOR SANDSTONE Cream, Medium grained, Bedded, Crystal, Lithic, CONTAINING LAMINAE OF SILTSTONE Dark, Grey, Fine grained, Laminated, Some black siltstone may be rafts within a mass flow conglomerate.</p>	<p>DISSEMINATED, minor pyrite Disseminated in matrix and as fine grained blebs..</p>	40			<p>BEDDING, A 45.</p>	5	cong		
<p>44.00 - 55.60 m ACID LAVA Cream, Brown, Fine grained, Hyaloclastitic, Porphyritic, Feldspar phytic, Quartz phytic, Slightly Sericitised, Slightly Albitised, Feldspar more abundant than quartz phenocrysts, both <2mm. Hyaloclastite breccia interpreted as quenched upper margin of flow. Minor disseminated and blebby pyrite. CONTACT: Gradational,</p>		50		<p>=====</p>	<p>FAULT, A 45, Chlorite, Carbonate.</p> <p>FAULT, A 30, Chlorite, Carbonate.</p>	L	La	ser alb	
<p>55.60 - 70.60 m ACID LAVA Brown, Fine grained, Massive, Feldspar phytic, Quartz phytic, Moderately Silicified, Mainly coherent massive lava with minor hyaloclastite breccias. CONTACT: Faulted,</p>		60			<p>PRIMARY FABRIC, A 40. Alternating colour banding (chlorite/albite?) on a scale of 1-2cm.</p>		L	La	sil
<p>70.60 - 71.00 m ACID LAVA Cream, Grey, Fine grained, Sheared, Feldspar phytic, Quartz</p>		70			<p>FAULT, A 35, Quartz, Sericite, Fault zone</p>			so	



917076

PASMINCO EXPLORATION

DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

Page 3 of 23

DESCRIPTION

GRAPHIC

CODES

LITHOLOGY & ALTERATION

MINERALISATION

Depth

Lithology

Structures

STRUCTURES

LITH

STR

ALT

70.60 - 71.00 m
ACID LAVA Cream, Grey, Fine grained, Sheared, Feldspar phyrlic, Quartz phyrlic, Moderately Sericitised, CONTACT: Faulted,

71.00 - 97.90 m
ACID LAVA Grey, Yellow, Fine grained, Massive, Brecciated, Feldspar phyrlic, Quartz phyrlic, Intensely Silicified, Moderately Sericitised, Massive with localized hydrothermal? brecciation, the latter associated with more intense silicification. Alteration mainly silicification with minor sericitization, sericite with fine leucoxene spotting. CONTACT: Faulted,

STRINGER, in veinlets, carbonate trace sphalerite pyrite Carbonate veinlets irregular 2mm wide. Minor fluorite in vein at 73.6m..

FAULT, F 35, QUARTZ, Sericite, Fault zone associated with sericite alteration with quartz veining with trace galena/sphalerite.

L La

fit

sil
ser

5 cm

97.90 - 108.50 m
ACID LAVA Cream, Green, Fine grained, Flow banded, Brecciated, Feldspar phyrlic, Quartz phyrlic, Slightly Albitised, Slightly Chloritised, Flow banding 0 - 80 LCA. Abundant leucoxene spotting. Carbonate veinlets. CONTACT: Gradational,

STRINGER, in veinlets, carbonate

L La

alb
chl

917077

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION	GRAPHIC			STRUCTURES	CODES				
	LITHOLOGY & ALTERATION	MINERALISATION	Depth		Lithology	Structures	STRUCTURES	LITH	STR
108.50 - 113.40 m ACID LAVA Pale, Grey, Fine grained, Flow banded, Brecciated, Feldspar phyrlic, Intensely Silicified, Feldspar phenocrysts <2mm, quartz phenocrysts not apparent possibly due to alteration. CONTACT: Gradational,	STRONGER. quartz pyrite trace sphalerite Fine chalcedonic silica in veins and flooding rock..	-110				L La	fit	sil	
113.40 - 115.30 m ACID LAVA Green, Fine grained, Flow banded, Flow brecciated, Feldspar phyrlic, Moderately Chloritised, CONTACT: Gradational,						L La			chl
115.30 - 135.90 m ACID LAVA Yellow, Pink, Fine grained, Flow brecciated, Flow banded, Feldspar phyrlic, Moderately Sericitised, Slightly Silicified, Breccia is monomict comprising feldspar phyrlic rhyolite, blocks to 15cm, variable texture from massive to flowbanded. Sericitization mainly of matrix (after glass), silicification primarily of blocks. Feldspar phenocrysts <2mm, some rhyolite nearly aphyric. CONTACT: Faulted,		-120							
		-130							
		-140			FALLT. A 30. Mainly broken core associated with sericitization.				
135.90 - 157.80 m ACID LAVA Pink, Cream, Fine grained, Flow brecciated, Feldspar phyrlic, Moderately Albitised, Moderately Silicified, CONTACT: Gradational,	STRONGER. trace sphalerite Sphalerite in scattered irregular veinlets..					L La	fit	alb sil	

5 cm

917078

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

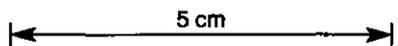
HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		140						
		150						
157.80 - 169.00 m ACID LAVA Pink, Green, Fine grained, Flow brecciated, Feldspar phryic, Slightly Albitised, Slightly Chloritised, Breccia of fine grained feldspar phric rhyolite, blocks variably textured include massive/flowbanded/glass (after sericite). CONTACT: Gradational,		160				L La		alb chl
169.00 - 225.30 m ACID LAVA Grey, Fine grained, Flow brecciated, Intensely Silicified,	STRONGER, trace sphalerite trace galena Sphalerite and galena occurring in scattered irregular veinlets and diffuse spots (2mm)...	170				L La		sil



917079

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		180		-----	FALLT. R 35, Sericite, Carbonate.		fit	
		190			FALLT. R 5.		fit	
		200						
		210						

5 cm

917080

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

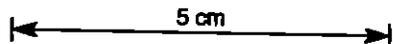
HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES					
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT		
		210			<div data-bbox="1627 408 1823 489" style="border: 1px solid black; padding: 2px;"> FRUIT, A 80, Associated with quartz veining and silicification. </div>		fit			
		220								
		230							L La	alb chl
		240							L La	sil
		245.20							L La	ser chl



225.30 - 234.60 m
ACID LAVA Pink, Green, Medium grained, Hyaloclastitic, Feldspar phyrlic, Slightly Albitised, Slightly Chloritised, May be a flow breccia or hyaloclastite, fragment boundaries are diffuse.
CONTACT: Gradational,

234.60 - 241.10 m
ACID LAVA Pale, Grey, Medium grained, Hyaloclastitic, Feldspar phyrlic, Highly Silicified, Same lithology as above but different alteration style. Minor pink albitized zones.

241.10 - 245.20 m
ACID LAVA Pink, Green, Medium grained, Flow brecciated, Feldspar phyrlic, Slightly Sericitised, Slightly Chloritised, Clasts <50mm, all feldspar phyrlic but texturally variable, include chloritized glass, massive and flow banded lava.
CONTACT: Gradational,

917081

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION	MINERALISATION	GRAPHIC			CODES			
		Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
<p>Flow brecciated lava: CONTACT: Gradational, 245.20 - 283.00 m ACID LAVA Pink, Green, Medium grained, Flow brecciated, Feldspar phyrlic, Moderately Chloritised, Slightly Sericitised, Blocks <100mm, feldspar phyrlic, predominantly massive, some with quartz amygdales. Bleached and slightly silicified zone around quartz veining between 254.6-259.7m, veins at 80LCA. Between 270-283m lava breccia is dominated by fine grained lava blocks. CONTACT: Faulted,</p>								
		250				L La		chl ser
	<p>VEIN, 1% galena carbonate Veined zone with haloe of bleaching and silicification from 254.6-259.7m..</p>	250			VEIN, A 90,		vein	
		270						
	<p>VEIN, 5% galena fluorite Bleached and silicified haloe around veining</p>	280			VEIN, A 90,		vein	

5 cm

917082

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
	Bleached and silicified haloes around veining between 277.6-280.0m..	280			VEIN, A 90.		vein	
					FALLT, A 70, Associated with quartz veining.	L La	fit	chl
					FALLT, A 30.		fit	
					PRIMARY FABRIC, A 30, Flow banding.		so	
283.00 - 338.90 m ACID LAVA Grey, Green, Fine grained, Massive, Flow banded, Feldspar phyric, Slightly Chloritised, Sparsely feldspar phyric (<2mm). Feldspars frequently sericitized and occasionally replaced by galena/sphalerite. Veined zones with haloes of bleaching and silicification between 299.50-300.60m, 318.80-320.30m, 327.50-330.20m and 335.40-337.10m. CONTACT: Gradational.								
	VEIN, quartz carbonate trace galena Veins at 90LCR, selvage of hydrothermal brecciation, haloe of bleaching around veining between 299.50-300.60m..	300			PRIMARY FABRIC, A 30, Flow banding.		so	
		310						

5 cm

917083

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

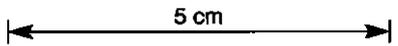
HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

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DESCRIPTION		GRAPHIC			CODES				
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT	
		320							
	STRINGER, galena in veinlets. Minor galena veinlets with narrow haloes of dark grey very fine grained sulfide (galena?)..	330							
338.80 - 344.80 m ACID LAVA Pink, Green, Flow brecciated, Feldspar phyrlic, Slightly Sericitised, Slightly Chloritised, Lava fragments texturally variable, chlorite after glass, massive and flow banded. CONTACT: Gradational,	STRINGER, trace galena in veinlets, fluorite in veinlets. Scattered veinlets of fluorite, galena, quartz and carbonate..	340					L La		ser chl
344.80 - 349.80 m ACID LAVA Grey, Green, Fine grained, Flow banded, Massive, Feldspar phyrlic, Slightly Sericitised, Slightly Chloritised, Feldspar phenocrysts sericitized. CONTACT: Gradational,	STRINGER, trace galena in veinlets, pyrite trace sphalerite Scattered veinlets through interval..						L La		ser chl
349.80 - 352.00 m	STRINGER, galena in veinlets, sphalerite in	350				L La			



917084

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
	STRINGER, trace galena in veinlets, trace fluorite in veinlets, Hydraulic fracturing. Fine grained galena pervading the wall rock with a 1cm wide halo..	390						
		400						
	STRINGER, trace fluorite in veinlets.	410						
		420						

5 cm

917086

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES				
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT	
		420							
					BROKEN CORE.			fit	
					FAULT, A 20.			bk	
		430			FAULT, A 80, Fault associated with sericitization and quartz veining.			fit	
					PRIMARY FABRIC, A 35, Flow banding.			so	
				PRIMARY FABRIC, A 40, Flow banding.			so		
436.80 - 571.00 m ACID LAVA Cream, Pink, Fine grained, Massive, Feldspar phytic, Moderately Silicified, Feldspars phenocrysts <2mm, frequently sericitized and carbonitized. Rock massive except for abundant, irregular, thread-like carbonate/chlorite/pyrite veinlets. CONTACT: Gradational,		440				L La		sil	
				PRIMARY FABRIC, A 55, Flow banding.			so		
		450							

5 cm

917087

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
	<p>VEIN, carbonate fluorite Vein LCR 65..</p> <p>STRANGER, carbonate Carbonate sericite veinlets with minor pyrite..</p>	<p>460</p> <p>470</p> <p>480</p> <p>490</p>		<p>FRACTURE, R 69, Quartz carbonate vein.</p> <p>FRACTURE, R 70, Quartz carbonate vein.</p>			<p>frac</p> <p>frac</p>	

5 cm

917088

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NP05**

PROJECT: NORTH PINNACLES

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		490						
	STRONGER, quartz carbonate trace galena Veinlets 70-80LDR, associated with bleached halos..							
	STRONGER, trace sphalerite Dark brown sphalerite, disseminated and as veinlets..	500						
	STRONGER, trace galena trace sphalerite	510						
		520						
					FRACURE, A 80, Quartz carbonate chlorite vein.		frac	
					FAULT, D 30, Quartz vein.		fit	
	STRONGER, quartz carbonate trace galena Galena disseminated and veinlets. Veinlets 60-90LDR..				FAULT, A 70, Fault associated with sericitization and quartz/carbonate/galena		fit	

5 cm

917089

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES				
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT	
	disseminated and veinlets. Veinlets 60-90LCA..				sericification and quartz/carbonate/galena veining.		fit		
		530							
		540							
		550				FALLT, A 50, Quartz carbonate vein.		fit	
		560			FALLT, A 80, Quartz carbonate vein.		fit		

5 cm

917090

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION	MINERALISATION	GRAPHIC		STRUCTURES	CODES		
		Depth	Lithology		Structures	LITH	STR
LITHOLOGY & ALTERATION							
		560					
				FALLT, A 15, Quartz carbonate vein.		fit	
		570					
571.00 - 573.60 m ACID LAVA Pink, Cream, Medium grained, Brecciated, Feldspar phytic, Slightly Chloritised, Slightly Albitised, Brecciation may be hydrothermal. Feldspar phenocrysts <2mm. CONTACT: Gradational,				FALLT, A 40, Fault associated with sericitization and a trace of pyrite.	L La	fit	chl alb
573.60 - 573.90 m ACID VOLCANICLASTIC Cream, Coarse grained, Matrix supported, Rhyolite fragments in a medium grained, sericitized quartz/feldspar/lithic matrix.				FALLT, A 75, Quartz carbonate vein.	V Va		ser
573.90 - 673.00 m ACID VOLCANICLASTIC Pink, Cream, Very coarse grained, Flow brecciated, Quartz phytic, Feldspar phytic, Slightly Sericitised, Phenocrysts <2mm. Breccia blocks <300mm, include massive/flowbanded/sericitized glass. All blocks quartz and feldspar phytic, interpreted to be different products of a single rhyolitic volcanic event. CONTACT: Gradational, MIXED WITH SILTSTONE Fine grained, Peperitic, Vitric, Peperite occurring between 632.60-636.00m and 663.40-663.60m.	STRANGER, quartz trace sphalerite Irregular veinlets..						
	CLAST, sphalerite clast or bleb of sphalerite, 2cm diameter..	580					
				FALLT, A 5.		fit	
		590					

5 cm

917091

PRSMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		500						
					Fault, A 20. Sericitized with minor pyrite.		fit	
		510						
					Fault, A 20.		fit	
					Fault, Sericitized and pyritic with calcite veins.		fit	
		520						
		530						

5 cm

917092

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		630						
		640						
		650					fit	
		660						
					BEDDING, A 80. Facing uphole. FAULT, A 30. Bleached and sericitized zone associated with calcite veins.			

5 cm

917093

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION	MINERALISATION	GRAPHIC			STRUCTURES	CODES		
		Depth	Lithology	Structures		LITH	STR	ALT
LITHOLOGY & ALTERATION					associated with calcite veins.			
<p>673.00 - 673.50 m SANDSTONE GRADING TO SILTSTONE Cream, Fine grained, Coarse grained, Crystal, Vitric, Slightly Sericitised, CONTACT: Gradational,</p>		670	↑			ss	
<p>673.50 - 708.90 m ACID VOLCANICLASTIC MASS FLOW Pink, Cream, Very coarse grained, Poorly sorted, Polymict, Slightly Sericitised, Blocks to 1m diameter? Polymict, includes sericitized glassy quartz feldspar phyric rhyolite, silicified feldspar phyric rhyolite and pink flow banded rhyolite. Matrix, medium grained sandstone. CONTACT: Faulted,</p>	<p>DISSEMINATED. 0.5% sphalerite trace chalcopurite in veinlets. Sphalerite occurring as diffuse fine grained cream blebs/spots..</p>	680				V Va mf		ser
		690						
		700						

5 cm

917094

PASMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		700						
708.90 - 781.60 m ACID LAVA Brown, Cream, Fine grained, Massive, Flow banded, Feldspar phytic, Quartz phytic, Slightly Chloritised, Sparsely feldspar>quartz phytic, phenocrysts <2mm. Colour mainly pinkish brown with cream-green coloured haloes around quartz/chlorite/carbonate veins. Abundant calcite veinlets <1mm on joints and fractures.		710		--- FAULT, A 50. Sericitized and calcite veined.	L La	fit	chl	
					--- PRIMARY FABRIC, A 50. Flow banding.			so
		720						
					--- PRIMARY FABRIC, A 80. Flow banding.	so		
		730						

5 cm

917095

PRSMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

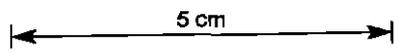
PROJECT: NORTH PINNACLES

Vertical Scale 1 : 250

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		740						
		750						
		760						
		770						

5 cm



917096

PRSMINCO EXPLORATION
DIAMOND DRILL CORE LOG

HOLE No. **NPDS**

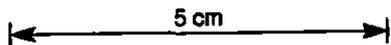
PROJECT: NORTH PINNACLES

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DESCRIPTION		GRAPHIC			CODES			
LITHOLOGY & ALTERATION	MINERALISATION	Depth	Lithology	Structures	STRUCTURES	LITH	STR	ALT
		770						
		780						
		790						
		800						

5 cm



917097

SPECIFIC GRAVITY

depth	value	formation	lithology
235.50	2.60	PR	La
265.60	2.65	PR	La
403.60	2.61	PR	La
496.00	2.60	PR	La
577.60	2.67	PR	Va
679.60	2.68	PR	Va
724.60	2.66	PR	La
778.30	2.65	PR	La

NPD5 MAGNETIC SUSCEPTIBILITY

depth	value	formation	lithology
6.80	0.12	WSF	slt
7.80	0.50	WSF	slt
10.80	0.15	WSF	slt
13.60	0.16	WSF	slt
16.70	0.08	WSF	sst
18.50	0.22	WSF	sst
19.80	0.42	WSF	sst
22.80	0.21	WSF	sst
25.00	2.31	WSF	sst
27.70	0.37	WSF	sst
31.00	0.17	WSF	sst
33.50	0.08	WSF	slt
34.80	0.24	WSF	slt
37.80	0.16	WSF	slt
39.40	0.40	WSF	cong
40.80	0.04	WSF	cong
43.80	0.11	WSF	cong
46.80	0.16	PR	La
49.80	0.08	PR	La
51.10	0.28	PR	La
52.60	0.10	PR	La
55.60	0.10	PR	La
56.60	0.46	PR	La
58.60	0.20	PR	La
61.10	0.24	PR	La
63.40	0.27	PR	La
64.50	0.50	PR	La
65.20	0.36	PR	La
67.60	0.19	PR	La
70.60	0.44	PR	La
73.20	0.23	PR	La
76.30	0.47	PR	La
82.60	0.04	PR	La
93.40	0.21	PR	La
95.90	0.04	PR	La
97.60	0.13	PR	La
100.60	0.13	PR	La
103.60	0.19	PR	La
108.50	0.14	PR	La
111.60	0.10	PR	La
113.80	0.22	PR	La

117.00	0.56	PR	La
118.60	0.05	PR	La
124.60	0.02	PR	La
127.60	0.04	PR	La
130.40	0.15	PR	La
133.40	0.16	PR	La
134.60	0.06	PR	La
135.40	0.15	PR	La
135.70	0.13	PR	La
137.90	0.14	PR	La
139.60	0.01	PR	La
142.00	0.14	PR	La
143.50	0.03	PR	La
145.60	0.09	PR	La
148.60	0.02	PR	La
151.60	0.09	PR	La
154.60	0.13	PR	La
157.60	0.13	PR	La
160.60	0.11	PR	La
163.60	0.01	PR	La
165.80	0.06	PR	La
166.60	0.05	PR	La
169.60	0.02	PR	La
172.60	0.09	PR	La
178.60	0.02	PR	La
180.80	0.05	PR	La
183.60	0.02	PR	La
183.70	0.08	PR	La
184.60	0.02	PR	La
185.90	0.05	PR	La
187.60	0.18	PR	La
193.60	0.01	PR	La
196.60	0.01	PR	La
202.60	0.03	PR	La
203.10	0.05	PR	La
208.60	0.11	PR	La
211.60	0.03	PR	La
214.60	0.10	PR	La
215.90	0.04	PR	La
217.60	0.05	PR	La
219.90	0.12	PR	La
220.00	0.06	PR	La
223.10	0.03	PR	La
226.20	0.07	PR	La
229.30	0.14	PR	La
232.40	0.01	PR	La
235.50	0.01	PR	La
238.60	0.08	PR	La
241.60	0.08	PR	La
244.60	0.14	PR	La
247.60	0.06	PR	La
250.60	0.10	PR	La
253.60	0.07	PR	La
256.60	0.10	PR	La
259.00	0.04	PR	La
259.80	0.19	PR	La
262.60	0.10	PR	La
265.60	0.12	PR	La
268.60	0.16	PR	La

271.60	0.09	PR	La
274.60	0.10	PR	La
277.60	0.08	PR	La
280.60	0.90	PR	La
283.60	0.02	PR	La
286.60	0.02	PR	La
289.60	0.06	PR	La
292.60	0.06	PR	La
295.60	0.05	PR	La
298.60	0.06	PR	La
301.60	0.06	PR	La
304.60	0.05	PR	La
307.60	0.09	PR	La
310.60	0.07	PR	La
313.60	0.02	PR	La
316.60	0.07	PR	La
319.60	0.07	PR	La
322.60	0.04	PR	La
325.60	0.07	PR	La
328.60	0.06	PR	La
331.60	0.03	PR	La
334.60	0.05	PR	La
337.60	0.22	PR	La
340.60	0.07	PR	La
343.60	0.02	PR	La
346.60	0.02	PR	La
349.60	0.04	PR	La
352.60	0.01	PR	La
355.60	0.01	PR	La
358.60	0.05	PR	La
361.60	0.04	PR	La
364.60	0.04	PR	La
367.60	0.03	PR	La
370.60	0.10	PR	La
373.60	0.07	PR	La
375.30	0.06	PR	La
378.40	0.06	PR	La
379.60	0.04	PR	La
382.60	0.06	PR	La
385.60	0.06	PR	La
388.60	0.09	PR	La
391.60	0.05	PR	La
394.60	0.07	PR	La
397.60	0.03	PR	La
400.60	0.03	PR	La
403.60	0.03	PR	La
406.60	0.07	PR	La
409.60	0.08	PR	La
410.40	0.05	PR	La
412.60	0.05	PR	La
415.60	0.04	PR	La
418.60	0.08	PR	La
421.60	0.06	PR	La
424.60	0.06	PR	La
426.40	0.03	PR	La
429.50	0.05	PR	La
430.60	0.03	PR	La
433.60	0.02	PR	La
434.40	0.02	PR	La
436.60	0.01	PR	La
439.60	0.02	PR	La
442.60	0.05	PR	La
445.60	0.01	PR	La

448.60	0.01	PR	La
449.20	0.01	PR	La
451.60	0.02	PR	La
454.60	0.02	PR	La
457.60	0.02	PR	La
460.60	0.01	PR	La
461.60	0.02	PR	La
463.60	0.01	PR	La
466.60	0.26	PR	La
469.60	0.07	PR	La
472.20	0.06	PR	La
475.20	0.09	PR	La
478.30	0.01	PR	La
481.30	0.02	PR	La
484.00	0.04	PR	La
485.40	0.02	PR	La
486.10	0.01	PR	La
487.60	0.01	PR	La
490.60	0.01	PR	La
493.60	0.01	PR	La
496.60	0.78	PR	La
499.60	0.01	PR	La
502.60	0.02	PR	La
505.60	0.11	PR	La
508.40	0.11	PR	La
511.60	0.03	PR	La
514.60	0.03	PR	La
517.60	0.01	PR	La
520.60	0.04	PR	La
523.60	0.05	PR	La
526.60	0.01	PR	La
527.60	0.01	PR	La
529.60	0.03	PR	La
532.60	0.03	PR	La
535.60	0.12	PR	La
538.60	0.04	PR	La
541.60	0.05	PR	La
544.60	0.03	PR	La
547.60	0.09	PR	La
550.60	0.04	PR	La
553.60	0.04	PR	La
556.60	0.04	PR	La
559.60	0.02	PR	La
562.60	0.03	PR	La
565.60	0.07	PR	La
571.60	0.02	PR	La
574.60	0.07	PR	Va
577.60	0.06	PR	Va
579.90	0.04	PR	Va
583.00	0.04	PR	Va
586.10	0.01	PR	Va

917101

589.20	0.01	PR	Va
595.60	0.04	PR	Va
598.50	0.05	PR	Va
601.60	0.24	PR	Va
604.60	0.19	PR	Va
607.60	0.03	PR	Va
610.60	0.05	PR	Va
613.60	0.02	PR	Va
616.60	0.03	PR	Va
619.60	0.03	PR	Va
622.60	0.05	PR	Va
625.60	0.07	PR	Va
628.60	0.03	PR	Va
631.60	0.03	PR	Va
634.60	0.22	PR	Va
637.60	0.05	PR	Va
640.60	0.12	PR	Va
643.60	0.05	PR	Va
646.60	0.08	PR	Va
649.60	0.07	PR	Va
652.60	0.10	PR	Va
655.60	0.04	PR	Va
658.60	0.08	PR	Va
661.60	0.04	PR	Va
664.60	0.07	PR	Va
667.60	0.08	PR	Va
670.60	0.01	PR	Va
673.60	0.03	PR	Va
676.60	0.09	PR	Va
682.60	0.06	PR	Va
684.90	0.06	PR	Va
687.80	0.03	PR	Va
690.90	0.15	PR	Va
694.00	0.15	PR	Va
697.10	0.07	PR	Va
700.30	0.10	PR	Va
703.60	0.12	PR	Va
706.60	0.02	PR	Va
709.60	0.07	PR	La
712.60	0.11	PR	La
715.50	0.10	PR	La
718.60	0.20	PR	La
721.60	0.25	PR	La
724.60	0.18	PR	La
727.60	0.10	PR	La
730.60	2.27	PR	La
733.60	1.35	PR	La
736.60	0.13	PR	La
739.60	0.12	PR	La
742.60	0.11	PR	La
745.60	0.10	PR	La
748.60	0.11	PR	La
751.60	0.11	PR	La
754.60	0.14	PR	La
757.60	0.08	PR	La
760.60	0.24	PR	La
763.60	0.16	PR	La
766.60	3.30	PR	La
769.60	1.46	PR	La
772.60	0.17	PR	La
775.60	0.17	PR	La
778.60	0.07	PR	La
781.60	0.03	PR	La

SAMPLED INTERVALS NPD5

SAMP	FROM	TO
35825	73.00	75.00
35826	75.00	77.00
35827	77.00	79.00
35828	79.00	81.00
35829	81.00	83.00
35830	83.00	85.00
35831	85.00	87.00
35832	87.00	89.00
35833	89.00	91.00
35834	91.00	93.00
35835	93.00	95.00
35836	95.00	97.00
35837	97.00	99.00
34989	100.00	100.20
35838	109.00	111.00
35839	111.00	113.50
35840	169.00	171.00
35841	171.00	173.00
35842	173.00	175.00
35843	175.00	177.00
35844	177.00	179.00
35845	179.00	181.00
35846	218.00	220.00
35847	220.00	222.00
35848	234.00	236.00
35849	236.00	238.00
35850	279.50	280.50
34990	310.30	310.50
35851	339.00	340.00
35852	346.00	348.00
35853	360.00	362.00
35854	362.00	364.00
35855	364.00	366.00
35856	386.00	388.00
35857	388.00	390.00
34991	392.20	392.40
34992	451.60	451.80
34993	549.20	549.40
34994	624.00	624.20
35858	676.00	677.00
35859	677.00	678.00
35860	678.00	679.20
34995	713.60	713.80
34996	778.60	778.80

APPENDIX VI

Analytical Report NPD5 Cu Pb Zn Ag Au As



ANALABS

A Division of Inchoape Testing Services (Australia) Pty. Ltd.
A.C.N. 604 591 664

917105

Phone (004) 316837

14 Thirkell St. COOEE TAS 7320

Fax (004) 316890

ANALYTICAL REPORT No.

111310160.10034

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

Pasminco Exploration
P.O. Box 886
BURNIE TAS 7320

ORDER No.

PROJECT

0247

3006

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19/03/94

1

36

SAMPLE NUMBERS

SAMPLE DESCRIPTION

ELEMENT/METHOD

035825/860

SC Prep : GP033

Cu, Pb, Zn, Ag/GA140

035825/860

SC Prep :

Au, Au(R)/GE007

035/860

SC Prep :

As/GA140

Pb, Zn/GA104

RESULTS
TO

Mr F Fitzgerald
Pasminco Exploration
P.O. Box 886
BURNIE TAS 7320

RESULTS
TO

Roger Fallick Geological Pty Ltd
Mineral Exploration Contractor
C/- Post Office
MILBROT TAS 7310

RESULTS
TO

REMARKS

AUTHORISED OFFICER

ANALYTICAL DATA

SAMPLE PREFIX

REPORT No.

REPORT DATE

CLIENT ORDER No.

PAGE

SAMPLE PREFIX		REPORT No.				REPORT DATE		CLIENT ORDER No.		PAGE	
		111310.60.10034				18/03/94		0247		1 OF 2	
	SAMPLE No.	Cu	Pb	Pb	Zn	Zn	Ag	Au	Au(R)	As	
METHOD		GA140	GA140	GA104	GA140	GA104	GA140	GG309	GG309	GA140	
1	035825	12	211	-	830	-	<1	0.010	-	90	
2	035826	14	439	-	660	-	<1	0.022	-	230	
3	035827	8	126	-	422	-	<1	<0.008	-	70	
4	035828	8	69	-	232	-	<1	<0.008	-	80	
5	035829	6	114	-	341	-	<1	<0.008	-	60	
6	035830	6	160	-	350	-	<1	<0.008	-	60	
7	035831	7	137	-	209	-	<1	<0.008	-	70	
8	035832	8	148	-	298	-	<1	<0.008	-	50	
9	035833	7	56	-	128	-	<1	<0.008	-	80	
10	035834	10	60	-	160	-	<1	<0.008	-	50	
11	035835	5	20	-	89	-	<1	<0.008	-	70	
12	035836	6	33	-	96	-	<1	<0.008	-	60	
13	035837	5	64	-	427	-	<1	<0.008	-	100	
14	035838	10	82	-	131	-	<1	<0.008	-	90	
15	035839	11	314	-	1153	-	<1	<0.008	-	130	
16	035840	10	194	-	236	-	<1	<0.008	-	160	
17	035841	7	209	-	280	-	<1	<0.008	-	230	
18	035842	6	91	-	195	-	<1	<0.008	-	230	
19	035843	5	102	-	202	-	<1	<0.008	-	400	
20	035844	10	204	-	446	-	<1	<0.008	-	90	
21	035845	6	89	-	221	-	<1	<0.008	-	100	
22	035846	7	226	-	86	-	<1	<0.008	<0.008	750	
23	035847	9	108	-	445	-	<1	<0.008	-	70	
24	035848	8	4	-	46	-	<1	<0.008	-	70	
25	035849	36	16	-	80	-	<1	<0.008	-	70	



ANALYTICAL DATA

SAMPLE PREFIX

REPORT No.

REPORT DATE

CLIENT ORDER No.

PAGE

111310.60.10034

21/03/94

0247

2 OF 2

	SAMPLE No.	Cu	Pb	Pb	Zn	Zn	Ag	Au	Au(R)	As
METHOD		GA140	GA140	GA104	GA140	GA104	GA140	GG309	GG309	GA140
1	035850	7	>5000	2.11	469	-	3	<0.008	-	70
2	035851	7	2483	-	41	-	<1	<0.008	-	60
3	035852	10	3124	-	154	-	<1	<0.008	-	60
4	035853	33	3817	-	1426	-	2	0.031	-	260
5	035854	10	566	-	71	-	<1	<0.008	-	120
6	035855	8	>5000	0.55	56	-	<1	<0.008	-	130
7	035856	10	439	-	228	-	<1	<0.008	-	170
8	035857	24	2877	-	48	-	<1	<0.008	-	120
9	035858	47	354	-	886	-	<1	<0.008	-	90
10	035859	335	3086	-	>5000	0.98	1	0.009	-	80
11	035860	93	1537	-	>5000	0.92	<1	0.009	-	50
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24	DETECTION	2	3	0.01	2	0.01	1	0.008	0.008	50
25	UNITS	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm

APPENDIX VII

Analytical Report NPD5 Lithochemical Suite



ANALABS

ANALYTICAL LABORATORY SERVICES (AUSTRALIA) PTY. LTD.
A.C.N. 004 591 684

Phone (004) 316837

14 Thirkell St. COOEE TAS 7320

Fax (004) 318890

ANALYTICAL REPORT No. 111310.60.09990

THIS REPORT MUST BE READ IN CONJUNCTION WITH THE ACCOMPANYING ANALYTICAL DATA

INVOICE TO:

Pasminco Exploration
P.O. Box 886
BURNIE TAS 7320

ORDER No.

PROJECT

0135

3015

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09/03/94

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9

SAMPLE NUMBERS	SAMPLE DESCRIPTION	ELEMENT/METHOD
34989/34997	DC Prep : GP029,P5 - CHROME FREE NPD 5	Cr,Ni/GA140 Rb,Sr,Y,Zr,V,Nb/GX401 WHOLE ROCK ANALYSIS/GX408

RESULTS TO

Roger Pollock Geological Pty Ltd
Mineral Exploration Contractor
C/- Post Office
WILMOT TAS 7310

RESULTS TO

Mr F Fitzgerald
Pasminco Exploration
P.O. Box 886
BURNIE TAS 7320

RESULTS TO

REMARKS

N.B. SULPHUR BY METHOD GX408 IS NOT RECOMMENDED FOR SAMPLES CONTAINING SIGNIFICANT LEVELS OF SULPHIDE. SUCH SAMPLES SHOULD HAVE SULPHUR CHECKED BY METHOD OM613

AUTHORISED OFFICER



ANALYTICAL DATA

SAMPLE PREFIX REPORT No. REPORT DATE CLIENT ORDER No. PAGE

111310.60.09990 09/03/94 0135 1 OF 3

	SAMPLE No.	Cr	Ni	Rb	Sr	Y	Zr	V	Nb	A1203
METHOD	T/b	GA140	GA140	GX401	GX401	GX401	GX401	GX401	GX401	GX408
1	34989 7.9	<7	<3	138	265	38	227	5	8	17.65
2	34990 9.1	<7	<3	102	112	19	138	<5	4	10.89
3	34991 8.6	<7	<3	79	158	24	167	<5	9	12.52
4	34992 8.5	7	<3	170	95	22	162	<5	6	12.64
5	34993 8.7	<7	3	171	65	20	158	<5	4	12.61
6	34994 6.0	<7	<3	132	58	23	109	<5	6	11.15
7	34995 8.8	<7	<3	121	130	29	183	<5	7	13.43
8	34996 9.1	<7	<3	111	98	24	177	<5	11	13.57
9	34997 8.0	<7	<3	56	379	29	179	7	7	14.89
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24	DETECTION	7	3	5	5	5	5	5	3	0.05
25	UNITS	ppm	%							

Results in ppm unless otherwise specified
- = element not determined

IS = insufficient sample
SNR = sample not received

AUTHORISED



ANALYTICAL DATA

SAMPLE PREFIX

REPORT No.

REPORT DATE

CLIENT ORDER No.

PAGE

111310.60.09990

09/03/94

0135

2 OF 3

	SAMPLE No.	SiO2	TiO2	Fe2O3	MnO	CaO	K2O	MgO	P2O5	SO3
METHOD		OX408								
1	34989	64.0	0.30	4.37	0.09	0.59	3.17	2.30	0.050	0.93
2	34990	75.5	0.21	3.05	0.14	0.35	4.81	1.08	0.041	0.67
3	34991	73.2	0.24	3.24	0.08	0.81	4.09	0.54	0.039	0.38
4	34992	72.6	0.23	1.60	0.04	0.95	9.10	0.09	0.035	0.81
5	34993	73.1	0.23	1.95	0.07	0.60	9.05	0.21	0.035	0.24
6	34994	77.5	0.11	2.32	0.09	0.21	4.57	0.68	0.011	0.34
7	34995	71.5	0.27	2.98	0.10	1.32	4.52	0.48	0.041	0.01
8	34996	72.1	0.27	2.85	0.13	0.88	4.58	0.68	0.046	0.20
9	34997	70.7	0.24	3.10	0.08	0.68	1.35	1.53	0.041	0.02
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24	DETECTION	0.1	0.01	0.01	0.01	0.01	0.01	0.01	0.005	0.01
25	UNITS	%	%	%	%	%	%	%	%	%

ANALYTICAL DATA

SAMPLE PREFIX

REPORT No.

REPORT DATE

CLIENT ORDER No.

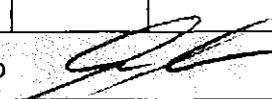
PAGE

SAMPLE PREFIX		REPORT No.			REPORT DATE		CLIENT ORDER No.		PAGE	
		111310.60.09990			09/03/94		0135		3 OF 3	
METHOD	SAMPLE No.	Na20	LOI	TOTAL						
		OX408	OM615	OX408						
1	34989	3.18	3.80	100.40						
2	34990	2.02	1.15	99.96						
3	34991	3.60	1.26	99.95						
4	34992	1.01	1.19	100.29						
5	34993	0.73	1.06	99.93						
6	34994	1.87	1.29	100.17						
7	34995	3.03	1.97	99.69						
8	34996	2.93	1.72	99.99						
9	34997	5.19	1.87	99.72						
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
24	DETECTION	0.05	0.01	0.01						
25	UNITS	%	%	%						

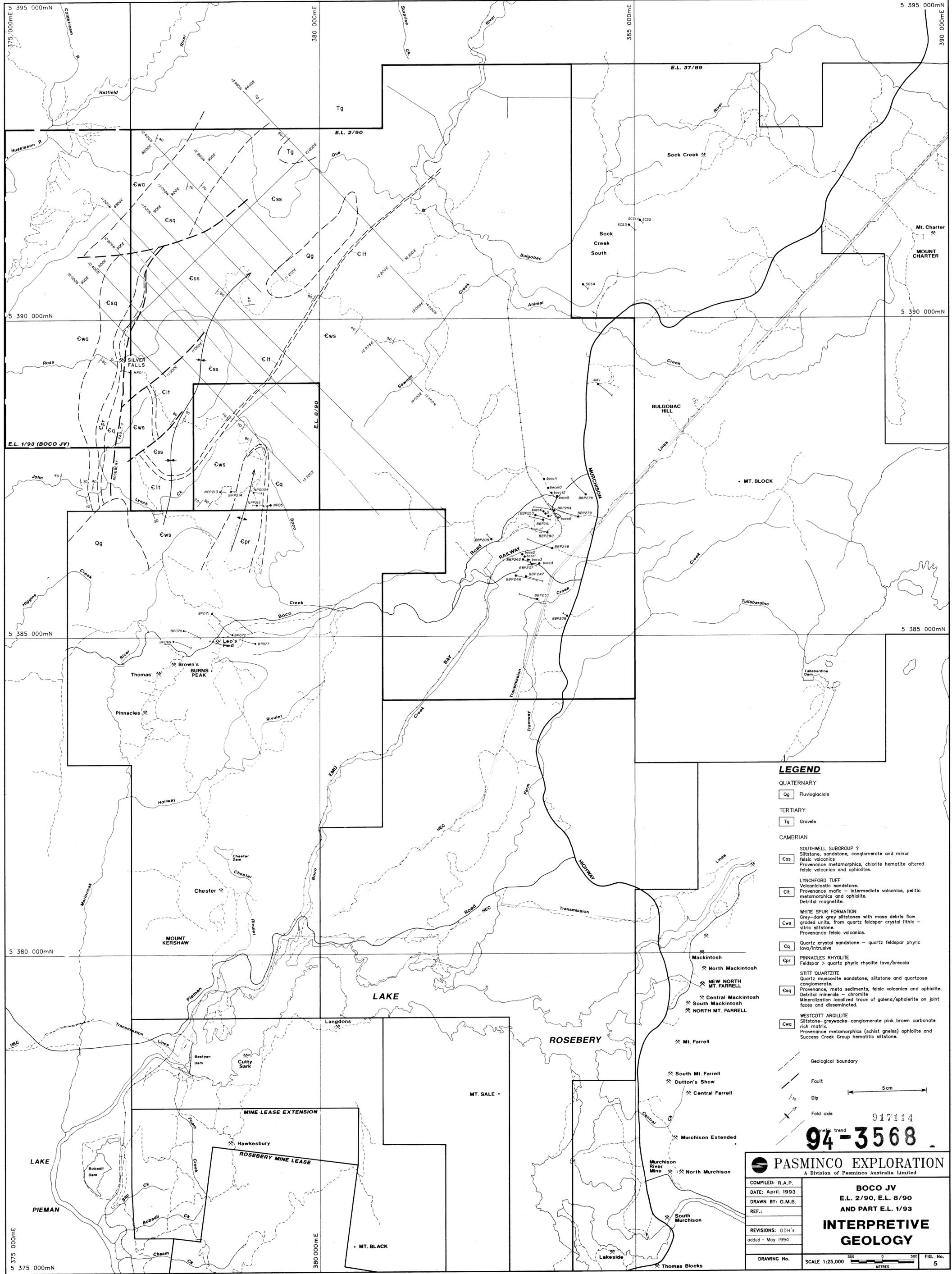
Results in ppm unless otherwise specified
 -- = element not determined

IS = insufficient sample
 SNR = sample not received

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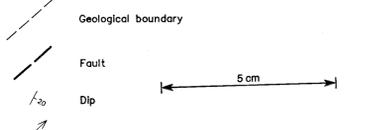


FIGURES



LEGEND

- QUATERNARY
 - Qg Fluvio-glacials
- TERTIARY
 - Tg Gravels
- CAMBRIAN
 - SOUTHWELL SUBGROUP ?
 - Csa Siltstone, sandstone, conglomerate and minor felsic volcanics
 - Provenance metamorphics, chlorite hematite altered felsic volcanics and ophiolites.
 - LYNCHFORD TUFF
 - Clt Volcaniclastic sandstone.
 - Provenance mafic - intermediate volcanics, pelitic metamorphics and ophiolite.
 - Detrital magnetite.
 - WHITE SPUR FORMATION
 - Cws Grey-dark grey siltstones with mass debris flow graded units, from quartz feldspar crystal lithic - vitric siltstone.
 - Provenance felsic volcanics.
 - Cq Quartz crystal sandstone - quartz feldspar phryic lava/intrusive
 - Cpr PINNACLES RHYOLITE
 - Feldspar > quartz phryic rhyolite lava/breccia
 - STITT QUARTZITE
 - Csq Quartz muscovite sandstone, siltstone and quartzose conglomerate and ophiolite.
 - Provenance, meta sediments, felsic volcanics and ophiolite.
 - Detrital minerals - chromite
 - Mineralization localized trace of galena/sphalerite on joint faces and disseminated.
 - Cwa WESTCOTT ARGILLITE
 - Siltstone-greywacke-conglomerate pink brown carbonate rich matrix.
 - Provenance metamorphics (schist gneiss) ophiolite and Success Creek Group hematitic siltstone.



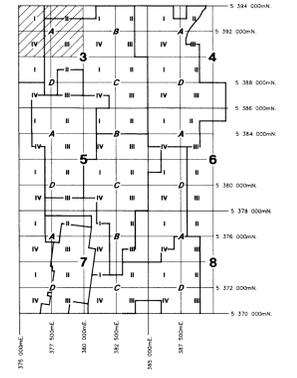
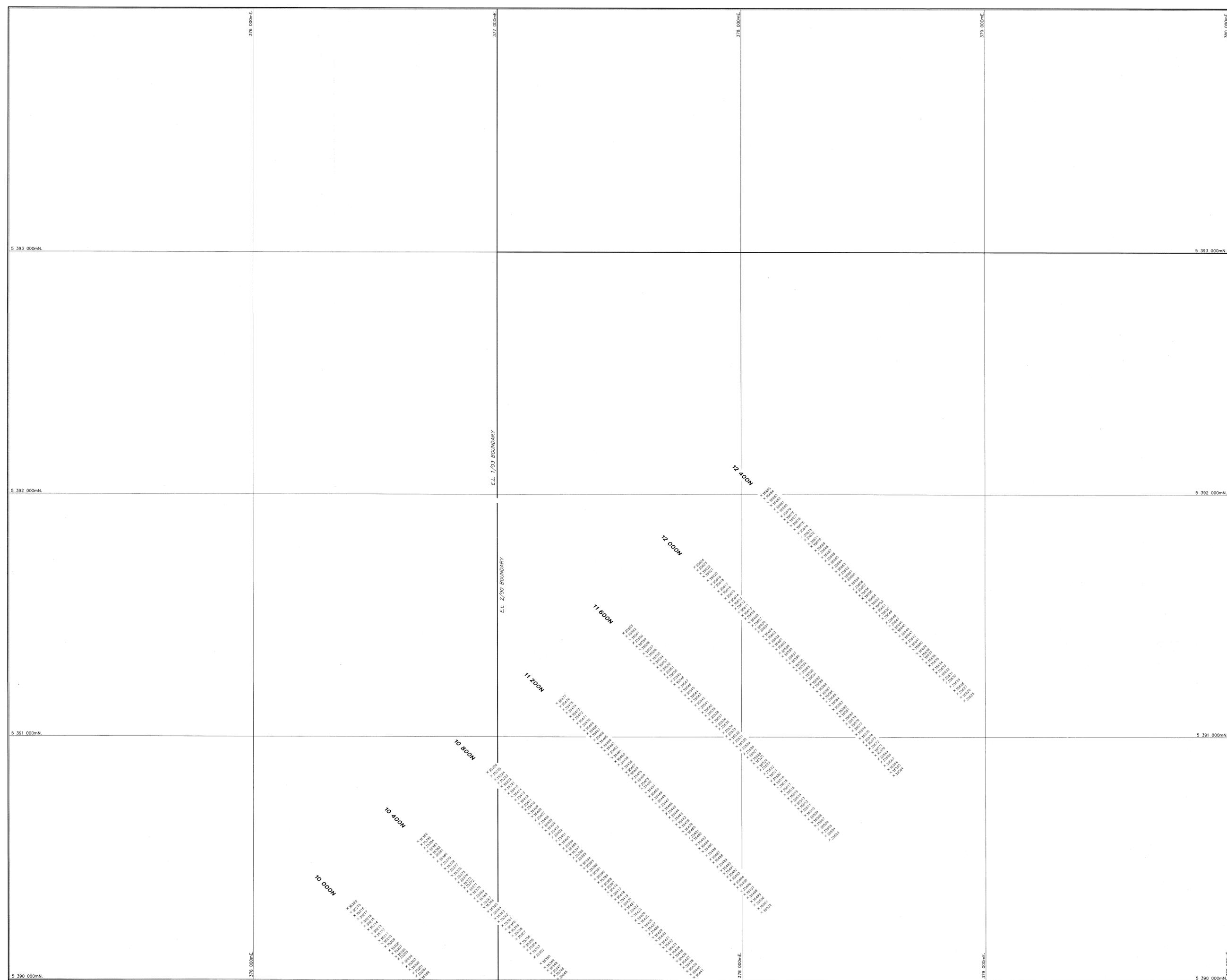
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 A Division of Pasminco Australia Limited

COMPILED: R.A.P.
 DATE: April, 1993
 DRAWN BY: G.M.B.
 REF.:
 REVISIONS: DDH's
 added - May 1994

BOCO JV
E.L. 2/90, E.L. 8/90
AND PART E.L. 1/93
INTERPRETIVE
GEOLOGY

DRAWING No. SCALE 1:25,000 METRES FIG. No. 5



5 cm

GRID CONVERGENCE 1.0
 GRID/MAGNETIC 12.2

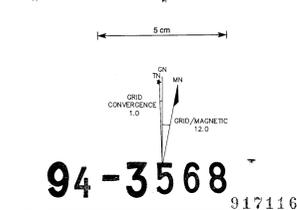
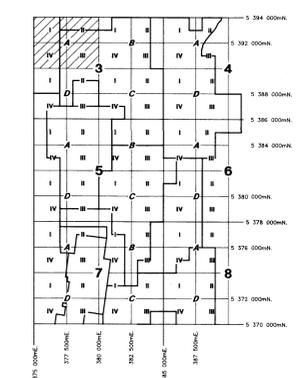
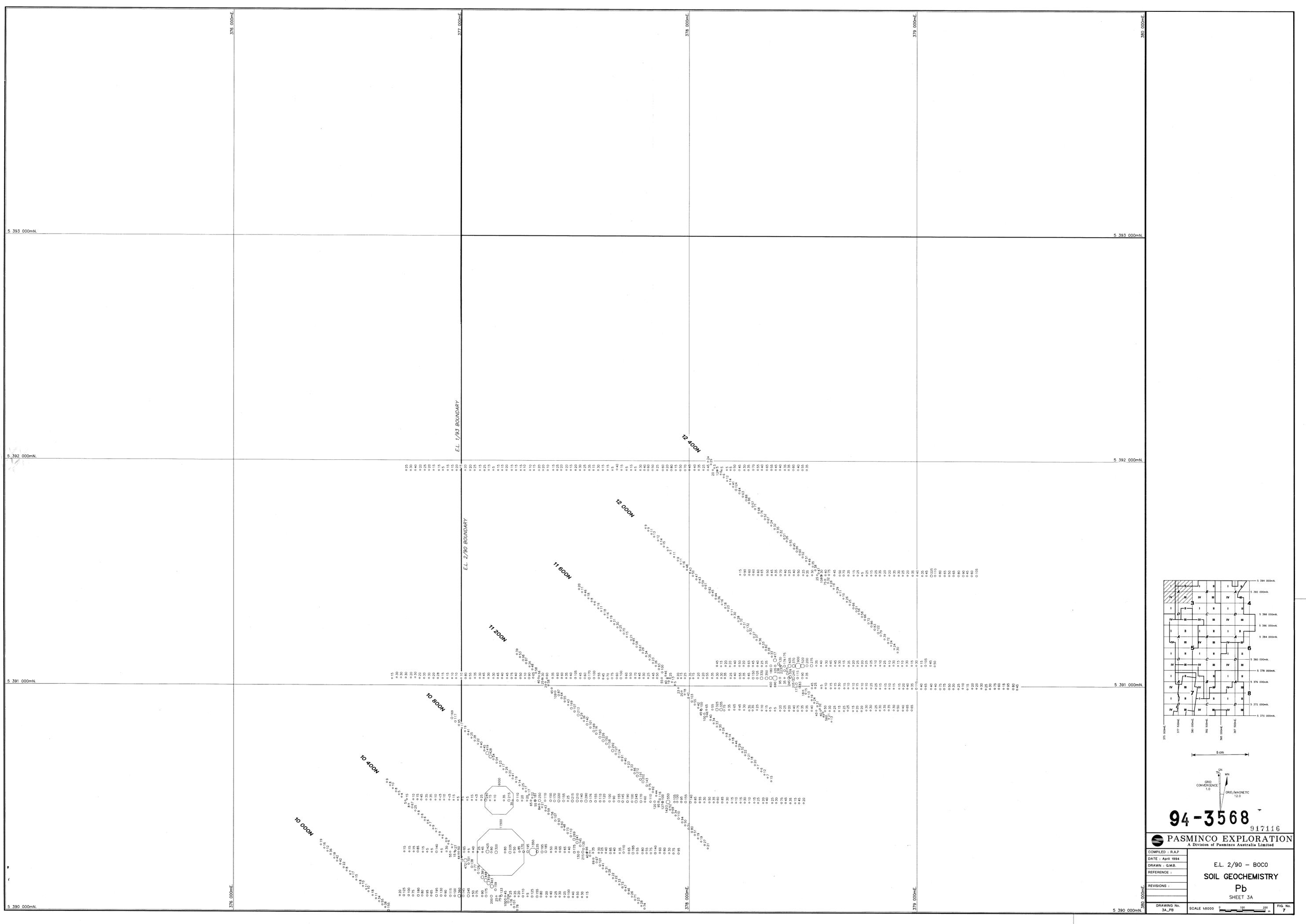
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DATE : April 1994
DRAWN : G.M.B.
REFERENCE :
REVISIONS :
DRAWING No. 3A_SAMP

E.L. 2/90 - BOCO
SOIL GEOCHEMISTRY
SAMPLE LOCATIONS
 SHEET 3A

SCALE 1:5000 0 100 200 m
 FIG. No. 6

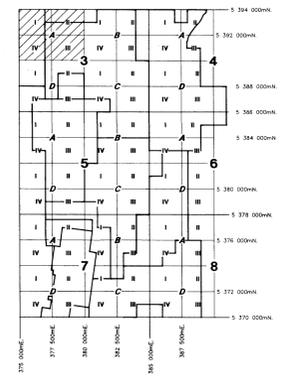
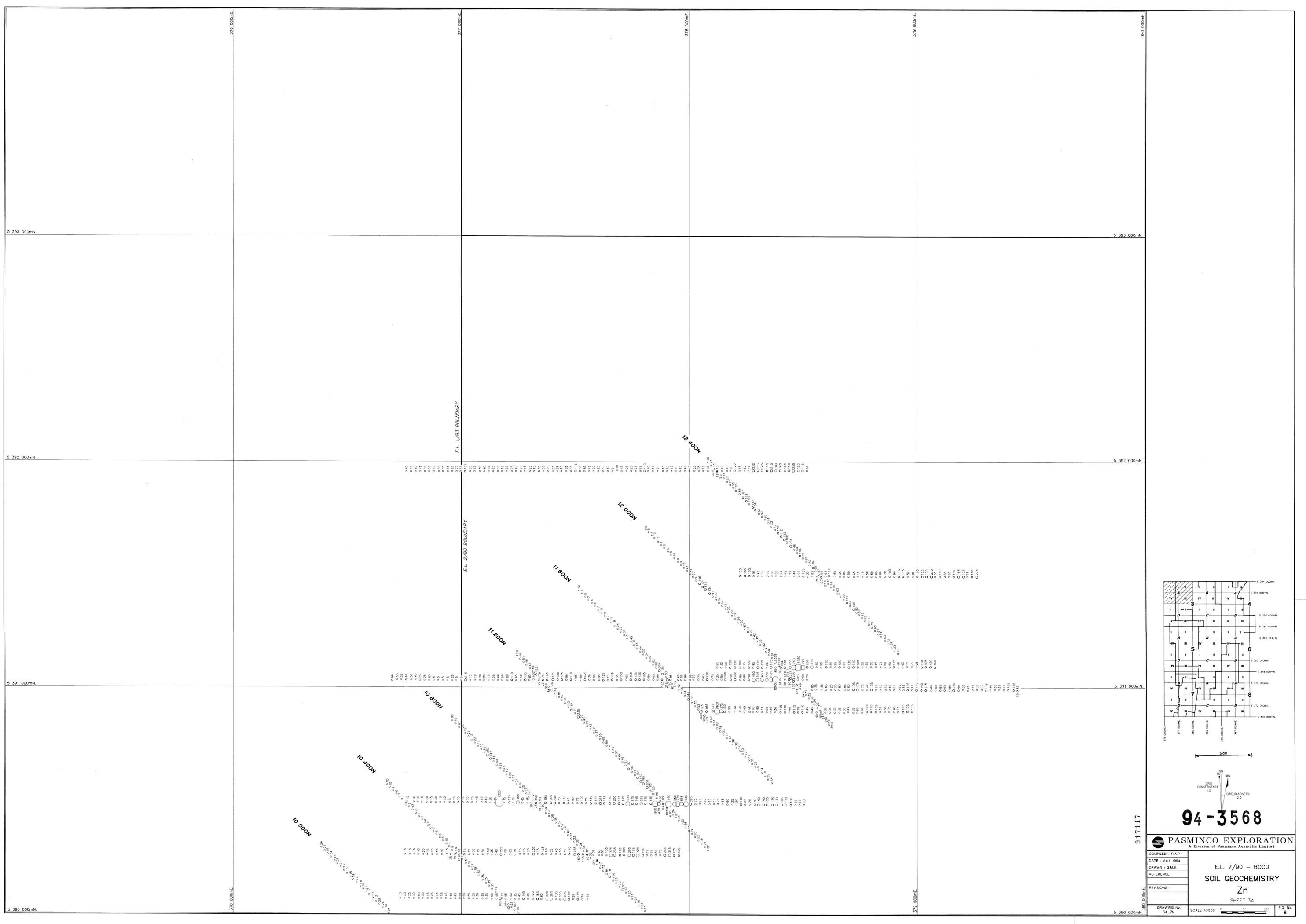


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REFERENCE :
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DRAWING No. 3A_PB
SCALE 1:5000
FIG. No. 7

E.L. 2/90 - BOCO
SOIL GEOCHEMISTRY
Pb
SHEET 3A



5 cm

GRID CONVERGENCE 1:3
GRID/MAGNETIC 12:0

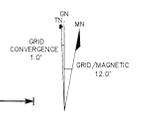
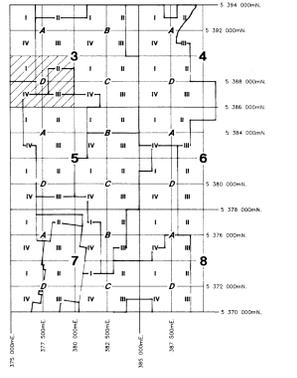
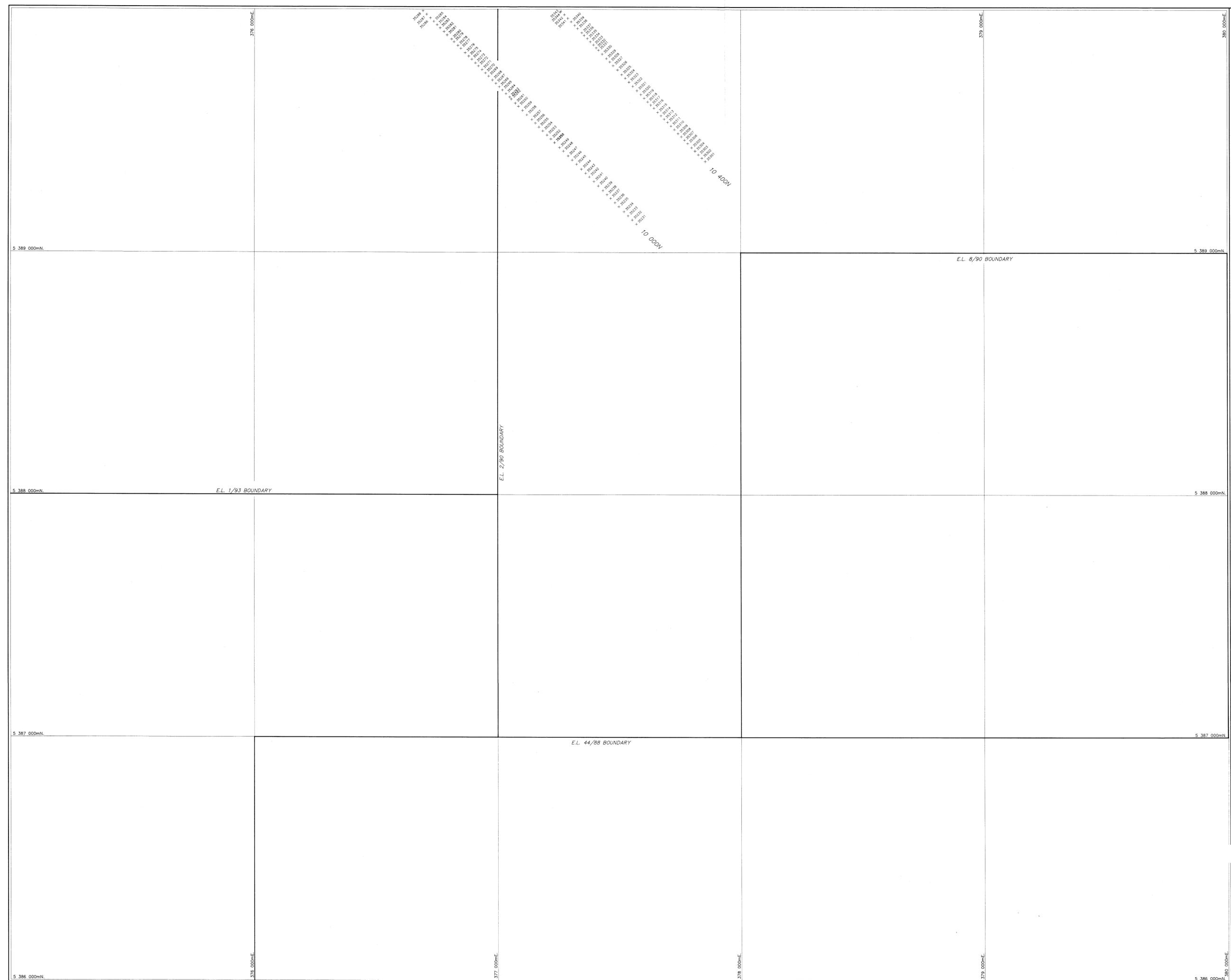
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DRAWN : G.M.B.	REFERENCE :
REVISIONS :	
DRAWING No. 3A_ZN	SCALE 1:5000
FIG. No. 8	

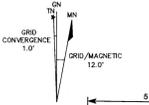
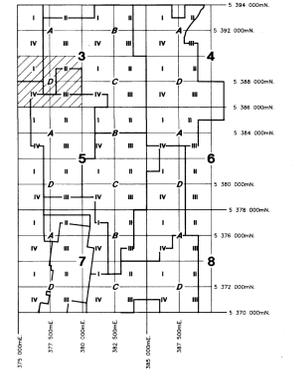
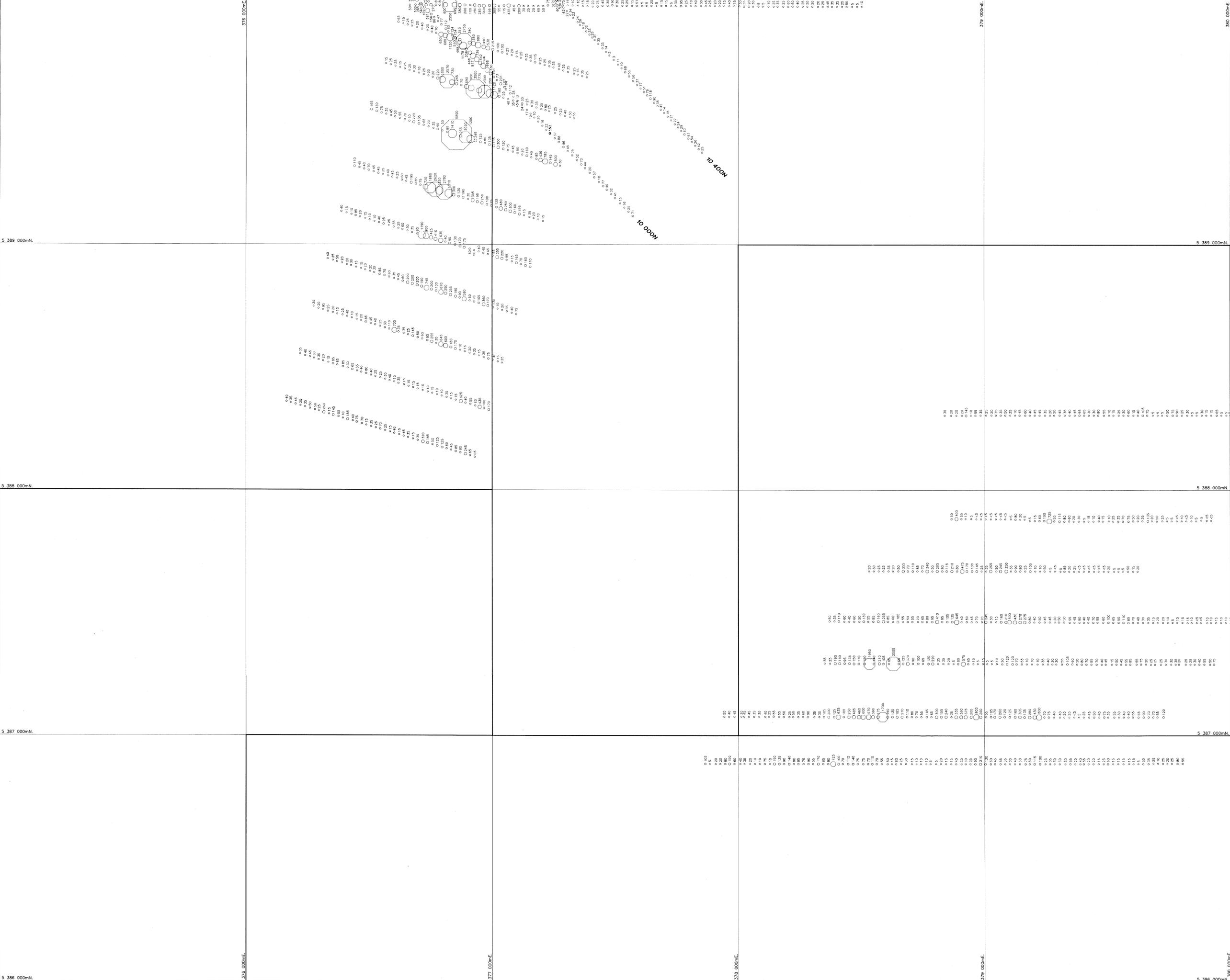
E.L. 2/90 - BOCO
SOIL GEOCHEMISTRY
Zn
SHEET 3A



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COMPILED : R.A.P.	E.L. 2/90 - B000 E.L. 8/90 NORTH PINNACLES SOIL GEOCHEMISTRY SAMPLE LOCATIONS SHEET 3D	
DATE : April 1994		
DRAWN : G.M.B.		
REFERENCE :		
REVISIONS :		
DRAWING No. 3D_SAMP	SCALE 1:5000	FIG. No. 9



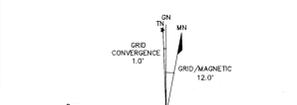
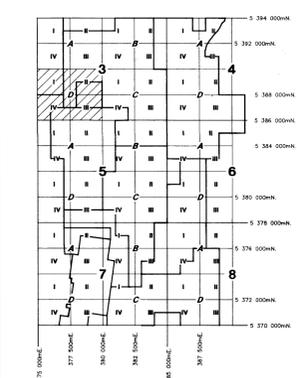
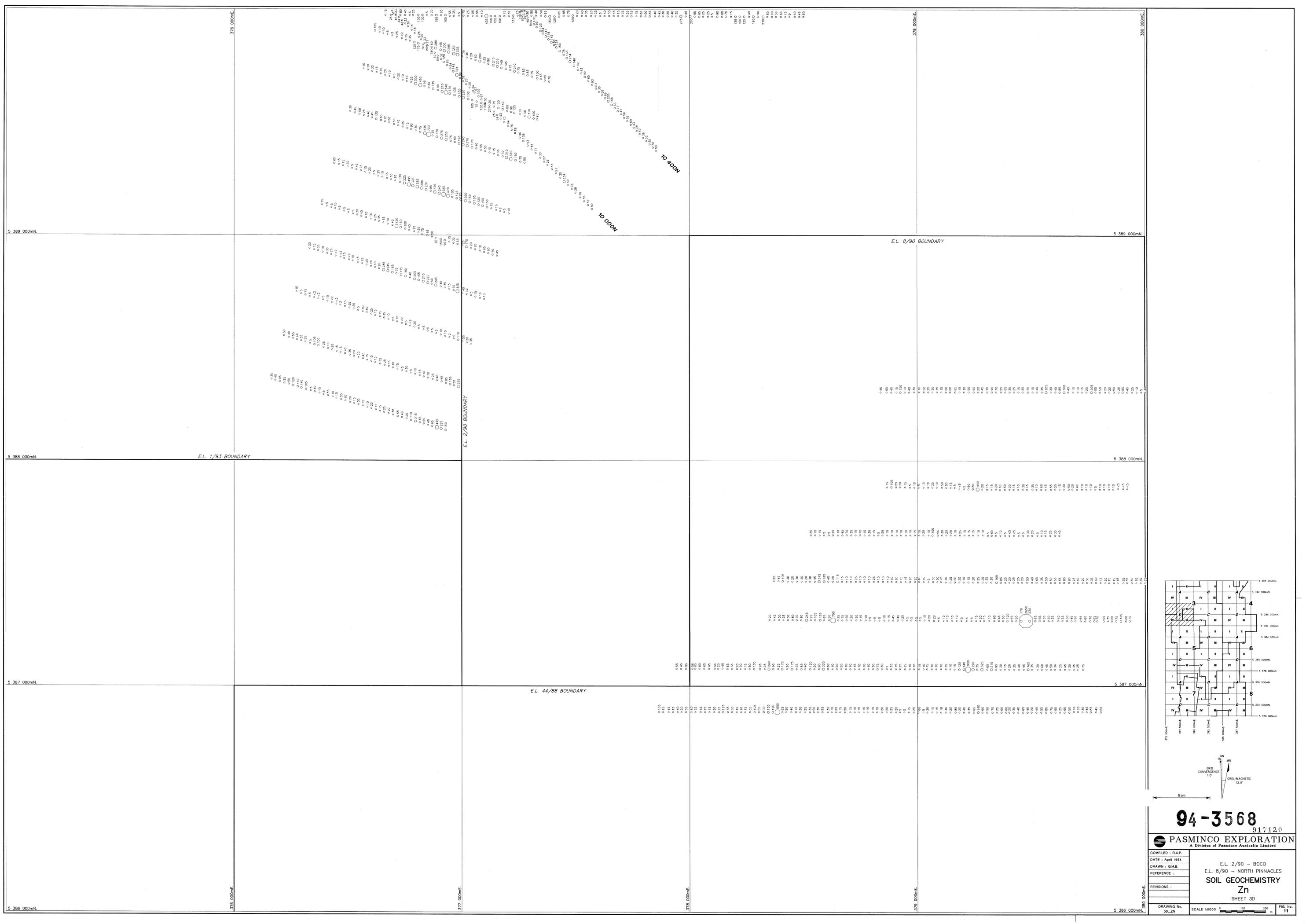
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 REVISIONS :

E.L. 2/90 - BOCC
 E.L. 8/90 NORTH PINNACLES
SOIL GEOCHEMISTRY
Pb
 SHEET 3D

DRAWING No. 3D_PB SCALE 1:5000 FIG. No. 10



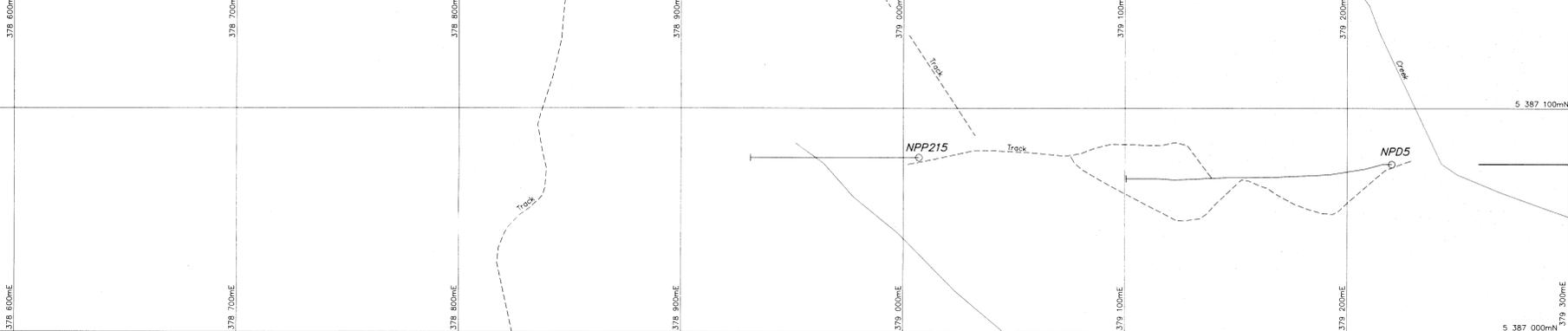
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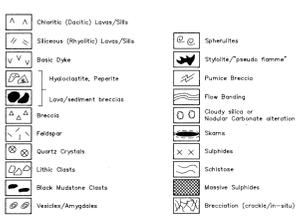
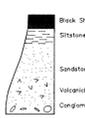
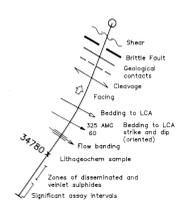
COMPILED : R.A.P.
DATE : April 1994
DRAWN : G.M.B.
REFERENCE :
REVISIONS :
DRAWING No. 3D_ZN
SCALE 1:5000
FIG. No. 11

E.L. 2/90 - BOCO
E.L. 8/90 - NORTH PINNACLES
SOIL GEOCHEMISTRY
Zn
SHEET 3D

SECTION LINE 5 387 075mN

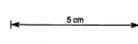


LEGEND



ALTERATION
Moderate - intense silicification, occasionally associated with hydro thermal brecciation

94-3568



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COMPILED: R.A.P.
DATE: March 1994
DRAWN: G.M.B.
REFERENCE:
REVISIONS:
DRAWING No: NPDS_AD
SCALE: 1:5000
FIG. No: 12

E.L. 8/90 - NORTH PINNACLES JV
DRILL SECTION
5 387 075mN AMG
NPD5

