000

77-1183.

441001

Prospect 601

Q30/116 D45G

PACMINEX PTY. LIMITED

GEOCHEMICAL TRAVERSES ACROSS AIRBORNE E.M./MAGNETIC ANOMALIES E.L. 18/74 PIEMAN RIVER TASMANIA

PMR 172/76

SYDNEY

September, 1976.

P.M. MACNAMARA

100

441002

COPY NO. 1

DISTRIBUTION

	Copy
LIBRARY	Original
TASMANIAN MINES DEPARTMENT	1
P.C. THOMAS J.H. RATTIGAN R.W. GERSTELING	2
P.M. MACNAMARA	3

CONTENTS

003

441004

LIST OF ILLUSTRATIONS

004

441005

KEYWORDS

TASMANIA	9EL 18/74
EXPLORATION	8SK 55-05
GEOCHEMISTRY	1976
GEOLOGY	COPPER
AERIAL	LEAD
MAGNETIC	SILVER
SURVEY	TIN
GROUND	SOIL
ELECTROMAGNETIC	ROCK
	STREAM
	SEDIMENT

005

441006

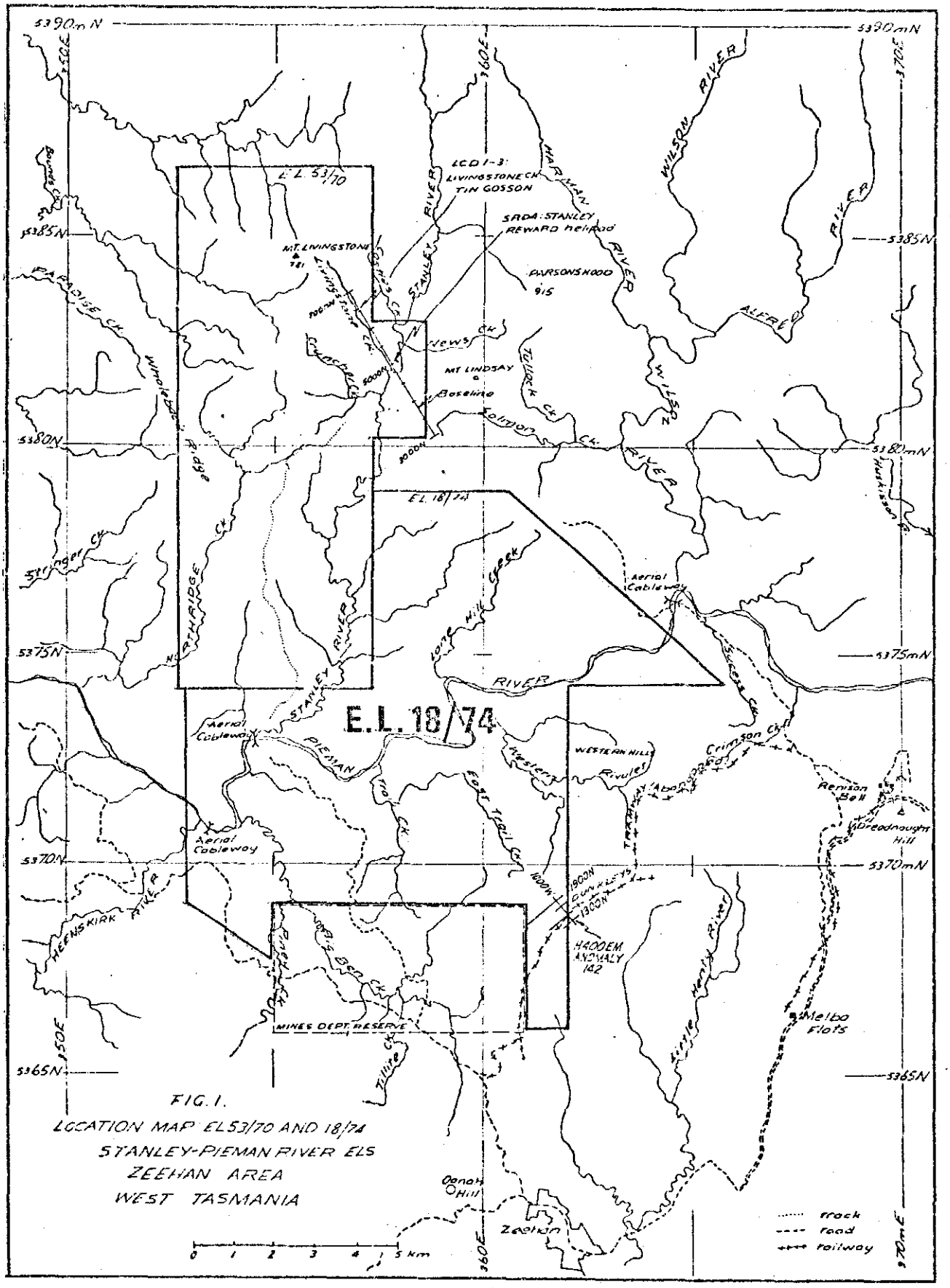


FIG. 1.
LOCATION MAP EL53/70 AND 18/74
STANLEY-PIEMAN RIVER ELS
ZEEHAN AREA
WEST TASMANIA

5 cm

1. INTRODUCTION

1.1 E.L. 18/74 (88 km^2), Pieman River is centred 12 km north-west of Zeehan in the west coast region of Tasmania (see Figure 1). The area was taken up as being prospective for:

1.1.1 Lead-silver-copper in the upper section of the main rock unit present (the Proterozoic/Lower Cambrian Oonah Quartzite and Slate).

1.1.2 Possible tin mineralisation especially near the lower contact of the Crimson Creek Formation. A small occurrence of possible Crimson Creek Formation lies in the south-east part of the E.L. This contact is favourable by analogy with the stratigraphic position of the Renison Bell tin mineralisation.

1.2 In April, 1975, 450 line km of airborne electo-magnetics (E.M.) and magnetics were flown over the area at 0.2 km line spacing, using a McPhar H400 E.M. system. Forty-four airborne located anomalies were selected for testing by geochemical traverses. This follow-up phase was carried out between November, 1975 and April, 1976.

1.3 This report is mainly concerned with the results of the airborne E.M./magnetic survey and the subsequent follow-up phase of traversing across the airborne detected anomalies.

2. SUMMARY

2.1 Between November, 1975 and April, 1976 forty-four airborne detected E.M./magnetic anomalies were checked by soil sampling, minor drainage and rock chip sampling traverses (see DWG K555-5 and Appendices I and II). This work eliminated most of the airborne geophysical anomalies. Most of the E.M. anomalies appeared to be related to black pyritic shaly siltstones. However, a number of weak to moderately strong geochemical anomalies were found to be associated with some of the geophysical anomalies. These are shown on Table I. Some deserve further attention probably in the form of geochemical soil sampling on a grid basis.

2.2 Airborne E.M. anomaly 142 occurs in the south-east part of the E.L. near the scrub covered Dunkleys Tramway (see DWG K555-5). The E.M. anomaly is associated with a nearby magnetic anomaly and a lower Crimson Creek Formation contact. These three features suggested a possible Renison Bell type situation. For this reason a grid was cut through the scrub covered zone and the area tested by soil sampling, ground magnetics and a portable McPhar VHFM instrument. Results were disappointing but the magnetic anomaly was not adequately tested by soil sampling. The only line which cut it did so in a low lying area where alluvial cover is deep. It may be desirable to extend adjacent lines to cut extensions of the magnetic anomaly in areas where residual soils occur. These could be then geochemically sampled.

2.3 The contact between the Oonah Quartzite and Slate/Crimson Creek Formation is distinctive on the aeromagnetic record - smooth low readings in the former and higher and more erratic readings in the latter (Newnham, 1975). The aeromagnetic survey cover over E.L. 18/74 indicates that the only possible contact situation is in the vicinity of E.M. anomaly 142 as mentioned above.

2.4 DWG K555-4 shows a number of aeromagnetic trends. A magnetic high trending south eastwards from the vicinity of the Jurassic dolerite in the south-west part of the E.L. was checked by soil geochemical traverses. No geochemical anomalies were indicated. The high is probably due to a deep feature, possibly related to the lineaments controlling the distribution of the Permian in this area.

2.5 Apart from the follow-up work suggested above, the E.L. does not appear to warrant any further work.

3. TITLE

Exploration Licence 18/74 (88 km^2), Pieman River, was first granted for six months on 8th October, 1974. Renewals have been granted for six monthly periods up to the present.

4. LOCATION, ACCESS AND TOPOGRAPHY

4.1 E.L. 18/74 is centred some 12 km NNW of Zeehan and is bisected by the Pieman River which flows south-westerly through the area (see Figure 1). Much of the area has an undulating topography which is however deeply dissected by steep-sided valleys. Rain-forest type scrub and trees in the valleys prevent easy access to streams or crossing of valleys, especially in the lower regions near to the Pieman River. Dense secondary growth fills the valley along which the abandoned Dunkleys Tramway lies in the south-east of the E.L.

4.2 The Zeehan-Granville Harbour road (the "Corinna track") and a track to the Mines Department cage on the Pieman River provide vehicle access in the south-western part of the area. A foot track north of the cage to the Stanley Reward has also been used for access. For the rest of the area helicopter placement is necessary to avoid long access walks to areas remote from tracks.

5. GEOLOGY

5.1 DWG K555-4 which shows aeromagnetic trends also shows the geological units in the area. The main units are as follows :-

SYSTEM	SYMBOL	UNIT NAME	LITHOLOGY
Quaternary	Qra	-	alluvium
	Qrg	-	gravels
Tertiary	Tg	-	gravels
Jurassic	Jdl	-	dolerite
Permian	Pt	Zeehan Glacial Formation	pebbly mudstone
Silurian	Sac	Austral Creek Siltstone	siltstone
	Sk	Keel Quartzite	quartzite
	Sa	Amber Slate	slate
	Sc	Crotty Quartzite	quartzite
Cambrian	Ec	Crimson Creek Formation	shale (esp. red brown shales)
U. Proterozoic (? L. Cambrian)	Puo	Oonah Quartzite and Slate	quartzite, quartzitic siltstone, grey shale, black shale etc.

5.2 The main prospective horizon in the Zeehan area is the zone between the Oonah Quartzite and Slates and the overlying Crimson Creek Formation. This contact area contains most of the silver-lead mineralisation around Zeehan as well as the Renison Bell tin mineralisation. The Geological Survey of Tasmania on their One Mile Zeehan Sheet show a small doubtful occurrence of the Crimson Creek Formation in the south-east part of E.L. 18/74. Aeromagnetics (Haigh, 1975) tend to confirm it. An E.M. anomaly (No. 142) and nearby magnetic anomaly in the area were gridded and tested during the 1975-76 field season (see Figure 1).

5.3 Most of the airborne E.M. anomalies tested occur in the Oonah Quartzite and Slate (PuO) which makes up the bulk of the area within E.L. 18/74. Magnetics tend to be fairly smooth over the PuO in contrast to the higher and more erratic values shown over the Crimson Creek Formation in the east and and the Jurassic dolerite in the south-west. Magnetics indicate most of the Crimson Creek Formation is outside the E.L. boundary.

6. AIRBORNE E.M./MAGNETIC SURVEY RESULTS

Some 450 line km of airborne electromagnetics (E.M.) and magnetics were flown at 0.2 km line spacing over the E.L. during April, 1975. The survey was conducted by Geoex Pty. Limited using a helicopter mounted McPhar H400 E.M. system.

A report which included flight line records, plots of E.M. anomalies and contoured magnetic results was received from Geoex Pty. Limited in August, 1975. Within E.L. 18/74 some forty-four anomalies (mainly E.M. anomalies) were subsequently selected for follow-up by geochemical traversing.

7. FIELD CHECKING OF AIRBORNE DETECTED ANOMALIES

7.1 Following an appraisal of the airborne E.M./magnetic survey data, it was decided to check forty-four anomalies. These included magnetic anomalies in the south-west of the E.L. around the Jurassic dolerite outcrop plus a magnetic anomaly near Dunkleys Tramway in the south-east part of the E.L. The majority of the other anomalies tested were E.M. anomalies.

7.2 Ground checking consisted largely of soil sampling traverses at 25 m intervals, sampling the minor gullies draining the anomalies and some rock chip sampling. The soil/drainage samples were dried and sieved to -80 mesh. The rock chip samples were pulverized. Chemical analyses are shown in Appendices I and II. The distribution of samples is shown on DWGs K555-1 and K555-5.

7.3 E.M. anomaly 142 (near Dunkleys Tramway) occurs near a magnetic anomaly near an Oonah Quartzite/Crimson Creek Formation contact. It was decided to check this favourable horizon by gridding. Due to secondary growth, the grid had to be cut in order to gain access for traverses. Ground magnetics, soil/sediment sampling and horizontal E.M. surveys were conducted over the zone. Results are reported in Section 9.

7.4 Approximately 500 soil/sediment/rock chip samples were collected from the forty-four anomalous zones between November, 1975 and April, 1976. The bulk of the anomalies appeared to be related to black shales and black shaley siltstones (some pyritic) in the Oonah Quartzite and Slates. A number of weak to moderate geochemical anomalies were indicated (see Table I) but no strong mineralisation has been found to date.

7.5 A test traverse with a scintillometer over E.M. Anomaly 98 indicated readings of x 1.5 to x3 background over black shales. Thus the instrument could possibly be useful for mapping out black shales if these were not covered too deeply. On most anomalies tested, any black shales present were fairly obvious and radiometrics were not needed to confirm their presence.

8. GEOCHEMICAL TRAVERSES OF AIRBORNE ANOMALIES

8.1 General

Forty-four airborne detected anomalies were tested by soil sampling traverses and by sampling minor channels draining them. Apart from two magnetic highs without appreciable E.M. response, the other forty-two are E.M. anomalies. 508 samples were collected in all.

8.2 Sample Numbers

Sample numbers used have four components consisting of a project number prefix followed by the E.M. anomaly number assigned by Haigh (1975) followed by the sample number and type i.e. sample number 601 103 050M etc.

Project Prefix	E.M. Anomaly	Sample Number	Sample Type
601	103	050	M (creek mud)
601	107	071	S (soil)
600	073	946	R (rock chip)

Sample locations are plotted on DWG K555-5 Chemical analyses are listed in order of E.M. anomaly number in Appendices I and II.

8.3 Range of Values

Visual scanning of chemical analyses indicate the following general range of values are present (see below). Most of these were in the one rock unit (PuO) but some higher drainage values are off the Jurassic dolerite (Jd1) in the south-west sector of E.L. 18/74. E.M. anomaly 142 sampling includes possible Crimson Creek Formation rocks as well as PuO.

Metal	Sample Type (s, m or R)*	Range (ppm)	Approximate Background (ppm)
Cu	m, s	6 -38 (Jdl)	
	m, s	2 -18 (PuO)	4
	R	2 -66	10?
Zn	m, s	2 -54	8
	R	6 -980	30?
Pb	m, s	3 -70	15?
	R	8 -190	20?
Bi	m, s	2 -18	6
	R	6 -18	12
Sn			< 20

* s, m or R - soil, creek mud or rock chip.

Govey (1975) indicates the following threshold values for drainage samples within E.L. 18/74 :-

Cu 10 ppm
Zn 15 ppm
Pb 24 ppm

8.4 Anomalous Chemical Analyses

The following samples (Table I) contain anomalous concentrations of metals (in ppm).

TABLE I

GEOCHEMICALLY ANOMALOUS SAMPLES

Sample Number	Sn	Cu	Zn	Pb	Bi	Ag (ppm)	Description
600 073 946R	40	28	54	20	6	0.8	grey/white shale.
948R	20	32	44	31	6	0.8	grey shale.
601 091 140m		2	26	50	14		stream sediment.
601 097 158m		4	96	290	10		sediment: Big Ben Creek (contaminated by dumps at Montana Mine upstream ?).
159R		14	120	40	18		limonitic quartz veined black shale.
601 98 024R		50	980	190			dark brown pyrite shale.
025R		56	10	48			dark brown shale.
601 101 082S		2	50	70			black soil.
601 113 160R		10	10	80	18		pyritic quartz veined siltstone (limonitic).
600 116 935R	100	30	88	150			limonitic Qra on Pieman River bank (Renison Bell tailings contamination ?).
936R	20	66	140	90			
601 SPOT233R	60	36	18	36	10	1.4	"silcrete" type material (quartz veined PuO siltstone ?).

8.5 Discussion of Geochemical Anomalies

Although anomalous, most of the results listed in Table I are apparently too low to be of much significence. The more interesting results from Table I are discussed below. None are very strongly anomalous.

8.5.1 E.M. Anomaly 97

Sample 601 097 158m from Big Ben Creek is probably contaminated by mine dump material and tailings from Big Ben Mine upstream (see Govey, 1975).

8.5.2 E.M. Anomaly 98

The 980 ppm Zn, 190 ppm Pb in sample 601 98 024R in dark brown pyritic shale may be worth checking further but is not extremely high. Access is easy as it lies close to the road.

8.5.3 E.M. Anomaly 116

Sample 600 116 935R with 100 ppm Sn probably represents Renison Bell tailings which have been deposited on the banks of the Pieman River at flood heights.

8.5.5 "Spot" Sample

The sample is slightly anomalous, while the description of the material ("silcrete") indicates a possibly cherty type material. It could be worth resampling the area as potentially interesting cherty rocks occur between the Oonah Quartzite/Crimson Creek Formation elsewhere in the region outside the E.L.

9. E.M. ANOMALY 142

9.1 General

Airborne H400 E.M. anomaly 142 occurs in the vicinity of subcropping shales mapped as possible Crimson Creek Formation on the Zeehan 1 Mile Geological Sheet. As most mineralisation in the Zeehan area is near the Oonah Quartzite and Slate/Crimson Creek Formation contact, it was decided to check this area by gridding.

The anomaly occurs in secondary scrub and is centred on the N.E. trending Parting Creek valley along which Dunkleys Tramway runs. The shales designated as possible Crimson Creek Formation trend N.E. along the centre of the valley. The surrounding higher ground has been mapped as Oonah Quartzite and Slate.

Airborne E.M. anomaly 142 trends N.W. across the valley subparallel to an aeromagnetic anomaly some 400 m to the S.W.

9.2 Access

A helipad was cut near the anomaly in order to gain access for line cutting, and the exploration programme set out below was carried out.

9.3 Line Cutting

A base line designated as 1000 W was cut at 310°M subparallel to and (from photo interpretation) through the anomaly. Dunkleys Tramway and the estimated approximate centre of the E.M. anomaly cross the base line at 1600 N.

Four cross lines were cut perpendicular to line 1000 W and pegged at 25 m intervals (see DWG K555-1) These lines are as follows :-

Cross Lines	From (m)	To (m)
1900 N	800 W	1900 W
1750 N	800 W	1200 W
1500 N	900 W	1600 W
1300 N	800 W	1200 W

Dunkleys Tramway is just south of the central and lowest part of the valley and is bedded mainly on alluvial material. The west side of lines 1500 N and 1300 N finish up on alluvials.

9.4 Geology

9.4.1 Few outcrops occur but sub-crop and scree tend to confirm the picture shown on the 1 Mile Zeehan Geological Sheet (see DWG K555-4). The central low part of the valley is mainly shale (Crimson Creek Formation ? or possibly black shales developed near the top of the Oonah Quartzite and Slate). The surrounding higher ground on lines 1900 N and 1300 N carry much PuO (Oonah Quartzite and Slate) scree. PuO quartzitic siltstones crop out in places on these lines, but black shales and brown limonitic shales (weathered black shales ?) are strongly developed also.

9.4.2 Sparse strikes and dips tend to show a N.W. strike in the S.E. swinging around to the west going northward (near line 1900 N). The few dips obtained are steep with a tendency for most to be southwards.

9.4.3 The shales on lines 1750 N and 1500 N mainly show up as clayey soil. At 1450 N/1000 W there is a strongly pyritic shale which may explain the E.M. anomaly.

9.4.4 A limonitic greenish shaly chert at 1500 N/ 1150 W is distinctive.

9.4.5 Extensions of these shales onto lines 1900 N and 1300 N were not evident. There is the possibility that the black shales on these lines represent the unweathered variety of the shales in the centre of the valley but this is unlikely.

9.5 Soil and Drainage Geochemistry

Chemical analyses of soil, rock and drainage samples collected on the grid are shown in Appendix II. None of the values are especially high, except those in the vicinity of the contaminating bed of Dunkleys Tramway (i.e. samples 311, 355). The bed is made up of dump material from the Zeehan Mines.

The following samples are anomalous but not so strongly so as to suggest follow up work is warranted.

Sample Number	Sn	Cu	Zn	Pb	Bi	Ag (ppm)	Description
600 142 241s	x	44	85	28	-	2.2	Brown/orange soil.
259s	20	20	100	42	-	2,2	Brown/orange clay.
279s	20	4	48	16	-	1.4	Dark brown humic soil.
308s	x	29	51	33	-	0.6	Dark grey soil, quartzite fragments.
313s	20	47	58	24	-	1.8	Light brown soil.
329R	20	60	160	30	14	1.8	Ironstone.
335R	x	40	65	16	4	0.8	Limonitic greenish chert.
345R	20	32	102	38	-	3.6	Greenish slate limonite voids.

9.6 Ground Magnetics

9.6.1 A Geometrics Total Force (Model G 816) instrument with the sensor mounted on a 2.5 m pole was read at 12.5 m intervals on the four cross lines. Readings tended to be fairly flat but "noisy". The only large variations encountered were on the western side of line 1500 N (see DWG K555-2).

9.6.2 A narrow, presumably shallow magnetic high occurs on line 1500 N at 1460 W. A wider anomaly peaks at 1260 W. Unfortunately lines 1300 N and 1750 N do not extend far enough to be able to locate the extensions of the two magnetic highs on these two lines. A minor peak on line 1900 N at 1560 W could be the "end effect" of the anomalies on line 1500 N.

9.6.3 Due to the swampy nature of the ground on line 1500 N in the vicinity of the magnetic peaks, it is doubtful whether the soil sampling adequately tested these magnetic highs. The position of the magnetic highs relative to the estimated ground position of the airborne E.M. anomaly (i.e. centred at 1600 N/1000 W approximately) correlates with the relative positions of the airborne E.M. and magnetic anomalies as plotted on the flight line photo mosaic.

It may be well worth while extending the lines on either side of line 1500 N in order to locate the magnetic high and test it by soil sampling. However, the strike length of any horizon could be limited in length to 600 m (see DWG K555-5). In addition, the VHEM data (see DWG K555-3) does not show any major conductors in the vicinity of the magnetic highs on line 1500 N.

9.7 Portable Horozontal E.M. Instrument Traverses

9.7.1 Using McPhar VHEM (Vertical Horizontal E.M.) portable equipment in the horizontal mode, traverses were made along the base line and the four cross lines. The frequencies used are 600 c.p.s. and 2,400 c.p.s.

Results are shown on DWG K555-3.

9.7.2 A number of conductors show up on line 1900 N - probably the black shales noted while soil sampling. An anomaly associated with the highly pyritic shale near 1450 N/1000 W may extend on to line 1300 N at 1050 W but has no apparent signature on line 1500 N.

9.7.3 The magnetic peak on line 1500 N would, by comparison with the airborne data, place the airborne E.M. anomaly near 1000 W, but no strong anomaly is shown here on the portable H.E.M. data.

10. AEROMAGNETIC TRENDS

10.1 The aeromagnetic data supplied by the Geoex Pty. Limited airborne E.M./magnetic survey of 1975 has been used to plot various magnetic trends on DWG K555-4. The aeromagnetic trends have been shown as:-

- magnetic peaks (highs)
- magnetic lows
- magnetic trends
- possible magnetic trends.

The magnetic highs and lows are fairly obvious features on the chart records. Some of the magnetic trends and possible trends are subtle features.

10.2 Three main areas of interest have been outlined which are located towards the margin of the otherwise unresponsive Oonah Quartzite and Slate (PuO) in the centre of the E.L. These are as follows:-

10.2.1 The magnetic low on the north-eastern and eastern side of E.L. 18/74, associated with the Oonah Quartzite/Crimson Creek Formation contact. Positioning control is poor here as the position of the low is extrapolated beyond the end of the airborne geophysical lines as plotted by Geoex. It does however confirm that the contact is located outside the border of E.L. 18/74.

10.2.2 Magnetic trends, mainly peaks (as plotted on DWG K555-4) which are associated with the Jurassic Dolerite intrusion in the south-west of E.L. 18/74. On the north-eastern side of the zone, there is an approximate boundary (marked -b-b on DWG K555-4) marking the change from smooth magnetics to the east (typical PuO type) to a more irregular pattern with increasing readings going to the west. These readings culminate in a peak or a number of peaks within the dolerite. These extend south-eastwards apparently as deep features towards the Montana Mine in Oonah Quartzite and Slate. The blocks of fault bounded

Permian rocks in this area could be related to this structure.

No surface expression of the magnetic feature in the PuO has been found to date. A number of soil sampling traverses (see DWG K555-5) in the vicinity gave negative results.

10.2.3 E.M. Anomaly 142 - Dunkleys Tramway Area

A magnetic high was recorded on three adjacent flight lines (200 m apart) in the Dunkleys Tramway area in the south-eastern part of E.L. 18/74. The high is 400-500 m south-west of E.M. anomaly 142. It could represent the Oonah Quartzite/Crimson Creek Formation contact. If so, the length appears to be limited to some 600 m at most.

Although the Dunkleys and Despatch Faults control the distribution of units in this area, the underlying N.W. to N.N.W. control is shown by a number of aeromagnetic trends in the area. These presumably reflect the overall fold pattern (in contrast to the subsequent faulting pattern at large angles to them).

11. CONCLUSIONS

11.1 Apart from the occurrence near E.M. anomaly 142, the favourable Oonah Quartzite/Crimson Creek Formation contact zone appears to be absent from the E.L.

11.2 It may be worth considering extending lines 1750 N and 1300 N to intersect the magnetic high met on the alluvial covered section of line 1500 N at E.M. anomaly 142 location.

11.3 A number of the minor geochemical anomalies listed on Table I may be worth resampling in more detail.

P.M. MACNAMARA
(LK)

12. REFERENCES

1. BLISSET, A.H., 1962 : Geological Survey Explanatory Report on the Zeehan 1 Mile Sheet. Tasmanian Department of Mines.

2. GOVEY, A.L., 1975 : Progress Report on Activities - Southern Part of E.L. 18/74, Pieman River, Tasmania to 1st June, 1975. July, 1975 Pacminex Report PMR 40/75.

3. HAIGH, J.E., 1975 : Report on the Helicopter-borne combined Electromagnetic and Magnetic Survey in the Zeehan Area of Western Tasmania for Pacminex Pty. Limited. Volumes I and II - Geoex Pty. Limited. Pacminex Report PMR 137/75.

4. NEWNHAM, L.A., 1975 : A Lower Cambrian Marker Sequence in the Renison - Mount Lindsay Area in West Coast Symposium, Geol. Soc. of Australia, Queenstown, September, 1975.

APPENDIX I

GEOCHEMICAL ANALYSES : E.M. ANOMALIES 73-147
(EXCLUDING 142)

U.30

441031

APPENDIX I

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi*	Ag	SAMPLE DESCRIPTION
73							
600 073 946R	40	28	54	20	6	0.8	Grey/white shale - finely bedded - deformed, folded in places
947M	X	4	10	8		0.2	Brown mud - grey shale & quartz frags.
948R	20	32	44	31	6	0.8	Grey shale - taken at 947-location
949M	X	8	8	5		0.4	Mud in gully
950M	X	3	4	7		0.4	Mud in gully
951M	X	1	2	3		0.2	Edge of 2nd order creek -qtzite nearby
79							
600 079 907M		X	8	14	2		Mud sample of gully
908M		X	6	10	2		Mud sample of gully
909M		X	4	14	2		Mud sample of gully
910M		X	4	10	2		Mud sample of hill slope - outcrop of quartzite nearby strike 210°
81							
600 081 853M	X	2	10	10			Mud in gully
854M	X	2	10	16			Mud sample in gully
855M	X	2	12	12			Mud sample in small gully - outcrop of Fe rich quartzite strike 320°
82							
600 082 845M	X	2	12	12			Mud sample in small gully
846M	X	2	10	10			Mud sample in small gully
847M	X	2	8	10			Mud sample in small gully
848M	X	2	12	10			Mud sample in gully - outcrop quartzite nearby and some white shale
84							
600 084 858M	X	2	12	14			Mud sample on steep slope of saddle
859M	X	2	10	10			Mud sample on steep slope of saddle
860M	X	2	10	10			Mud sample on steep slope of saddle
861M	X	1.5					Mud sample on steep slope of saddle - quartzite on saddle strike 030°
85							
600 085 904M		X	8	10	2		Mud sample of hill slope
905M		X	6	10	2		Mud sample of gully
906M		2	6	12	2		Mud sample of gully - outcrop quartzite nearby strike 095°
86							
601 86 143M		X	6	12	12		In gully, stream sediment
144S		X	4	8	8		On small interfluve soil
145M		X	6	18	10		In gully trending west, stream sediment
146S		X	4	16	10		On interfluve, soil sample
147N		X	6	20	14		On small gully, stream sediment

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 86 148S		X	2	10	8		Swampy soil, draining close to E.M. anomaly 86 centre
149S		X	8	14	8		In secondary scrub, swampy soil
150S		X	6	18	12		In primary forest presumed very close to E.M. anomaly 86 centre, grey/brown soil
87							
601 87 030M		2	4	6			Gully near E.M. 87 - dry
031M		2	4	8			2 m wide creek, Oonah Quartzite/Slate outcrop
032S		2	8	8			Slope wash soil from west bank off E.M. No. 87
033S		4	12	14			Slope wash soil from west bank off E.M. No. 87 (25 m below 032)
034S		4	8	18			Slope wash soil from west bank off E.M. No. 87 (Oonah outcrop)
035M		2	2	10			Main creek: Oonah Quartzite and Slate black graphitic slate 25 m above 035 m in creek (strike 170/dip steep W) = E.M. No. 87 anomaly source ? (?) Pieman gravels just above 035 m (10 m long in creek)
88							
600 088 862M	X	2	16	20			Mud sample in small gully
863M	X	2	12	12			Mud sample in steep gully
864M	X	2	12	12			Mud sample in depression on slope
865M	X	2	10	16			Mud sample in gully - quartzite scree
89							
601 089 111S		4	8	20	10		Grey soil, contains angular quartz fragments, sampled close to large tree
112M		4	6	18	4		In gully trending N, stream sediment
113S		8	10	30	4		Grey/orange mottled soil
114S		4	8	16	4		Black soil with occasional siltstone fragments (bedrock) abundant charcoal fragments
115M		4	4	18	6		In gully trending NE, stream sediment
116S		4	4	10	4		Sampled close to large tree, black soil bedrock contains siltstone frags.
117S		4	6	14	4		Chestnut brown/grey humus rich soil on slope
118M		4	6	20	6		In gully, stream sediment. Extensive outcrop of black shale in creek.
90							
601 090 119S		2	2	10	4		Black clayey soil, rare quartz fragments
120S		2	4	10	2		Black clayey soil, rare quartz fragments
121S		2	2	8	4		Black soil, angular quartz fragments
122M		2	6	14	4		In gully, stream sediment
123S		2	4	8	4		Black clayey soil, rare quartz fragments
124S		2	4	24	4		Black clayey soil, rare quartz fragments

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 090 125M		2	4	10	2		In gully, stream sediment
126M		2	4	20	4		In gully, stream sediment
91							
601 091 127M		2	2	16	4		In gully, trending south, stream sed.
128S		X	4	16	6		Abundant angular quartz and quartzite fragments in soil
129S		X	4	16	4		Black soil containing few quartz and quartzite fragments
130M		2	6	12	4		In creek, stream sediment. Quartzite outcrops in creek
131S		X	2	14	4		Black/brown gritty soil on slope
132S		X	4	8	2		Black gritty soil on slope
133S		X	4	12	2		Soil with Tg rounded pebbles (including quartz-tourmaline rock)
134S		2	4	20	2		Tg soil near top of slope
135M		X	2	12	4		In gully, stream sediment
136S		X	4	14	2		Black gritty soil
137S		X	16	20	4		On edge of slope
138S		X	6	10	8		On slope on gravelly soil, containing siltstone fragments
139M		X	6	12	12		In gully, stream sediment
140M		2	26	50	14		In small gully, trending S.W. stream sediment
141S		X	4	14	4		Dark soil
142S		X	6	18	16		Dark brown soil
92							
601 92 036M		32	30	30			R.H.T. gully draining E.M. 92; in dolerite; slope wash soil
037M		38	42	30			As for 036 M , 50 m below 036 dolerite outcrop
038M		6	8	14			3 m wide draining dolerite on N. side of E.M. No. 092
93							
600 093 150M		2	4	14	2		0 m :- light grey mud - strong root penetration
151M		2	4	16	6		25m :- light grey mud - strong root penetration
152S		2	4	18	2		50m :- light grey sandy clay <20% quartz fragments
153S		2	2	18	4		75m :- light grey sandy clay ~30% quartz fragments
154S		2	2	20	4		100m:- > 50% quartz otherwise same as 153 S
155S		2	4	40	6		125m:- light grey sandy clay more siltstone than clay
156S		2	4	22	4		150m:- light grey sandy clay more siltstone than clay
157S		2	4	20	4		175m:- light grey sandy clay more siltstone than clay

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 093 158S		2	4	20	4		200m:- light grey clay soil - quartz and Oonah fragments
159S		2	2	16	2		225m:- light grey clay soil - quartz and Oonah fragments
160S		2	2	10	2		250m:- dark brown slightly clay soil - high organic content
161S		2	4	16	2		0 m :- light grey clayey soil
162S		2	10	18	4		25m :- light grey clayey soil
163S		2	4	20	4		50m :- light grey clayey soil
94							
600 094 911M	X	2	12	14			Mud sample, 3rd order gully
912M	X	2	14	14			Mud sample, 3rd order gully
913M	X	2	10	14			Mud sample, 3rd order gully
914R	X	8	28	24			Sample of Fe rich white to grey shale, strike 200°
915M	X	4	14	20			Mud sample, 3rd order gully
97							
601 097 151M		X	8	20	6		Sandy sediment from creek bed
152S		2	8	12	12		Black soil with siltstone and angular quartz fragments plus vegetation roots Siltstone boulders occur nearby
153S		4	6	10	12		As above but no outcrop
154S		2	14	28	10		At top of ridge near outcrop of siltstone with abundant quartz veins. Soil is more brown than in 153(S)
155S		8	12	22	8		Black soil containing roots and black shale fragments. Black shale is bedrock
156S		6	10	18	8		Brown soil with mainly siltstone fragments and vegetation roots.
157S		6	14	18	8		Brown soil with mainly siltstone fragments and vegetation roots.
158M		4	96	290	10		Sandy sediment from Big Ben Creek
159R		14	120	40	18		Limonitic ooze observed on quartz-veined black shales in creek-bed over 30 metres along the creek. Quartz veins show slicken sides and, in places, contain pyrite (?). Shales are crenilated, kinked and sheared in places (caused by faulting)
98							
601 98 001R		4	6	16			6 m chip sample of grey and black shale no sulphide seen (Oonah Quartzite and Slate)
002R		2	6	10			11 m chip grey sandstone/quartzite (Oonah)
003M		X	2	6			Gully sample (mud)
004R		2	8	14			16 m chip pale grey shale
005R		4	4	14			18 m chip grey and black shale
006R		2	4	12			6 m chip sample
007R		48	6	22			8 m chip sample

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 98 008M		2	4	8			Minor gully
009R		4	4	12			10 m chip sample: grey shale, black shale partings.
010R		4	4	12			15 m chip sample: black and grey shales, crenulated (= E.M. anomaly No. 98?)
011R		2	4	14			7 m chip sample: grey shale and sandstone
012R		2	4	16			15 m chip sample: grey sandstone (argillaceous matrix)
013R		2	4	12			8 m chip sample : grey sandstone (argillaceous matrix)
014R		2	2	12			23 m chip sample: grey sandstone (argillaceous matrix)
015R		2	2	12			12 m chip sample
016R		6	4	14			4 m chip sample: brown shale, minor sandstone bands.
017R		4	2	18			7 m chip sample: sandstone and shale
018R		2	2	14			9 m chip sample: shale and sandstone
019R		10	4	16			14 m chip sample: dark brown shaley siltstone, minor sandstone; Mn on fractures
020R		2	4	20			10 m chip sample: dark brown siltstone
021R		2	2	10			13 m chip sample: dark brown siltstone, minor quartzite
022R		14	8	16			20 m chip sample: dark brown (?) pyritic shale, Mn on fractures
023R		22	18	18			11 m chip sample: dark brown shale; fine grained pyrite
024R		50	980	190			Dark brown pyritic shale on N.E. edge of road
025R		56	10	48			15 m chip sample: dark brown shale minor quartzite bands
Magnetic Anomaly N.E. of 98							
601 98 026M		2	2	12			Headwaters of gully draining magnetic anomaly: dark organic soil - no outcrop
027M		2	X	12			As for 026(M): no signs of dolerite - only Oonah Quartzite scree
028M		X	4	12			Headwaters of gully draining magnetic anomaly: dark organic soil - no outcrop
029M		2	14	10			Gully draining magnetic anomaly near E.M. 98
Magnetic Anonaly S.E. of 98							
601 MAG 098M		2	4	10	4		In gully near old workings - stream sediment
099M		2	4	12	2		In gully south of 098 - stream sediment
100M		2	4	12	2		In upper parts of major stream - stream sediment
101S		2	4	10	4		Light brown gritty soil with abundant angular quartz pebbles
102S		X	2	8	2		Light brown gritty soil with abundant angular quartz pebbles
103M		2	4	8	2		Light brown gritty soil with abundant angular quartz pebbles - very minor stream sediment

035

441036

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 MAG 104S		X	2	8	4		Light brown gritty soil with abundant angular quartz pebbles - siltstone at base
105S		2	8	10	2		Black/brown soil with angular and rounded quartz pebbles
106S		X	2	10	2		Black soil with angular and rounded quartz pebbles
107S		X	4	10	4		Black soil with angular and rounded quartz pebbles
108S		X	2	8	4		Black soil with angular and rounded quartz pebbles
109S		X	2	8	2		Black soil with angular and rounded quartz pebbles
110M		2	2	10	2		Black mud plus angular and rounded quartz pebbles
600 098 400S	X	1	6	2	4	0.4	Oonah Quartzite scree (samples 25 m apart)
401S	X	1	2	2	6	X	Oonah Quartzite scree
402S	X	2	2	1	6	0.2	Light brown Oonah silt
403S	X	2	1	X	X	X	Oonah Quartzite scree (samples 25 m apart)
404S	X	2	1	2	4	X	Oonah Quartzite scree
405S	X	1	4	2	4	X	Oonah Quartzite scree (samples 25 m apart)
406S	X	1	1	1	2	X	Oonah Quartzite scree (samples 25 m apart)
407S	X	1	2	1	2	0.2	Dark organic Oonah Quartzite slope wash
408S	X	2	4	X	4	X	Dark organic Oonah Quartzite slope wash
409S	X	1	3	X	2	X	Dark organic Oonah Quartzite slope wash
410S	X	1	4	2	2	X	Light brown Oonah Quartzite silt
411S	X	1	2	2	2	0.2	Light brown Oonah Quartzite silt
412S	X	1	X	X	4	X	Soft white Oonah Quartzite silt
413S	X	2	4	2	2	X	Soft white Oonah Quartzite silt
414S	X	1	3	3	4	X	Soft white Oonah Quartzite silt
415M	X	1	3	4	4	X	Gully - Oonah Quartzite scree; 145/70°E di
416S	X	1	3	4	8	X	Limonitic stained Oonah Quartzite soil (approx. centre of Magnetic trend)
417S	X	1	3	2	4	0.2	Light brown Oonah Quartzite silt
418S	X	1	2	2	6	0.2	Light brown Oonah Quartzite silt
419S	X	1	2	2	4	X	Light brown Oonah Quartzite silt
420M	X	2	4	3	2	0.8	Gully just east of line
99							
600 099 866M	X	2	10	14			Mud sample in small gully
867M	X	2	14	16			Mud sample in small gully
868M	X	2	12	12			Mud sample in depression on slope
869M	X	2	12	10			Mud sample on slope - outcrop of orange stained quartzite nearby at strike 340°

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
100							
601 100 092S		8	8	12	4		Black soil with angular quartz pebbles and weathered quartzite bedrock.
093S		2	6	8	4		Black soil - abundant outcrop of quartzite nearby. Charcoal fragments are also abundant
094S		2	4	16	6		Near E.M. 100 - soil is black. Inpenetrable bush prevented further sampling down slope
095S		2	6	12	4		Black soil - near siltstone outcrop
096S		2	4	12	4		Black soil - sandstone in bedrock
097M		2	4	10	4		In gully - stream sediment
101							
601 101 079S		X	X	4			Black soil with minor quartz pebbles (some rounded)
080S		X	X	10			Black soil (rare quartz)
081S		X	4	16			Black soil with minor quartzite frags.
082S		2	50	70			Black soil with minor quartzite frags.
083M		X	4	14			In creek, stream sediment (12½ m from 082)
084S		2	2	16			Black soil with rare white quartz bedrock comprised of black shale bleached white on rims
085M		2	2	6			In dry gully, stream sediment
086S		X	2	8			Black humic soil - no fragments
087S		2	8	16			Black humic soil - no fragments of soil sample traverse or sediment samples
088M		2	4	12			In creek, stream sediment. Quartzite outcrops in creek trending 030°
089M		X	2	12			In gully, stream sediment
090M		X	2	8			In gully, stream sediment
091M		X	2	6			In gully, stream sediment
102							
600 102 916M	X	2	12	16			Mud in gully, stream sediment
917M	X	2	8	12			Mud in gully, stream sediment
918M	X	2	10	14			Hill slope mud,
919M	X	2	10	24			Hill slope mud.
103							
601 103 039M		2	4	8			0.5 m wide drainage in non-outcropping Oonah Quartzite and Slate. Gravels (Tg) on hill to N.E.
040M		2	2	8			Gully draining east of E.M. 103 - slope wash. No outcrop
041S		2	8	6			20 cm deep in rounded gravels (Tg) on hill top
042S		X	2	6			20 cm deep in rounded gravels (Tg) on hill top
043S		X	2	6			30 cm depth: dark humic soil, some Tg; possibly partly residual

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 103 044S		2	4	8			20 cm depth on hillside, slope wash soil, minor Tg gravels; leached white siliceous siltstone (Oonah Quartzite)
045M		X	6	10			20 m west of anomaly 103: black humic soil in gully; rounded Tg gravels and white siltstone (Oonah) fragments
046S		X	2	10			30 cm depth in black humic soil, minor rounded quartz pebbles (Tg)
047S		X	4	10			Buff friable coarse sandy soil with Tg pebbles and country rock
048S		X	2	6			15 cm residual soil near outcrops of Oonah Quartzite (strike 070/dip N)
049S		X	4	8			On slope: no Tg, Oonah Quartzite soil
050M		X	6	8			Gully draining west at 45 m from 049(S)
051M		X	8	8			Gully (below 050M)
052M		X	6	8			Gully draining E.M. anomaly 103 to its west
							NOTE: No black shales were seen exposed around Anomaly 103. The anomaly itself is in a topographical low between Oonah Quartzites probably in shale.
106							TRAVERSE 1
600 106 164S		2	6	18	6		Light grey clayey soil - small Oonah fragments
165S		4	22	18	6		Dark brown soil - Oonah fragments
166S		4	16	16	4		Dark brown soil - Oonah fragments
167S		2	6	14	6		Dark brown soil - Oonah fragments
168S		X	6	10	4		Dark brown soil - moderate root penetration
169S		X	4	8	2		Dark brown soil - Oonah fragments
170S		2	6	16	2		Dark brown soil - Oonah fragments
171S		2	4	10	4		Dark brown soil - Oonah fragments
172S		4	8	10	4		Grey/brown soil, quartz fragments
							TRAVERSE 2
600 106 173S		X	4	16	2		Dark brown soil - deep root penetration
174S		X	4	12	4		Dark brown soil - deep root penetration
175S		X	10	18	4		Light grey/brown soil
176S		X	6	20	10		Light grey/brown soil
177S		2	4	12	6		Dark brown soil - weathered Oonah fragments
178S		2	6	14	8		Grey clay
179S		X	4	12	2		Grey/brown soil - siltstone fragments - thin soil cover
180S							Grey/brown soil
181S		X	4	10	4		Dark brown soil quartz fragments
							TRAVERSE 3
600 106 751S		4	8	20	8		Black muddy sample on hill
752M		2	6	10	4		Mud sample - i.e. gray sandy - black shale in creek

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 106 753S		4	10	18	4		High root penetration - black soil
754S		2	14	10	4		High root penetration - black soil
755S		2	6	12	4		High root penetration - black soil
756S		2	8	10	4		Dark grey soil - Oonah fragments
757S		2	10	10	4		High root penetration - black soil
758S		2	6	12	X		Light grey soil - Oonah fragments
759S		2	10	12	4		Black soil - high root penetration
760M		2	10	10	2		Mud in creek
761M		X	12	10	4		Mud in tributary creek, high root penetration
762S		2	4	14	4		Grey soil in quartz scree - on hill
763S		2	6	16	4		Black soil - (steep slope near hill crest)
764S		2	8	20	8		Grey soil in quartzite scree
							TRAVERSE 4
600 106 765S		2	8	20	16		Grey sandy soil - quartzite fragments
766S		2	6	34	14		Grey soil - fragments of grey/black shale
767S							Grey soil - quartzite fragments
768S							Grey soil - quartzite fragments
769S		2	4	16	4		Grey soil - quartzite fragments - quartzite outcrops 285°/80°S
770S							Grey soil - quartzite scree
771S		X	6	10	2		Dark grey soil
772S		2	4	16	8		Light grey soil - quartzite scree
773S		2	6	10	4		Dark grey soil
774S		2	6	16	2		Brown soil in quartzite scree
775S		2	4	16	4		Dark grey/brown soil - quartzite fragments
776S		2	6	18	4		Grey brown soil - quartzite fragments
777S		X	4	18	4		Dark grey soil in quartz scree
778M		X	10	14	4		Mud sample in small creek 50 m N.W. of 776(S)
779M		4	8	20	4		Mud - 2nd order creek S.E. of traverse
107							
601 107 066S		X	2	6			On eastern edge of dirt road to Pieman River, sandy brown soil contains quartz fragments
067S		4	2	6			Soil with rounded pebbles (Tg)
068S		2	4	6			Black soil
069M		2	4	8			In gully, stream sediment
070S		X	4	4			Buff pebbly soil (Tg)
071S		2	4	6			Buff pebbly soil (Tg)
072S		X	4	6			Gravelly soil
073M		2	4	8			In gully, stream sediment

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 107 074S		2	4	8			Soil rich in pebbles (Tg wash)
075S		2	4	6			On slope, black soil
076S		2	4	6			On hill top buff pebbly soil END OF SOIL SAMPLE TRAVERSE
077M		2	4	8			In gully, stream sediment
078M		2	2	6			In gully, stream sediment
108							
601 108 053S		2	4	6			Soil samples of 25m spacing on 115°M 20 cm colluvial side slope soil; no rounded Tg pebbles; black organic soil with quartz fragments (veining in Oonah Quartzite)
054S		2	2	6			25 m from 053(S) rare rounded Tg
055S		X	4	8			Black humic soil, rare Tg on side slope
056S		X	4	8			25 m from 055(S): Black humic soil, rare Tg on side slope
057S		X	6	10			10 m west of Anomaly No. 108: black soil, minor Tg at 40 cm
058M		X	6	8			14 m from 057(S) along line at 115°M black soil, rounded Tg pebbles
059S		X	4	12			25 m from 057(S): 30 cm brown humic soil, abundant Tg
060S		X	4	8			25 m from 057(S): 30 cm brown humic soil, abundant Tg
061S		2	6	12			25 m from 057(S): 30 cm brown humic soil, abundant Tg
062S		X	6	8			As for 059(S) with lighter soil
063S		2	4	16			At edge of creek bank 25 m from 062S; black humic soil, weathered bedrock and Tg pebbles END OF LINE
064M		X	6	8			Minor gully on west side of creek draining N.E., no outcrop
065M		4	8	12			Minor drainage on N.E. side of E.M. Anomaly 108: slope wash soil
109							
600 109 937M	X	2	10	18			Mud in 3rd order gully
938M	X	2	12	8			Mud in 3rd order gully
939M	X	2	12	12			Mud on slope
940M	X	2	10	10			Mud on slope
941M	X	2	12	10			Mud on slope
942M	X	2	10	10			Mud on slope
110							
600 110 943M	X	2	12	12			Mud in small gully
944M	X	2	12	16			Mud in small gully
945M	X	2	14	10			Mud on slope - quartzite outcrops 360° strike - copper Turam wire at this anomaly

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
111							
600 111 902M	X	2	2	5		X	Hill slope mud
903M	X	1	2	2		X	Hill slope mud
113							
601 113 160R		10	10	80	18		Limonitic ooze in black siltstone with abundant quartz veining
161R		6	6	24	8		Quartz veins containing pyrite (same locality as 601-113-160R)
162M		2	6	24	8		On banks of Trail Creek, stream sediment
163S		16	22	32	4		On banks of slope, float of grey, quartz veined shale
164S		8	16	30	4		On slope, black siltstone float
165R		10	10	22	10		Black siltstone with ? marcasite
166M		2	6	20	8		Stream sediment, powerful H_2S smell
167S		6	18	40	16		On slope, yellow soil, ? upraised alluvium (contains small rounded pebbles)
168M		2	4	12	10		Stream sediment
169S		2	6	16	4		On slope
170S		4	6	14	6		On slope, float of quartz veined quartzite
116							
600 116 935R	100	30	88	150			Fe rich quartz on Pieman River bank; black shale
936R	20	66	140	90			Fe rich quartz on Pieman River bank; black shale (Renison Bell tailings contamination
117							
600 117 932M	X	2	10	10			Mud in creek
933M	X	2	14	14			Mud on slope of bank
934	Not Sampled						No sample taken
118							
600 118 920M	X	2	12	20			Mud in 3rd order gully
921M	X	2	14	22			Mud in 3rd order gully
922M	X	2	12	8			Mud in 3rd order gully
923M	X	2	10	10			Mud on slope
924M	X	2	10	8			Mud on slope
925M	X	2	14	12			Mud in 3rd order gully - quartzite strike 090°
121							
600 121 926M	X	2	14	10			Mud in hollow on hill
927M	X	2	10	4			Mud in hollow on hill
928M	X	2	12	6			Mud in hollow on hill, some quartzite outcrop

041

441042

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
124							
600 124 929M	X	2	10	12			Mud in 3rd order gully
930M	X	2	12	22			Mud on bank
931M	X	4	26	28			Mud on bank
125							
601 125 234S		X	8	20	4		On slope, black soil
235S		2	24	28	4		On slope, white quartzite bedrock
236S		2	6	18	4		On slope, dark soil
237M		2	8	24	4		On slope, in small gully "stream"fed
238S		2	12	24	4		On slope, grey quartzite bedrock
239S		2	14	30	4		On slope, Fe stained siltstone bedrock
240M		2	6	18	4		In small gully → on south slope
200 m E.S.E. of 125							
601 SPOT 231S		4	6	18	6		Brown soil, limonitic quartz veined silt-stone bedrock
232S		16	10	32	8		Brown soil, limonitic quartz veined silt-stone bedrock
233R	60	36	18	36	10		Bedrock of 232(S) (?) silcrete type material
128							
601 128 216M		2	8	14	6		A very gravelly soil/quartz and quartzite fragments
217S		2	10	14	4		On ridge, black soil containing quartz pebbles
218S		X	4	10	4		Grey soil quartz veined quartzite bedrock
219S		X	8	14	2		On edge of stream bed, black soil, quartz and quartzite fragments
220M		4	6	20	6		Grey/black soil (gritty)
221S		2	10	28	12		Grey mottled soil, grey micaceous silt-stone bedrock
222M		X	6	12	6		In stream, stream sediment
223S		X	4	10	4		Grey gritty sand
224M		2	8	16	4		Stream sediment
225M		X	2	12	4		Stream sediment
226S		X	8	16	2		Black soil
227M		2	8	20	2		Stream sediment in gully
228S		2	6	16	2		Grey quartzite bedrock
229M		2	2	10	2		Stream sediment in small gully
230S		X	6	10	2		Black gritty soil
248S		2	6	10	4		Gritty grey soil containing quartz and quartzite fragments and micaceous quartz-ite bedrock
249S		X	4	10	4		As above, but less gritty

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
601 128 250S		X	6	10	4		Grey siltstone/quartzite fragments
251M		X	8	16	6		In gully, stream sediment
252S		X	6	10	4		Grey grit
253M		X	4	14	4		Grey gritty mud (in gully)
254S		X	6	12	2		Grey grit and fragments
255S		X	6	14	4		Grey grit and fragments, quartzite (white) bedrock
256S		X	6	10	2		Grey grit and fragments, quartzite (white) bedrock
129							
601 129 194M		X	6	10	4		Black mud from minor creek
195M		2	4	16	4		Black gritty mud from creek
196S		2	2	14	4		Soil-sample, approximately 50 m west of E.M. 129 with grey/brown gritty soil with small angular quartz fragments
197S		2	6	20	6		As above, but with larger quartz and quartzite fragments. Bedrock is a micaceous quartzite
198S		2	4	24	12		As above, some quartzite fragments are iron-stained
199S		2	2	20	8		As above, except fragments are smaller
200M		2	6	18	4		Black gritty mud
201		2	4	18	8		Soil from downslope of outcrop of micaceous quartzite. Grey/brown sandy soil with abundant fragments
202M		4	4	10	4		Mud from major creek
203S		4	18	24	14		Black shale fragments in yellow/brown clayey soil
204S		2	6	20	10		Yellow/brown clayey soil with siltstone and quartzite fragments (some iron stained)
205S		2	8	20	6		Brown, gritty soil with abundant quartz fragments
206M		2	8	20	6		Black mud from major creek
207S		6	22	20	16		Yellow/brown soil with quartz fragments with cavities
208M		2	8	14	4		Grey/black gritty mud
Minor E.M. Anomaly N.E. of Anomalies 29							
601 129 241S		2	8	10	2		Black clayey soil
242S		2	8	16	6		Grey limonite Fe stained soil with quartz and quartzite fragments
243M		2	16	16	2		In creek, stream sediment
244S		2	6	12	6		Close to anomaly centre, quartz veined, quartzite bedrock
245S		2	6	14	8		Black soil on top of quartzite
246M		4	16	22	4		In creek, stream sediment
247M		2	6	12	4		In small gully, stream sediment

E.M. ANOMALY/ SAMPLE NUMBER	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
130							
601 130 209M		4	8	24	6		In major creek, black mud
210S		2	4	12	6		Grey/brown soil with siltstone fragments siltstone bedrock
211S		2	4	8	4		Sample from peak of spur; grey/brown soil with siltstone fragments, siltstone bedrock
212M		2	6	12	6		Mud from gully - 60 m south of E.M. 130
213S		2	6	10	2		Gravelly soil - grey/brown, with micaceous quartzite fragments and quartz
214S		2	4	10	2		Gravelly soil - grey/brown, with micaceous quartzite fragments and quartz
215M		2	6	10	2		Sandy mud from minor gully
145							
601 145 184M		4	16	20	4		Stream sediment - in "swamp"
185S		2	20	16	8		Silty, dark grey soil
186S		4	20	20	10		Silty, dark grey soil with angular, crystalline quartz fragments (vien quartz ?)
187S		18	50	34	20		Soil from a mound of shale fragments, Yellow, clayey soil
188S		2	6	16	6		Grey, silty soil
189S		2	10	20	6		Silty soil - quartzite bedrock
190S		2	10	20	4		Quartzite bedrock with leached, silty soil
191S		2	10	16	4		On top of ridge, near E.M. 145: Leached, silty soil with abundant vegetation roots
192S		X	6	18	6		At bottom of ridge (which is the expression of the Keel Quartzite) - silty soil
193S		X	2	12	4		Black, silty soil from alluvial flat
147							
601 147 171M		2	6	12	4		Black mud in gully
172S		2	4	12	4		Black soil with quartzite (sandstone ?) fragments
173M		2	8	16	4		Black mud in gully near end of small creek (where it meets the alluvial plains
174S		2	6	20	4		Black soil plus quartzite fragments
175S		X	4	12	2		Black soil plus quartzite fragments
176S		X	4	16	4		Black, silty soil from location of E.M. 147. The ground is boggy and dense bush goes in a line trending N.N.W. (fault zone ?)
177S		X	6	10	4		Black, silty soil
178S		X	4	10	2		Black, silty soil
179M		X	8	10	4		Mud from small creek (flowing)
180S		2	12	16	6		Black, silty soil
181S		2	18	20	18		Grey, clayey soil with quartzite fragments; quartzite is bedrock here
182S		X	4	10	4		Black silty soil with grey mottles and quartzite fragments
183S		X	4	10	2		Black, silty soil

APPENDIX II

GEOCHEMICAL ANALYSES : E.M. ANOMALY 142

APPENDIX II

SAMPLE NUMBER/ LINE SAMPLED.	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
LINE 1300 N							
600 142 240S	X	9	10	11		X	Light grey sandy soil
241S	X	44	85	28		2.2	Brown/orange soil ? Fe rich?
242M	X	3	9	15		X	Grey/light grey soil, some qtz.
243M	X	9	8	15		0.4	Light grey mud, small ck.
244S	X	16	8	11		0.2	Fine grey soil - minor qtz grains
245R	20	18	40	20	8	1.0	Fe rich black shale - carbonaceous
246S	X	10	7	12		0.2	Light grey soil, minor qtz. fragments
247S	X	8	14	22		0.2	Brown soil - grey/black shale beneath
248S	X	8	11	19		0.2	Fine grey soil - minor quartz
249S	X	4	10	22		X	Light grey soil, quartz fragments
250S	X	2	6	7		0.2	Light grey soil, quartz fragments
251S	X	1	4	9		0.2	Light grey soil, quartz fragments
252S	20	3	3	8		X	High root penetration - light grey soil
253S	X	3	2	7		X	Fine light grey soil
254S	X	5	30	12		X	Light grey soil - quartzite fragments
255S	X	2	9	11		0.2	
256S	X	2	3	9		X	Light grey soil - minor quartz fragments
257S	20	6	5	16		0.2	Grey soil in quartz scree
258S	20	2	10	11		0.2	Grey brown soil - high root penetration some quartzite fragments
LINE 1900 N							DUNKLEYS TRAMWAY BASE PEG: 1000W LINE: 1900N
600 142 259S	20	20	100	42		2.2	Brown/orange clay & minor quartz (1900W)
260S	20	6	28	23		0.4	Dark grey/brown soil - some quartz and quartzite (1875W)
261S	20	4	6	10		0.2	Dark grey/brown soil - some quartz and quartzite (1850W)
262S	X	9	28	47		0.6	Light brown/orange soil - minor quartz (1825W)
263S	20	4	59	23		0.2	Light brown soil & quartzite (1800W)
264S	20	4	19	16		0.6	Dark brown grey soil - quartzite fragments (1775W)
265S	20	3	10	14		0.2	Dark brown soil, quartz sand (1750W)
266S	20	2	9	12		0.2	Light grey soil - fragments - siltstone? OR grey shale (1725W)
267S	X	2	10	14		0.2	Light grey/brown soil & fragments of quartzite, grey shale? (1725W)
268S	X	2	7	11		X	Light grey soil - quartzite fragments (1750W)
269S	X	2	5	9		X	Light sandy soil (1650W)
270S	X	2	8	15		X	Light grey/brown soil, quartz fragments (1625W)
271S	X	9	30	31		2.2	Light grey leached soil - high root penetration (1620W)
272S	X	4	3	6		0.2	Dark brown soil - high root penetration (1595W)

SAMPLE NUMBER/ LINE SAMPLED.	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 142 273S	X	2	8	14		X	Dark brown soil - high root penetration (1550W)
274S	X	3	11	22		0.2	Light brown soil - large quartz fragments (1525W)
275S	X	4	19	15		0.2	Dark brown humus - quartzite fragments (1500W)
276S	X	2	5	6		0.2	Dark brown/grey soil - quartzite fragments (1475W)
277S	X	3	9	17		0.2	Light grey soil - quartzite fragments (1450W)
278M	X	3	10	10		X	Dark mud gully, qtzite. frags. (1437.5W)
279S	20	4	48	16		1.4	Dark brown soil - high humus content (1425W)
280S	20	3	7	5		X	Light grey soil (1400W)
281S	X	5	21	23		0.2	Light grey/brown soil - deep root penetration & quartzite (1375W)
282S	X	2	5	7		X	Dark brown topsoil - grey soil with quartzite underneath (1350W)
283S	X	3	7	9		X	Dark brown soil - high root penetration (1378W)
284M	20	2	5	5		X	Grey mud with fragments of black shale and quartzite (1310W)
285S	20	2	8	8		X	Light grey sandy soil (1250W)
286S	20	4	30	13		X	Dark brown humus rich ? soil (1225W)
287S	X	3	9	10		0.2	Light grey soil - quartzite fragments, some samples missed out due to vegetation (1170W)
288S	X	2	4	8		X	Light brown soil - minor quartz (1145W)
289S	X	2	9	10		X	Light grey soil (1125W)
290S	X	2	11	10		X	Light grey soil (1100W)
291M	X	1	5	6		X	Grey mud & black shale (1070W)
292S	X	2	5	9		0.2	Light grey clayey soil - high root penetration - shale & qtz. frag. (1040.0W)
293S	X	3	3	7		X	Light grey soil - qtz. fragments (1015W)
294S	X	2	6	12		X	Light grey soil (0975W)
295M	X	1	3	5		X	Grey mud - fragments of black shale and quartz (0975W)
296S	X	1	5	8		0.4	Light grey soil with quartzite fragments (0950W)
297S	X	2	6	7		0.2	Light grey soil quartzite frag. (0925W)
298M	X	3	10	10		0.2	Dark grey mud (0906.25W)
BASE LINE 1000 W							
299M	X	2	4	4		X	Grey mud (1900N)
300S	X	2	4	6		X	Light grey alluvium in creek (1875N)
301M	20	8	30	22		0.8	Grey mud on creek band (1850N)
302S	X	5	11	12		0.4	Light grey soil quartz fragments (1800N)
303S	X	7	11	15		0.4	Light grey soil and orange clay (1775N)
304S	20	5	9	9		0.2	Light grey soil (1750N)
305S	20	12	15	16		0.4	Light grey/brown soil (1725N)
306S	20	18	27	30		0.6	Light grey soil & quartz fragment (1700N)

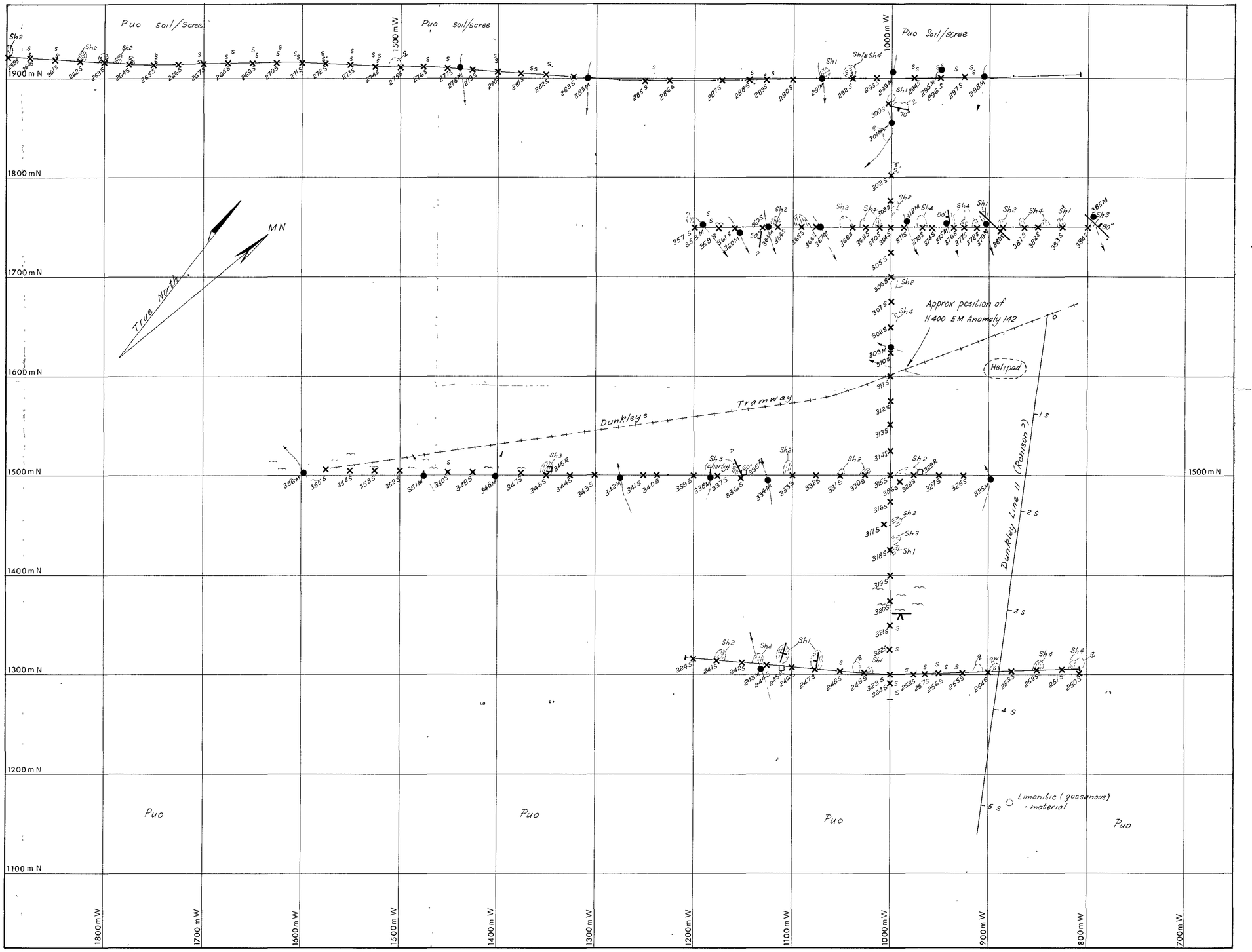
SAMPLE NUMBER/ LINE SAMPLED.	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 142 307S	X	6	9	11		0.2	Light grey soil & quartz fragments (1675N)
308S	X	29	51	33		0.6	Dark grey soil, quartzite frags. (1650N)
309M	X	3	5	17		0.2	Dark mud on bank of creek (1630N)
310S	X	8	8	80		0.2	Dark brown soil with quartzite fragments. (1623N)
311S	20	26	370	200		5.4	Dark brown humus soil and dark rock (Dunkleys Tramway contamination (1600N)
312S	20	8	5	10		0.2	Dark brown soil (1575N)
313S	20	47	58	24		1.8	Light brown soil & quartz fragment (1550N)
314S	20	4	5	11		0.2	Light brown soil & quartz fragment (1525N)
315S	20	4	16	16		0.4	Bright orange clay (1500N)
316S	X	23	51	48		1.4	Brown soil and grey shale fragment (1475N)
317S	X	14	35	30		1.2	Orange/brown clay soil (1450N)
318S	X	12	42	27		0.6	Grey soil with quartz and shale fragments (1425N)
319S	X	20	29	40		0.6	Dark brown soil (1400N)
320S	X	7	7	19		0.4	Light grey soil (1375N)
321S	X	9	5	17		0.2	Dark grey soil and quartz fragment (1350N)
322S	X	3	23	9		0.2	Light grey to white soil and quartz fragments (1325N)
323S	X	2	5	9		0.2	Light grey to white soil with quartz (1300N)
324S	20	1	5	13		0.2	Light grey soil (1293.75
LINE 1500 N							
600 142 325M	20	9	10	17		0.2	Greenish brown mud (0900W)
326S	X	3	7	8		0.2	Light brown soil - orange streaks (0925W)
327S	X	4	4	10		0.2	Grey soil with quartz fragments (0950W)
328S	20	22	54	30		1.0	Brown/orange soil and fragments of Fe-stone (0975W)
329R	20	60	160	30	14	1.8	Iron stone (0975W)
330S	X	14	20	12		0.6	Orange/brown soil (1025W)
331S	X	8	14	15		0.6	Orange/brown clay (1050W)
332S	20	10	25	28		0.4	Brown soil (1075W)
333S	X	9	16	15		0.4	Dark brown clayey soil with orange streak (1100W)
334M	X	20	18	36		0.4	Dark brown mud (1125W)
335R	X	40	65	16	4	0.8	Greenish chert - Fe rich, possible pyrite voids? (1150W)
336S	X	9	11	11		0.4	Light grey/brown soil with Fe stone fragments (1150W)
337S	X	10	19	19		0.4	Brown/orange soil - quartz & Fe fragments (1175W)
338M	X	2	4	9		0.2	Light grey soil and quartz in gully (16.25 m E of 1200W)
339S	20	4	5	20		X	Dark grey soil
340S	X	1	4	4		X	Dark brown soil (1237W)
341S	X	1	5	4		X	Dark brown soil (1250W)
342M	20	2	14	20		0.2	Dark mud with quartz sand in creek (1275W)

04

441049

SAMPLE NUMBER/ LINE SAMPLED.	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 142 343S							Light grey soil (1300W)
344S							Bright orange clay (1325W)
345R	20	32	102	38		3.6	Greenish schist ? with possible pyrite voids? (1350W)
346S							Orange/brown soil - Fe stone frags (1350W)
347M	X	5	14	16		0.2	Dark grey mud (1375W)
348M	20	4	12	11		0.2	Light grey mud (1400W)
349S	X	4	10	27		0.4	Light brown soil with quartz and black shale fragments (1425W)
350S	X	4	6	21		0.2	Dark grey soil - minor quartz (1450W)
351M	20	2	6	10		0.2	Light brown mud with quartz frags. (1475W)
352S	X	2	5	7		X	Brown sandy soil (1500W)
353S	X	3	5	22		X	Grey sandy soil (1525W)
354S	X	7	31	125		0.2	Dark brown soil (1550W)
355S	20	90	5000	0.51%		20	Green soil - Fe stone - galena (contamination: on tramway) (1575W)
356M	X	2	10	10		X	Light brown mud (1600W)
LINE 1750 N							
600 142 357S	X	2	7	7		X	Brown clay - white quartz streaks (1750N/1200N)
358M	X	3	6	6		0.2	Creek sediment - large quartz pieces : drains Oonah towards 085°N flat (1150N/1187W)
359S	X	14	8	8		0.2	No O/C in flat area on boggy ground (1750N/1175W)
360M	X	2	3	6		0.2	Drainage - mainly Oonah - drains to 080° (1750N/1175W)
361S	X	5	4	10		0.4	Residual soil - cream clay - some quartz Oonah shale? (1160W/1750N)
362S	20	42	16	19		1.0	Banded shale probably Crimson Creek, Black shale O/C nearby - possibly 135°/50°W dip but slumped and hard to read (1131W)
363M	X	4	4	11		0.2	Mud (1127W)
364S	X	8	12	17		0.8	Pale green clay-shale-quartz veins (1115W)
365S	X	8	13	14		0.4	Dark grey/brown soil, clayey - no quartz probably shale from Oonah (1093W)
366S	X	3	5	10		0.4	Creek bank drainage 092 yellow pale clay= shale (1077W)
367M	X	2	6	6		0.2	Broad gully → 090°N (1068W)
368S	X	7	11	7		0.8	Residual soil pale limonitic shales as for 366(S) (1038W)
369S	20	3	8	10		0.4	No outcrop - pale grey clay - probably residual slate (1028W)
370S	20	6	19	30		0.4	Pale grey clay - minimal pieces shale (1012W)
371S	X	8	14	14		0.6	Grey shale soil (0987W)
372M	X	10	42	44		0.4	Drainage east at 116°M(Oonah) (0982W)
373S	X	5	9	15		0.4	Soil on dark grey shale (0968W)
374S	X	5	6	12		0.2	Slope wash - no outcrop (0957W)
375M	X	5	6	12		0.4	115°N drainage quartz rich Oonah (0943W)

SAMPLE NUMBER/ LINE SAMPLED.	Sn	Cu	Zn	Pb	Bi	Ag	SAMPLE DESCRIPTION
600 142 376S	20	10	18	26		0.8	Bank of creek - grey shale outcrop - no strong veining or staining strike 120°/ dip 80°S (0941W)
377S	20	9	27	17		1.0	Grey shale soil - no outcrop, probably residual (0912W)
378S	X	4	12	15		0.2	Grey shale soil - no outcrop, probably residual (0912W)
379S	X	10	20	35		0.4	Gully drainage 122°N black shale on bank strike 090 - dip steep
380S	X	5	14	19		0.4	Clayey brown soil (0887W)
381S	X	3	9	10		0.2	Pale shale scree (0865W)
382S	20	13	32	40		0.6	Residual brown soil - organic 850W (dark grey shale at (842W) (842W)
383S	20	14	24	17		0.4	Limonitic shaley - minimal quartz - limonitic black shale (0825W)
384S	20	4	8	5		0.2	No outcrop - probably Oonah - hard white quartzose sandstone with white clay specks (feldspar) (500W)
385M	X	3	4	6		0.2	Drainage 080 at 787W shale outcrop 085/ dip 80°W, greenish grey shale
600 142 386S	X	28	42	27	4	1.4	Limonitic yellow/brown shale - limonitic patches B/L 1000W (Dunkleys Tramway) (1500N/987W)



REFERENCE

QUATERNARY
- Alluvium
- Soil

CAMBRIAN — Ec
- Crimson Creek Formation
- Various shale types -
- Sh1 - blackshale
- Sh2 - red/brown/yellow shale
- Sh3 - green shale (includes green shaley chert)
- Sh4 - grey shale, pale cream shale (possibly Puo in part)

PROTEROZOIC to LOWER CAMBRIAN — Puo
- Oonah Quartzite and Slate
- q - quartzite

- Dunkleys Tramway
- Creek
- Strike & dip of bedding
- (base of slope) Edge of alluvium
- Drainage sample (xyz M)
- Soil sample (xyz S)
- Rock chip sample (xyz R)

All sample numbers prefixed by 600142(xyz)

5 cm

0 50 100 150 200 metres

441051 76-1183

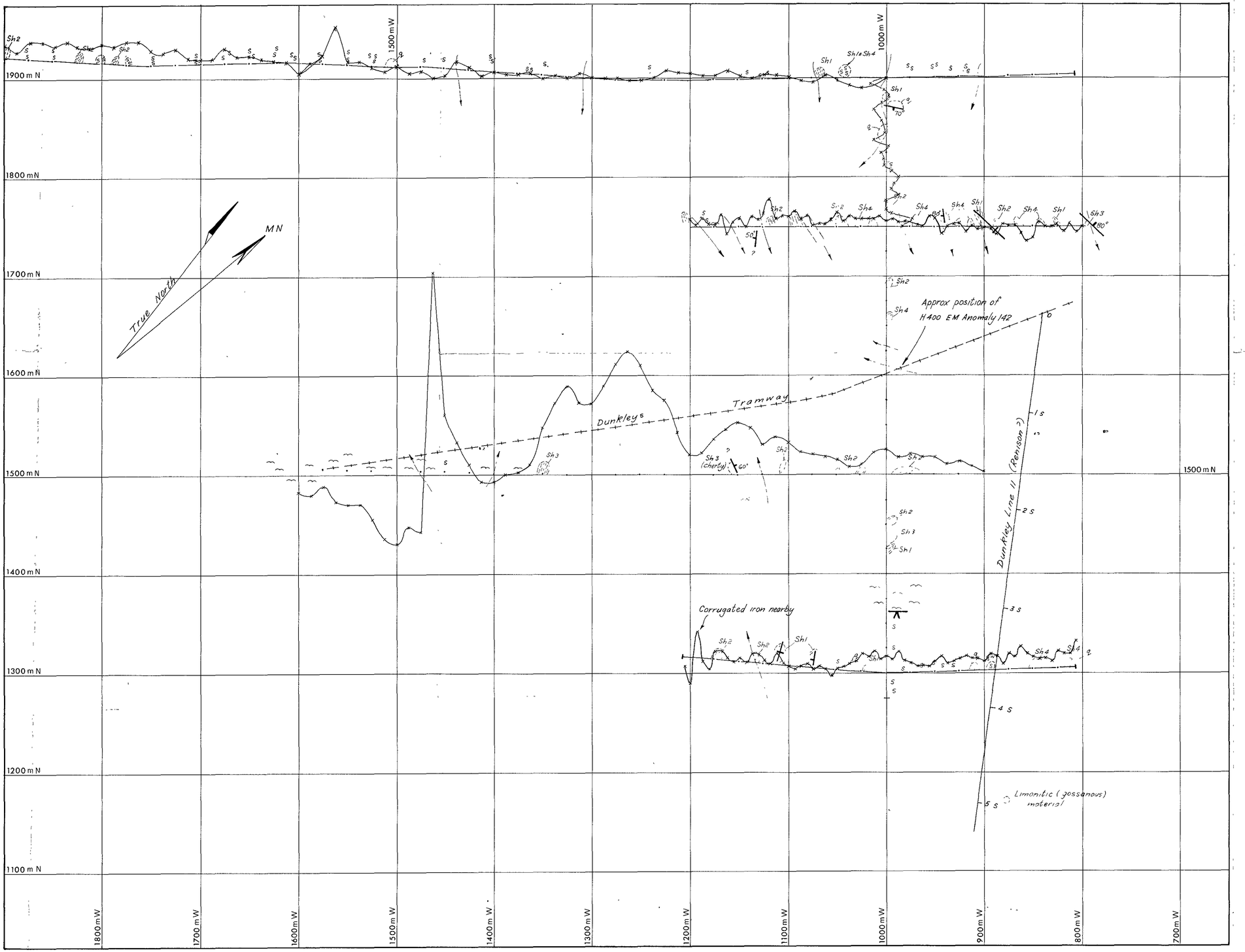
PACMINEX PTY. LIMITED

AIRBORNE H400 EM ANOMALY 142
DUNKLEYS TRAMWAY
ZEEHAN TASMANIA
GEOLOGICAL & SAMPLE LOCATION PLAN

Scale	1 2500
Drawn	PMM / PH
Date	Sept 76
Revised	

K555-1

1635



REFERENCE

QUATERNARY — Alluvium

QUATERNARY — Soil

CAMBRIAN (Ec) — Crimson Creek Formation
Various shale types -
Sh1 - blackshale
Sh2 - red/brown/yellow shale
Sh3 - green shale (includes green shaley chert)
Sh4 - grey shale, pale cream shale (possibly Puo in part)

PROTEROZOIC to LOWER CAMBRIAN (Puo) — Oonah Quartzite and Slate
q - quartzite

Dunkleys Tramway

Creek

Strike & dip of bedding

(base of slope) Edge of alluvium

625208
625108
625008
624908
624808

Scale for Magnetics

Grid line

5 cm

0 50 100 150 200 metres

441052 76-1183

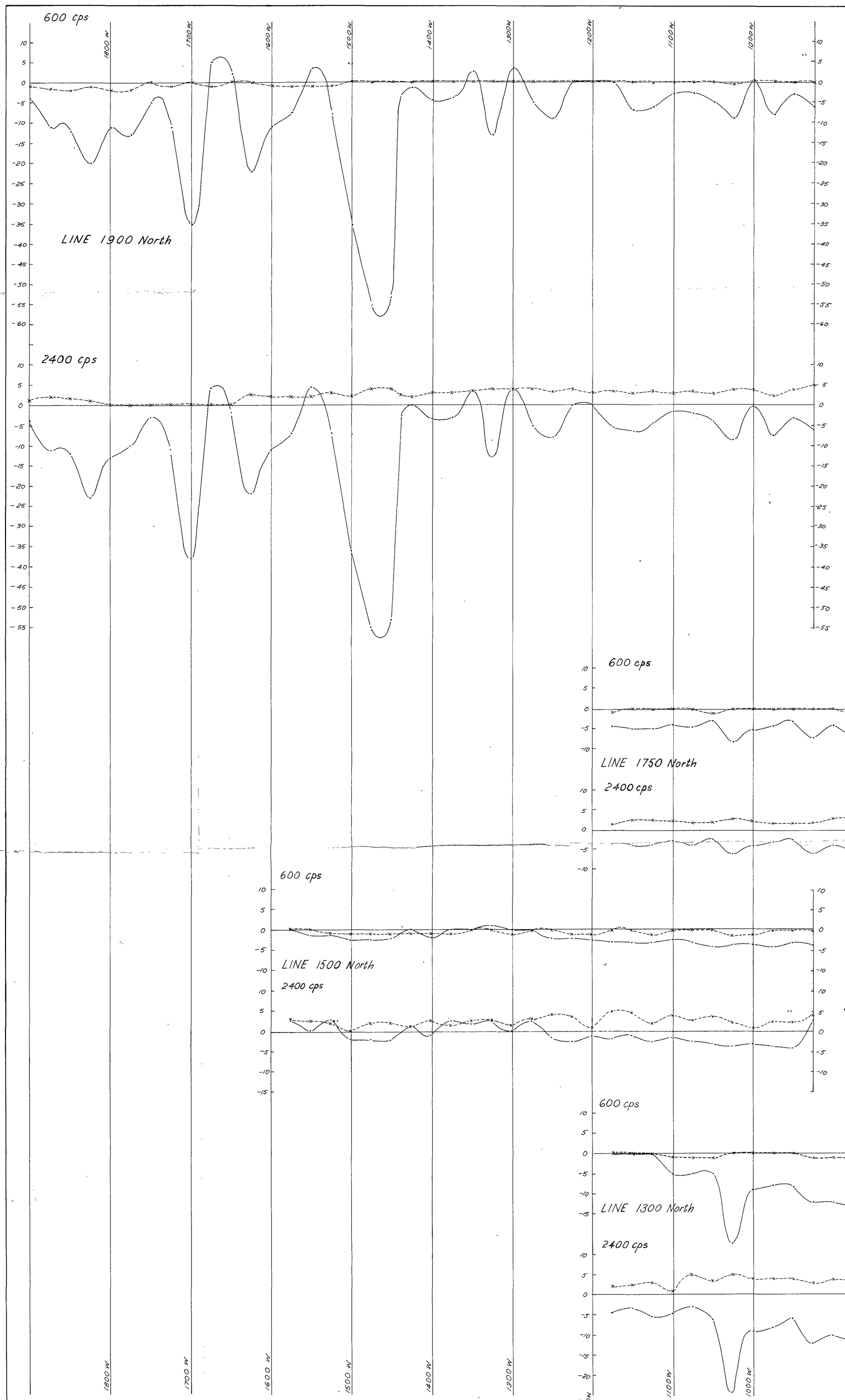
PACMINEX PTY. LIMITED

AIRBORNE H400 EM ANOMALY 142
DUNKLEYS TRAMWAY
ZEEHAN TASMANIA
GROUND MAGNETIC PROFILES

Scale	1 2500
Drawn	PMM / PH
Date	Sept 76
Revised	

K555-2

1636



Reference

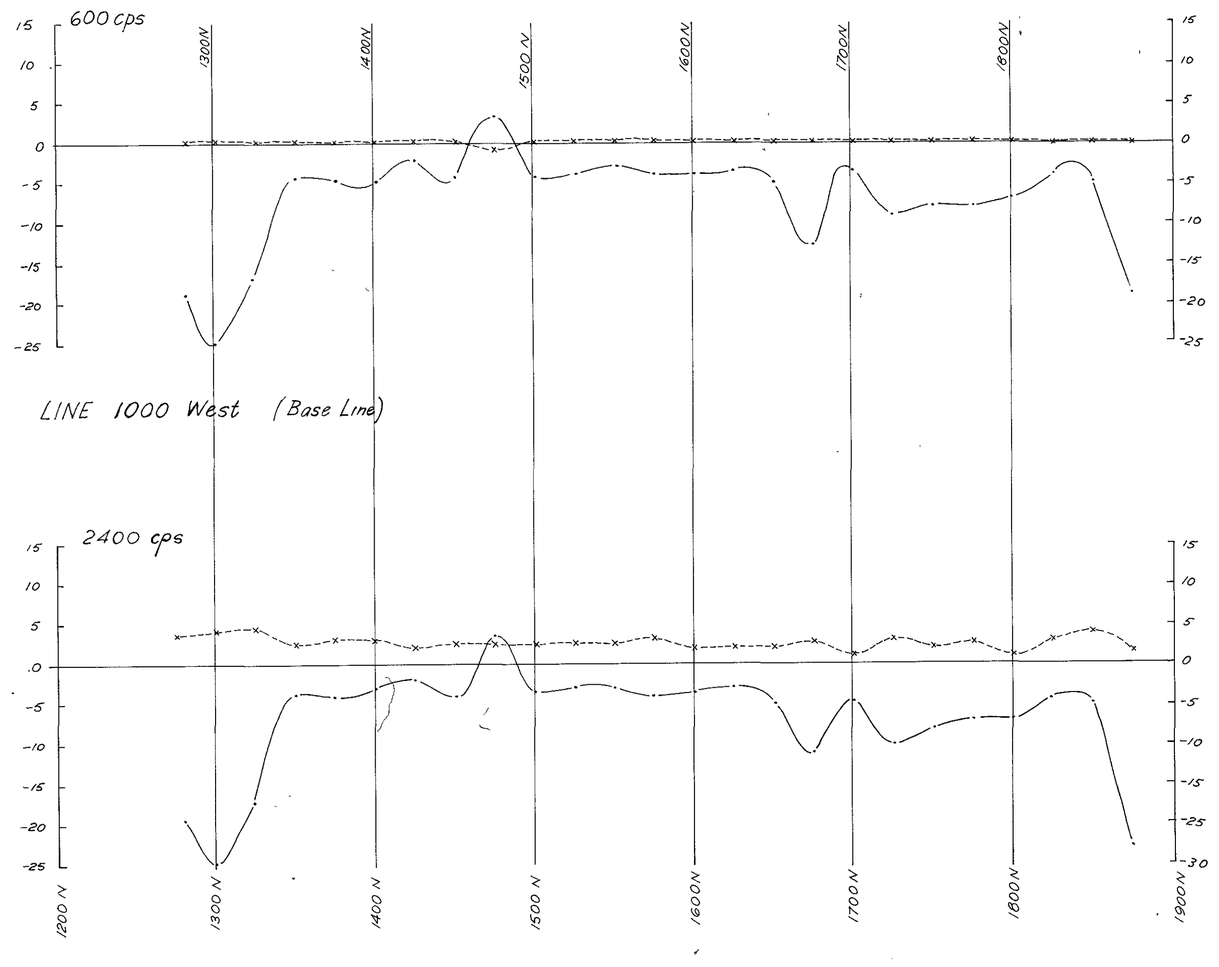
In phase

Out of phase

Frequences - 600 & 2400 cps

Spacing - 100 ft

Attitude - Transmitter west



Note - McPhar VHEM instrument used

441053

5 cm

76-1183

PACMINEX PTY. LIMITED

AIRBOURNE H400 E M ANOMALY 142
DUNKLEYS TRAMWAY
ZEEHAN TASMANIA

HORIZONTAL E.M. TRAVERSES

Scale	As shown
Drawn	P M M / P H
Date	Oct 76
Revised	

K555-3

1637

1638

REFERENCE

QUATERNARY	Qra	Alluvium
	Qrg	Gravels
	Qrs	Older alluvium marsh deposits, downwash etc.
	Ql	Limonitic bodies
TERTIARY	Tg	Gravels
PERMIAN	Pt	ZEEHAN GLACIAL FORMATION Pebbly mudstone
DEVONIAN	Db	Bell Shale
	Df	Florence Quartzite
SILURIAN	Sac	Austral Creek Siltstone
	S R	Keel Quartzite
	Sa	Amber Slate
	Sc	Crotty Quartzite
ORDOVICIAN	Og	Gordon Limestone
	Om	Moina Sandstone
CAMBRIAN	Ec	CRIMSON CREEK FORMATION
	E	
	Ecs	Siltstone
	Ecl	Limestone
	Ecc	Chert
	Ecuc	"Upper chert"
	Eclc	"Lower chert"
PROTEROZOIC	Puo	Oonah Quartzite & Slate

IGNEOUS ROCKS

JURASSIC	Jdl	Dolerite
DEVONIAN	Dg	Heemskirk and Meredith Granites diorite
	Dd	
	Dqp	quartz porphyry
CAMBRIAN	Eb	Basic and ultrabasic rocks (gabbro, serpentine, dolerite etc.)
	V	Volcanics (Proterozoic and Cambrian)

NOTE General notation:- q = quartzite, s = siltstone, sh = shale, m = mudstone, c = chert, l = limestone, v = volcanics, t = tuff

- Geological boundary approx, inferred
- Angular unconformity
- 15° Strike and dip of beds
- Vertical beds
- Bedding (photo interpreted)
- Joints
- Cleavage
- Strike and dip of shearing
- Fold axis plunge
- Drag fold
- Minor anticline
- Minor syncline
- (?)F — ? — F(?) Fault, inferred fault
- Prospect (approx position)
- Plunging anticline
- Plunging syncline
- Limonitic bodies (gossans etc)
- Watercourse
- Road, track
- Swamp
- E L Boundary
- Button grass
- Alluvium flats
- Expired Lease boundary

AEROMAGNETIC TRENDS

- Magnetic peaks on flight lines, and their trend
- Magnetic lows on flight lines, and their trend
- Magnetic trends
- Possible magnetic trends
- b — In the Oonah Quartzite and slates (Puo); approximate boundary between smooth magnetics to the east and more irregular and increasing readings westwards, possibly indicates the presence of dolerite beneath the Puo to the west

Note - From the 1975 Airborne Mc Phar H400 EM/Magnetic survey Note that trends shown outside E.L 18/74 any distance from the boundary have had their positions extrapolated (i.e approx.)

NOTE Mapping based on field observations, 1 63360 Zeehan Tasmanian Dept of Mines Geological Map, Bulletin 15, and Mines Dept open file data

0 20m 40m 60m 80m 1 2 3 Km

5 cm

76-1183

PACMINEX PTY. LIMITED

GEOLOGY

& AEROMAGNETIC TRENDS E.L.18/74

STANLEY and PIEMAN RIVERS

WEST TASMANIA

441054

Scale	1 20,000
Drawn	PMM / PH
Date	August 1975 / Sept '76
Revised	

K 555-4

1638

MINES DEPT. RESERVE

E.L. 18/74

SURVEY BOUNDARY

E.L. 18/74

1900N

1750N

1600N

1450N

1300N

1150N

GROUND TRAVERSE LINE

N

MIN

Survey Area

T A S.

REFERENCE

(m) ● STREAM SEDIMENT SAMPLE LOCATION

(x) × SOIL SAMPLE LOCATION

(R) ⊡ ROCK CHIP SAMPLE LOCATION

SAMPLE DESIGNATION	Project No.	EM Anomaly	Sample No.
601	075	2194	601 125 2154
600	109	1942	600 109 1962

—M— AEROMAGNETIC PEAKS AND THEIR TREND

AIR PHOTO MOSAIC BASE (1:9000-1950 A NOMINAL 1:12,000 SCALE) BASED ON ENLARGED PHOTOS

SURVEY SPECIFICATIONS :—

HELICOPTER	Bell Jetranger 206B VH-BLR
E.M. SYSTEM	McPhar H-400 dual frequency sequential transmission. 340 Hz and 1070 Hz.
MAGNETOMETER	Geometrics G803 proton precession (reading accuracy ± 1 gamma)
DIURNAL RECORDER	Geometrics G806 proton precession magnetometer with Rustrack recorder and crystal clock.
ALTIMETER	Bonzar radar
ANCILLIARY EQUIPMENT	Geoex intervalometer Century 444 analogue light beam recorder Geoex film digital recorder Vinten 16 mm ground tracking camera
READING INTERVAL	1 023 seconds
NOMINAL AIRCRAFT SPEED	90 knots (Mean reading spacing 47 metres)
NOMINAL AIRCRAFT SURVEY ALTITUDE	140 metres (E.M. bird 50 metres, Mag. bird 120 metres)

A
B
C
D
E
SYMBOLS SHOW LENGTH, SHAPE & NO PEAK OF ANOMALY

Anomaly Slope
Recovered Fiducial
Magnetic Anomaly Peak and Amplitude
340 Hz Amplitude
Ratio - 340/1070 Hz
Line Number (At start of line)

CONDUCTIVE ZONE

SURFACE NOISE

DEFINITE, PROBABLE AND POSSIBLE CONDUCTOR AXIS

441055

5 cm

76-1183

PACMINEX PTY. LIMITED

E.L. 18/74 PIEMAN RIVER W. TAS.

GEOCHEMICAL TRAVERSES OF AIRBORNE ELECTROMAGNETIC ANOMALIES

SCALE 1: 5000

SCALE 100 0 100 200 300 400 500 METRES

1639

SURVEYED APRIL 1975	GEOLOGIST P.M.M.		
DRAWN BY N.B.J.B.	DATE SEPT. 1976	K555-5	

1639