000

C.R.A. EXPLORATION PTY. LIMITED

79-1382.

140001

THE BALFOUR - SPECIMEN HILL PROGRAM

SIX MONTHLY REPORT TO JUNE 26, 1979

Author : T.M. PORTER

Date : 18th August 1979

Submitted to : R.J. Rebek

Copies to :
: L & L Syndicate - C/- M. Laan
: L & B Syndicate - C/- P. Laan
: Geopeko Ltd. - C/- R. Large
: Tasmanian Department of Mines - Hobart
: CRAE Library (Melbourne)
: CRAE Burnie Office

001

140002

C.R.A. EXPLORATION PTY. LIMITED
(Incorporated in New South Wales)
88 WOLLONGONG STREET,
FYSHWICK, A.C.T., 2609

P.O. BOX 656,
FYSHWICK, 2609
TELEPHONE CANBERRA (062) 80 5665
TELEX: AA 62750

27th September 1979

Memorandum to : J. COLLIER

From : R.J. REBEK

BALFOUR-SPECIMEN HILL REPORT No. 9755

Please find enclosed this statutory report by Mike Porter.
I agree with the recommendations for future work.

R.J. Rebek

rjr/cs

002

140003

TABLE OF CONTENTS

LIST OF PLANS

Plan No.	Title	Scale
TC 148	SPL's 774 & 781 - Balfour, NW Tas., Geochemical Plan, Sn Results.	1: 10 000
TC 149	Lease Plan - Balfour, NW Tas.	1: 5 000
TC 150	SPL 781 - NW Tas., Specimen Hill Grid, Geological Plan	1: 5 000
TC 151	SPL 781 - NW Tas., Specimen Hill Grid - Balfour - Geochemical Plan, Sn Results.	1: 5 000
TC 152	SPL 781 - NW Tas., Specimen Hill Grid - Balfour - Ground Magnetic Survey	1: 5 000
TC 153	SPL's 774 & 781 - Balfour, NW Tas. Low Level Aeromagnetic Survey - Contour Plan.	1: 10 000

LIST OF APPENDICES

1 SUMMARY

During the period December 26, 1978 to June 26, 1979 a grid of some 22 line km covering an area of 2.5 x 0.65 km was established over the Specimen Hill Prospect at Balfour. The grid area has been subjected to a ground magnetometer survey, geological mapping at a scale of 1:5,000, a rock chip sampling program (486 samples) and an I.P. survey on 12 of the 26 lines.

The geological mapping has indicated that two sequences of rocks are covered by the grid. These comprise a lower sequence of irregularly laminated grey-green tourmaline rich siltstones and an upper succession of green to yellow finely laminated siltstones with common interbeds of quartzite. A broadly linear concordant ground magnetic anomaly of up to 400 gammas coincides with the upper sections of the lower sequence, while an anomalous I.P. zone occurs some 150m to the west (down sequence) from the magnetic anomaly.

Substantial sections of the grid area both coincident with and removed from the general magnetic - I.P. anomalous zone returned rock chip tin values of from 100 to 400 ppm with a few peak values of from 1000 to 3000 ppm Sn. In comparison background values on the periphery of the grid are from less than 4 to 10 ppm Sn.

A low level airborne magnetic survey was flown over most of SPL's 774 and 781 while the majority of the known areas of mineralisation outside of the Specimen Hill grid have been rock chip sampled.

2 INTRODUCTION

This report covers work undertaken during the six month period December 26, 1978 to June 26, 1979 on the following titles subject to farm in-joint venture agreements with the vendors listed (see Lease Plan - Plan No. Tc149).

L & L Syndicate - ML's 10/73, 44/77, 2/76, 1/76, 120/67, 121/67, 93/77 & 95/77 Tasmania.

L ¢ B Syndicate - SPL's 774 & 781 Tasmania.
ML's 72/77, 73/77, 104/77, 103/77, 8/78 & 20/76 Tasmania.

L & L and
L & B Syndicate - ML 19M/76.

The program carried out included :

- The establishment of a grid totalling some 22 line km.
- A ground magnetometer survey covering the grid on a 100 x 25m basis.
- A geochemical rock chip sampling program (486 samples). Samples were collected over 20m lengths on available outcrop and in existing costeans.
- Geological mapping of the grid area on a 1:5,000 scale
- An IP survey of some 12 lines indicated to be of interest by the above.
- A low level helicopter borne magnetic survey covering most of SPL's 774 & 781.
- Geochemical rock chip sampling outside of the grid area in the vicinity of axes of magnetic anomalies outlined by the low level survey and of areas of known mineralisation.

The geological mapping was carried out by N.R. Langsford while the ground magnetic survey was executed by M. Laan and N.R. Langsford.

The geochemical sampling was undertaken and/or supervised by N.R. Langsford.

The lowlevel aeromagnetic survey was flown by Geoex Pty. Ltd. while the IP survey was carried out by Geoterrex Ltd.

The geologic/geochemical program was planned and supervised by T.M. Porter while T. Kerr planned and interpreted the geophysical work.

3. GEOLOGY

Plan TC 150 is a 1: 5 000 scale geological map of the Specimen Hill Grid area. The mapping was originally carried out at a 1: 2 500 photo scale which was then reduced. The faults shown were photo interpreted using a stereoscope. The sequence of Late Proterozoic to possibly Lower Cambrian rocks in the grid area generally dip and face to the east and can be summarised as follows :

- An upper sequence of green to yellow, finely laminated siltstone with common interbeds of quartzite from 25cm to 2 m thick. Dolomite lenses are known within the sequence in the Murrays Reward Mine.

- A lower succession of irregularly laminated grey-green tourmaline rich siltstones which are characterised by abundant slump structures. A characteristic horizon of hard grey laminated siliceous siltstone which is commonly limonitic occurs within this sequence. The

siliceous siltstone often has associated yellow clays which may be decomposed carbonates. Black micaceous siltstone units occur in the lower part of the succession while quartzites become more common towards the base.

The sequence in the grid area has been dislocated by a series of NE-SW trending faults. These are readily reflected by the offset of ridges formed by the thin resistant quartzite beds within the sequence. Other faults parallel to strike may be present although these have not been mapped to date.

4. GEOCHEMISTRY

Plan TC 151 illustrates the results of the rock chip sampling program. To date some 486 samples have been collected. Each represents a 20m width, unless the available outcrop was insufficient. The results do not allow detailed contouring. However a broad +100ppm Sn outline can be drawn. This embraces values ranging in general from 100 to 400ppm Sn with peaks of from 1000 to 3000ppm. On the periphery of the Specimen Hill Grid background values of less than 4 to 10ppm Sn were obtained while the +100ppm zones are surrounded and separated by a halo of 30 to 100ppm Sn.

Outside of the main grid area the only significant anomalous levels outlined to date are on the southern margin of the grid (plan nos. TC 148 & 151). Appendix 3 embraces the ledger sheets listing the complete assay data and observations on all samples collected.

5. MAGNETIC SURVEYS

5.1 Low Level Airborne Survey - A low level helicopter borne aeromagnetic survey was flown over SPL's 774 & 781 and adjacent portions of EL 1/77 in March 1979 by Geoex Pty. Ltd. The line spacing was approximately 200m and the average sensor height 75m above ground.

The survey delineated the full extent of the "Balfour" magnetic anomaly, portion of which had previously been covered by the Specimen Hill Grid. Plan TC 153 illustrates the results of the survey. The low level magnetics revealed that the main centre of the Balfour anomaly lies to the south of the Specimen Hill Grid.

5.2 Ground Survey - Plan No. TC152 illustrates the results of the ground magnetic survey of the Specimen Hill Grid. Readings were taken on a 100 x 25m grid basis using a Scintrex MP-2 proton precession magnetometer. A single line (Line 89N) has been extended to cover the peak of the main centre of the "Balfour anomaly" as outlined by the low level airborne survey. The results are discussed in the accompanying Memo by Tom Kerr (Appendix I).

6. IP. SURVEY

A dipole-dipole survey using 25 m dipoles was undertaken by Geoterrex Ltd. on portions of lines 86, 88, 89, 90, 91, 95, 96, 97, 100, 107, 108 and 109N. The results are discussed and illustrated in the accompanying memo by Tom Kerr (appendix 2).

7. FUTURE WORK

The following work is planned for the remainder of 1979.

- An induced polarisation survey on the western end of lines 99, 101, 103, 106 and 110N to better define the I.P. anomaly obtained on lines 100N, 107, 108 and 109N will be undertaken concurrently.

- Drill test of one or two of the best I.P. anomalies.

- A limited Jacrow bedrock geochemical program to fill in gaps in the present geochemical survey in the main areas of interest.

- A reappraisal of data and exploration concepts.

T.M. Porter

tmp/cs

APPENDIX 1

Memo by T. Kerr

Balfour Anomaly at Specimen Hill, Tasmania

140012

APPENDIX 1 PAGE 1
97

C.R.A. EXPLORATION PTY. LIMITED
(Incorporated in New South Wales)
88 WOLLONGONG STREET,
FYSHWICK, A.C.T., 2609

P.O. BOX 656,
FYSHWICK, 2609
TELEPHONE CANBERRA (062) 80 5665
TELEX: AA 62750

1st June 1979

Memorandum to : T.M. PORTER
Copy : R.J. Rebek
R.J. Smith
From : T. KERR

"BALFOUR" ANOMALY AT SPECIMAN HILL, TASMANIA

1 Summary

A ground magnetic survey was carried out on the Balfour anomaly by local contractors. The object was to update a torsion bar survey dating from the 1950's and close off the anomaly at the northern end. This was accomplished, and a possible target delineated.

2 Conclusion

The north end of the Balfour anomaly represents a fairly shallow tabular body. It is not so attractive as the Mt. Bischoff-type massive pyrrhotites; but, if geochemical results are supportive, it could be tested by a short drill hole. Such a hole should pass through the coordinates:

108N 10,050E depth 60-70m.

3 Survey

The survey was carried out by local leaseholders over four working days. One of the personnel is a trained geologist, and the survey appears to have been competently executed. Two base stations were established and occupied at intervals of 2 hours or less. Drifts were generally small.

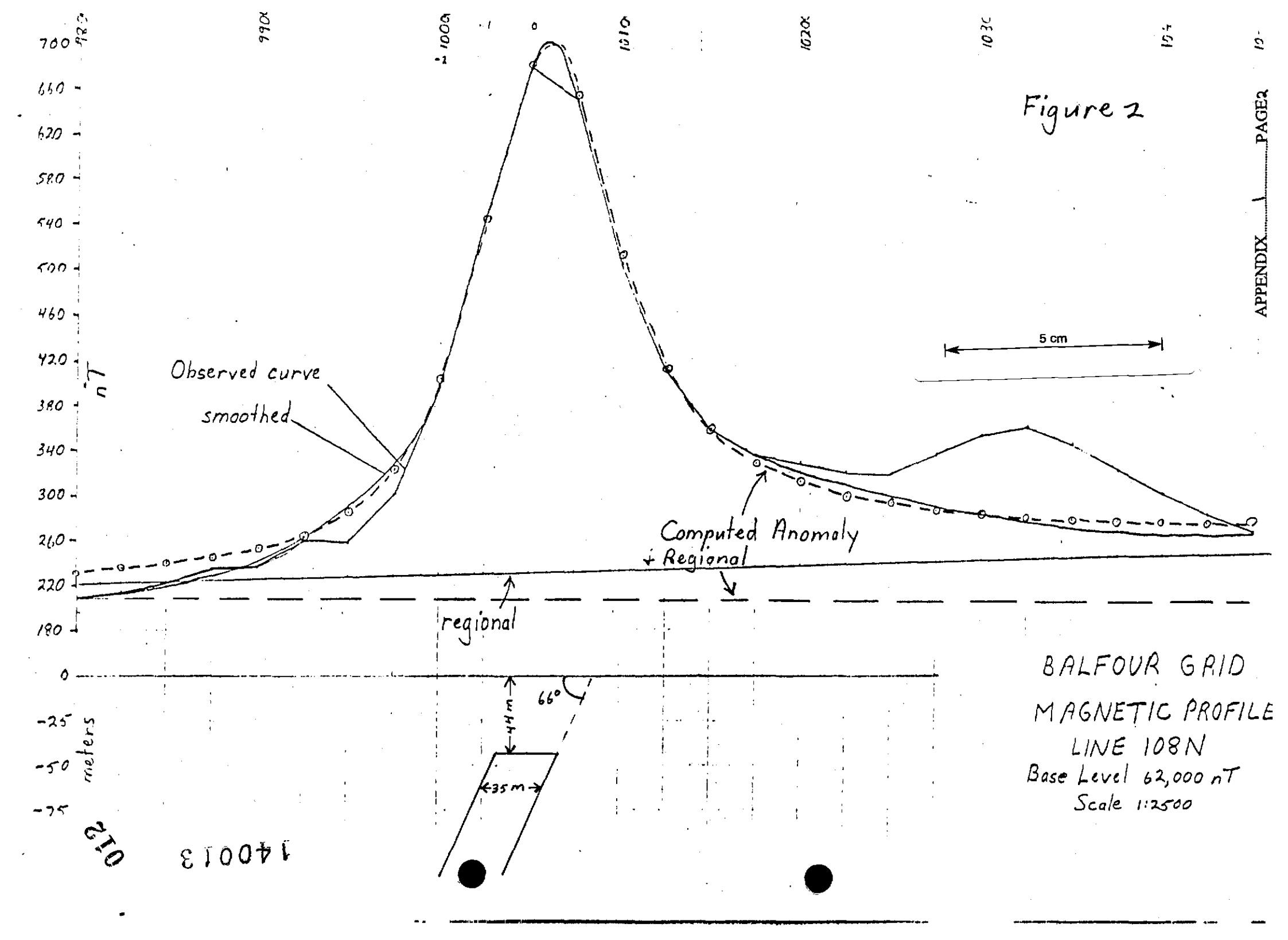


Figure 2
APPENDIX 1 PAGE2
700
660
620
580
540
500
460
420
380
340
300
260
220
180
0
-25
-50
-75
nT
meters
990X
1000
1010
1020X
1030
5 cm
Observed curve
smoothed
Computed Anomaly
+ Regional
regional
66°
44m
35m
BALFOUR GRID
MAGNETIC PROFILE
LINE 108N
Base Level 62,000 nT
Scale 1:2500
012
140013

Data was reduced, plotted and contoured by T. Kerr at the Canberra office. The northern two-thirds of the survey is presented in Figure 1. The remaining portion is dominated by a large, broad, presumed basement anomaly located off the southern portion of the grid.

4 Interpretation

4.1 General

The northern half of the Balfour anomaly is obviously a tabular or ribbon-like body running grid north or about 317° magnetic. It is broken by a 3 magnetic discontinuities which are interpreted as presumed faults.

4.2 Specific

The central portion of the anomaly was chosen for examination. Line 108N was profiled (see figure 2), smoothed, and estimators applied to provide a starting point for the interpretation. These were confirmed on a T.I. 59 using the Parker Gay formula and then inserted into C.R.A.'s MAGMOD program. This is an iterative program that adjusts the initial parameters until the generated anomaly reaches a best-fit with the observed profile. The final printout is shown as figure 3. The coordinates are an artificial grid centered at 10050E for the sake of convenience. Initially some confusion arose over the sign conventions of the inclination, absolute anomaly and grid directions, so the anomaly was 'placed' in the northern hemisphere to avoid negatives. The print-out is for a tabular model, and it will be observed on figures 2 and 3, that the fit is remarkably close. A ribbon was also modelled. Its standard deviation was slightly greater and the lower edge could not be computed. Otherwise the parameters were very close to those of the tabular model.

To sum : depth = 44m
dip = 66° W
width = 35m

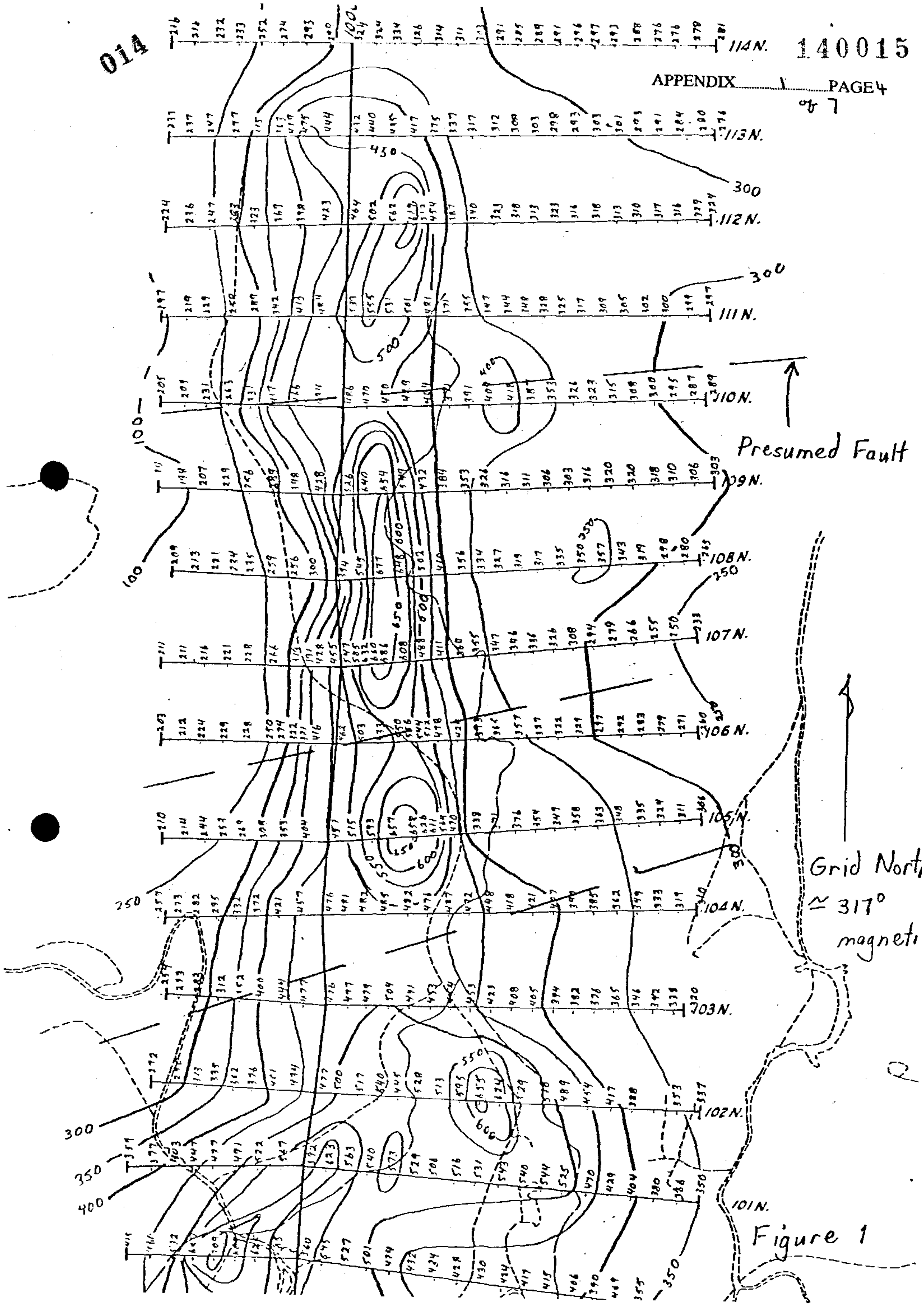

114N.
113N.
112N.
111N.
110N.
109N.
108N.
107N.
106N.
105N.
104N.
103N.
102N.
101N.
100E
Presumed Fault
Grid North
≃ 317°
magneti
300
350
400
430
500
600
650
250
100

Figure 1

NORMALIZED WEIGHTED STANDARD DEVIATION OF FIT .0194 APPENDIX 1 PAGE 5

PARAMETER KEY		START	LIMITS		FITTED	TOLERANCE	RANGE
GRAV	1	5.000+02	0.0	0.0	3.392+02	5.0+01	4.3+00
I	1	9.000+01	4.5+01	1.3+02	6.519+01	5.0+00	1.0+00
SL LEVEL	1	0.000	0.0	0.0	1.175+01	8.0+01	3.5+00
SL SLOPE	1	0.000	0.0	0.0	-1.599-01	1.0+01	7.7-01
SILL	1	0.000	0.0	0.0	-1.011-01	1.8-01	3.6-02
SLF WIDTH	1	* 5.000-01	5.0-01	5.0+00	6.397-01	1.8-01	9.2-03
FIN	1	* 1.000+00	5.0-01	5.0+00	1.767+00	1.8-01	3.2-02
BCLIMIT	0	7.000+01	0.0	0.0	7.000+01	0.0	0.0
BCLIMIN	0	5.500+01	0.0	0.0	5.500+01	0.0	0.0
BFICAL	0	0.000	0.0	0.0	0.000	0.0	0.0
BV SIN	0	0.000	0.0	0.0	0.000	0.0	0.0

66°S ; W
1005.3 mE
35 m thi
44 m dip

POSITION	WEIGHT	OBS	FITTED
800E 10.0000	.01	-11.	11.
9.0000	.01	-9.	15.
8.0000	.01	-4.	18.
7.0000	.01	4.	20.
6.0000	.02	16.	27.
5.0000	.05	36.	38.
4.0000	.08	64.	57.
3.0000	.14	100.	95.
2.0000	.24	170.	173.
1.0000	.46	316.	310.
0,050E .0000	.51	446.	451.

* Dimensions in terms of grid spacing: i.e. 25 m.
∴ 5.000-1 = 12.5 m.

-1.0000	.49	412.	407.
-2.0000	.35	266.	272.
-3.0000	.23	174.	176.
-4.0000	.16	122.	123.
-5.0000	.13	98.	92.
-6.0000	.10	82.	73.
-7.0000	.09	70.	60.
-8.0000	.07	58.	52.
-9.0000	.06	51.	46.
-10.0000	.05	40.	41.
-11.0000	.04	32.	38.
-12.0000	.03	26.	35.
-13.0000	.03	22.	33.
-14.0000	.02	18.	31.
-15.0000	.02	16.	30.
450E -16.0000	.02	14.	28.

Figure 3
TABULAR MODEL

NORMALIZED WEIGHTED STANDARD DEVIATION OF FIT .0194

140016

BCLIMIT	0	7.000+01	0.0	0.0	7.000+01	0.0	0.0
BCLIMIN	0	5.500+01	0.0	0.0	5.500+01	0.0	0.0
				0.0	0.000	0.0	0.0

0165 Discussion

140017

9 7

5.1 Dip

T.M. Porter has indicated that the observed dips in the area are steep, but generally easterly while the calculated dip is to the west. One explanation is that the observed dips are not representative of the whole succession. It is also possible that remanent magnetism may have confused the dip calculation. The susceptability of this body is in the order of 5,000 x 10^{-6} c.g.s. Referring to figure 4, we see that a sample of pyrrhotite from Site 1 at Mt. Bischoff is similar and has considerable remanence This could affect the dip calculation considerably. Assuming the inclination is still negative - as at Mt. Bischoff - the depth calculation should not be seriously jeopardized by such a remanence.

5.2 Pyrrhotite Content

The susceptability is at the low end of the scale for pyrrhotite samples from Mt. Bischoff (or for that matter, Elura). Using empirical formalas and tables, it may represent about 2.5% magnetite or about 12% pyrrhotite.

These are very theoretical numbers, so perhaps we should restrict ourselves to suggesting that this is unlikely to be a truly massive pyrrhotite; but more probably a heavy dissemination.

Tom Kerr

T. Kerr

	MEAN NRM (ACCOM OF $\times 10^{-6}$)	MEAN SUSCEPTIBILITY ($\times 10^{-6}$)	Q (H = 0.63 Oe)
SITE 917 (A-B) DOLOMITE	5010	490	16.2
SITE 1 (C-E) PYRRHOTITE	5260	5760	1.4
SITE 2 QUARTZITE	2	6	0.5
SITE 3 PYRRHOTITE	17480	3730	3.2
SITE 4 PYRRHOTITE	41160	23070	2.9
SITE 5 PORPHYRY	2	2	1.6
SITE 6 PORPHYRY	2	0	∞
SITE 7 PORPHYRY	10	0	∞
SITE 8 QUARTZITE	1	53	0.5
SITE 9 DOLOMITE	3	190	0
SITE 10 DOLOMITE	2	10	0.3

MEAN DIRECTIONS (PRESENT HORIZONTAL)	DECLINATION	INCLINATION
SITE 1	270°	-40°
SITE 3	40°	-40°
SITE 4*	180°	-20°

* No sun compass bearings at site 4 so direction could be inaccurate. In modelling the direction from site 3 could also be tried.

Figure 4

APPENDIX 2

Memo by T. Kerr

Specimen Hill I.P. Survey

C.R.A. EXPLORATION PTY. LIMITED
(Incorporated in New South Wales)
88 WOLLONGONG STREET,
FYSHWICK, A.C.T., 2609

P.O. BOX 656,
FYSHWICK, 2609
TELEPHONE CANBERRA (062) 80 5665
TELEX: AA 62750

27th August, 1979

Memorandum to : T.M. Porter
c.c. : R.J. Rebek
R.J. Smith
From : T. Kerr

SPECIMEN HILL I.P. SURVEY

1 Introduction

An induced polarization survey was carried out in May 1979 on selected portions of the Specimen Hill grid. The target was tin mineralization presumed to be associated with sulphides. Geoterrex was contracted to furnish an operator and receiver; C.R.A.'s I.P. transmitter was used; and the local leaseholders were contracted for labour crew. The survey was dipole-dipole with 50m dipoles at a rate of 1 spread a day. This is a rather slow production rate, though it is noted that the majority of the spreads were longer than the "standard" 7 electrodes.

2 Conclusions

Six chargeability axes are outlined on the included plan. It maybe that thereare really only 3, but gaps in the survey coverage preclude definite correlation. It is suggested that they represent a cassiterite-pyrite association.

3 Recommendations

Anomalies A and B are both recommended for drilling. The target for anomaly A is 108N, 9825E, depth 100m. The target for anomaly B is 100N 9775E, depth 75m. Anomalies C through F appear to be weaker and more shallow. It is suggested that they can be adequately tested near the surface by means of a jacro rig, bulldozer

costeans, or alternative low-cost methods.

4 Discussion

Pseudosections are enclosed at the back of this memorandum. As the coverage was discontinuous; the areas will be discussed separately.

4.1 Northern Block

Lines 107, 108, 109 were run to test the prominent linear magnetic anomaly which occurs here. Anomaly A is unexpectedly located more than 150m. west of the magnetic anomaly. It is a fairly strong anomaly -M 70 millisec - with an associated resistivity low, the whole in a band of elevated chargeability. This suggests a concentrated sector of sulphide set in a halo of disseminated material. Anomaly B, on line 100N, has the same characteristics and spatial relation to the magnetic horizon; accordingly, it is likely the anomalies are identical. Hole D.D.B.6, drilled to test the magnetic anomaly, was about 150m. too far east to penetrate the I.P. target. There are hints of a small secondary source to the east of the anomaly which may be associated with the magnetic anomaly, but it should be noted that carbonaceous siltstone has been mapped in the area.

There are no anomalous magnetics associated with the I.P. anomalies. It is feasible that they are solely due to a very heavy concentration of cassiterite; but more likely the major cause is pyrite. On the three northernmost lines, the anomaly may not surface. The shape is somewhat erratic and may represent close multiple sources. Also, there are some highly anomalous resistivity readings on line 107N which might indicate faulting.

At the B position, the anomaly is exceptionally clean, and a simple 'dyke' would seem to be an adequate model.

140022

021

4.2 Central Bloc

Peter's Ridge was tested by spreads on lines 95, 96 and 97 N. Anomalies C and D came to light associated with Peter's Ridge and Specimen Hill respectively. They are not as strong or well defined as A or B and may represent no more than a zone of heavy dissemination. The south-eastern portion of the grid is known to be pyritiferous, and pyrite is the likely source of the anomalies. The anomalies are not associated with strong resistivity lows; and, in fact, the ridges produce resistivity highs at the surface 'n' spacings. Though it is likely that the ridges are more resistant than the countryside, it is probable that up to half the measured values can be attributed to the topographic effect. It appears that the anomalies surface or very nearly so.

There is an almost exact relationship between anomaly position and recorded high tin values from rock chip samples. The consequences are twofold: tin is associated with pyrite and hopefully so for positions A and B : if the central and southern anomalies do indeed surface, the grade may improve but little at depth. Accordingly, no more than shallow exploration seems justified.

4.3 Southern Bloc

This is an area of widely occurring tin and pyrite; and it was hoped to locate a concentrated source for these scattered values. None such was found; but anomalies E and F were located, again coinciding with recorded high tin values. They much resemble C and D, may well be extensions of them across the unmapped interval, and the same comments apply. Anomaly E appears reasonably attractive at its northern end.

022

140023

5 Summary

A and B are the most attractive targets on the grid. C through F warrant further investigation but will not yet be recommended as drill targets.

The question of dip over the targets is a vexatious one. An effort should be made to resolve this by an amalgam of geology and computer modeling of all geophysical data before the drills reach site.

Tom Kerr

023

App 2 P50 of 179

140024

10000 E.

113 N.
113 N.
112 N.
111 N.
110 N.
109 N.
108 N.
107 N.
106 N.
105 N.
104 N.
103 N.
102 N.
101 N.
100 N.
99 N.
98 N.
97 N.
94 N.
93 N.
92 N.
91 N.
90 N.
89 N.
88 N.
86 N.

AIR STRIP

A

B

CAMP

GRID NORTH

5 cm

C.R.A. EXPLORATION PTY. LIMITED

I.P. PLAN BALFOUR GRID

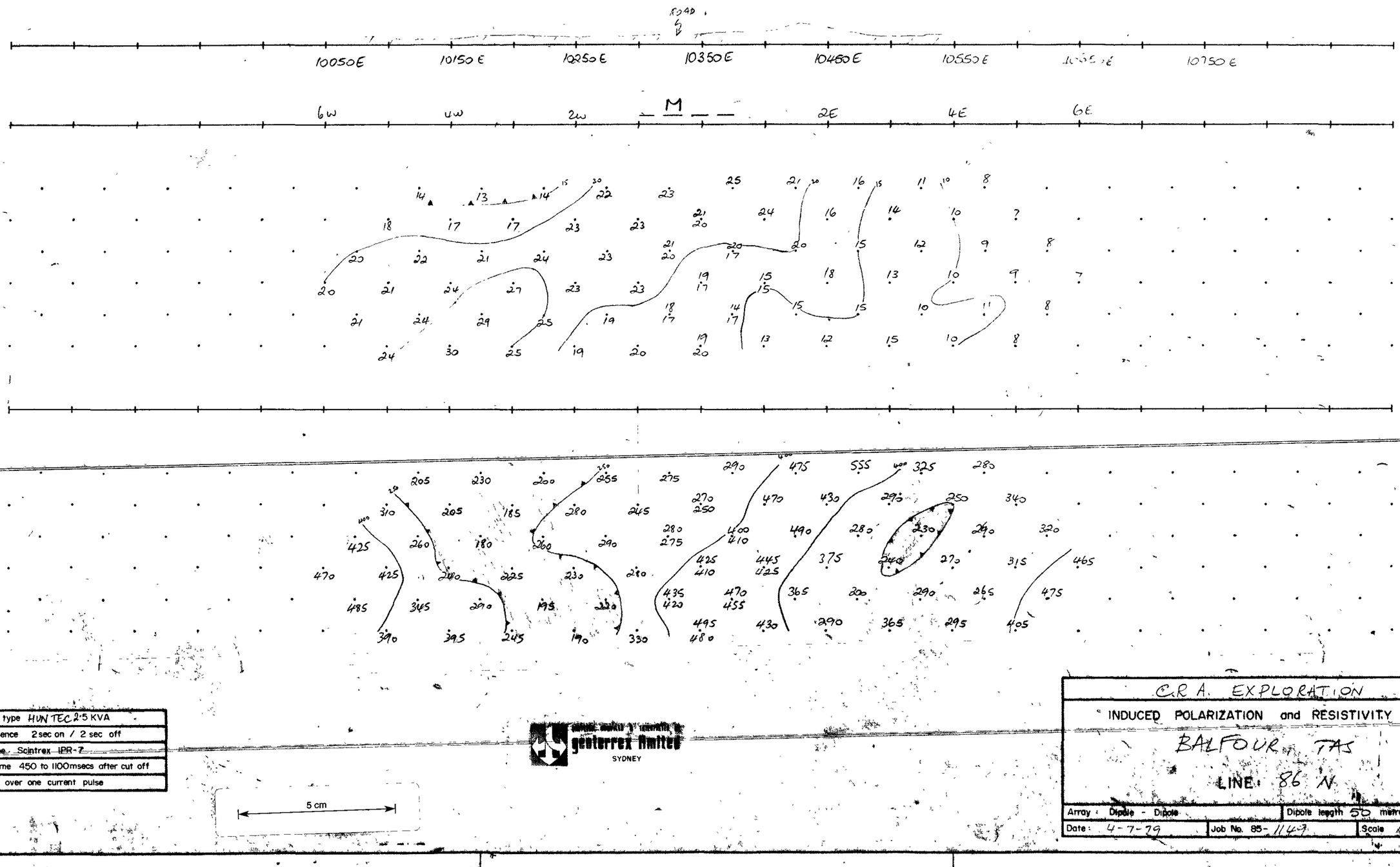
I.P. Conductor Trace

I.P. Disseminated Source

geologist: M.P.	scale: 1:5000	report no:
drawn: R.G.W.	date: 7:4:'79	plan no:

024

140025. App2 P6 of 17p



Transmitter type	HUNTEC 2·5 KVA
Timing sequence	2 sec on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100msecs after cut off
IP measured over one current pulse	

5 cm

geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

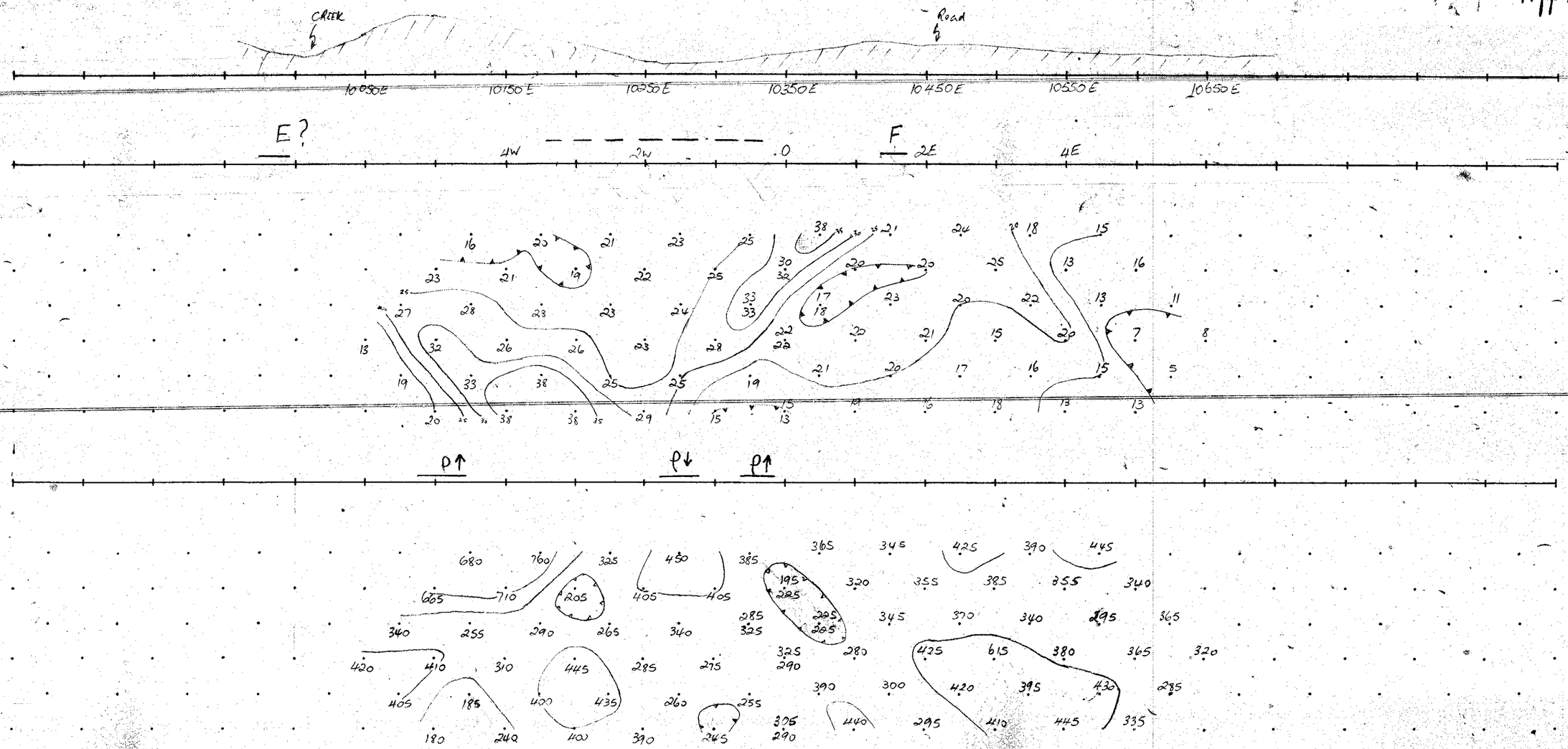
BALFOUR, TAS

LINE: 86 N

Array: Dipole - Dipole		Dipole length 50 metres
Date: 4-7-79	Job No. 85-1147	Scale 1:2500

025

140026 App 2 p 7 of 17 p



Transmitter type HUNTEC 2·5 KVA
Timing sequence : 2 sec. on / 2 sec. off
Receiver type : Scintrex IPR-7
Integration time : 450 to 1100 msecs after cut off
I.P. measured over one current pulse

5 cm

geoterrex limited
SYDNEY

CRA EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

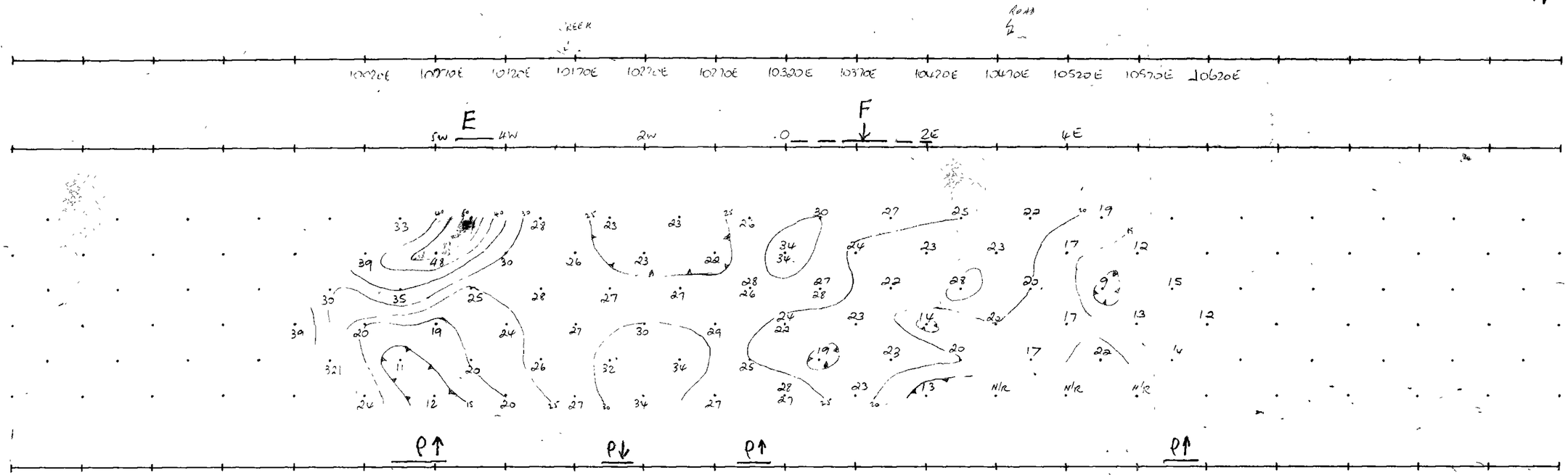
BALFOUR TAS.

LINE 88 N

Array : Dipole - Dipole	Dipole length : 50 metres	
Date : 5-7-79	Job No. 85- 1169	Scale : 1:2500

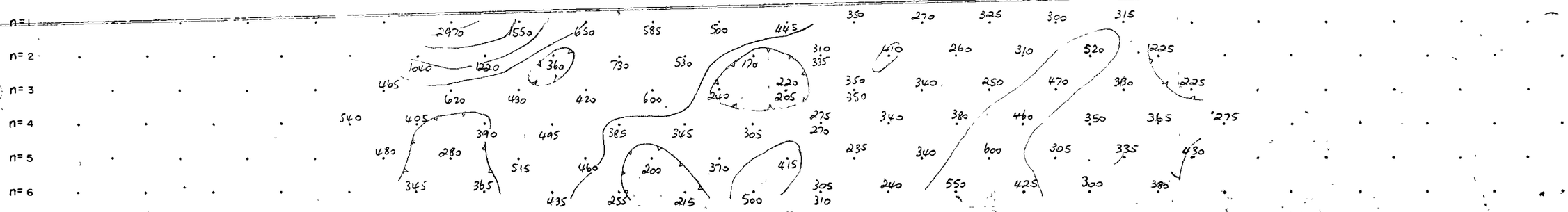
026

140027. App 2 P8 of 17p



Culture Plan

Apparent Chargeability (msecs)



Apparent Resistivity (ohm m)

Transmitter type	HUNTEC 2.5 KVA
Timing sequence	2 sec. on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100msecs after cut off
IP measured over one current pulse	

5 cm

geoterrex limited
SYDNEY

C. R. A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

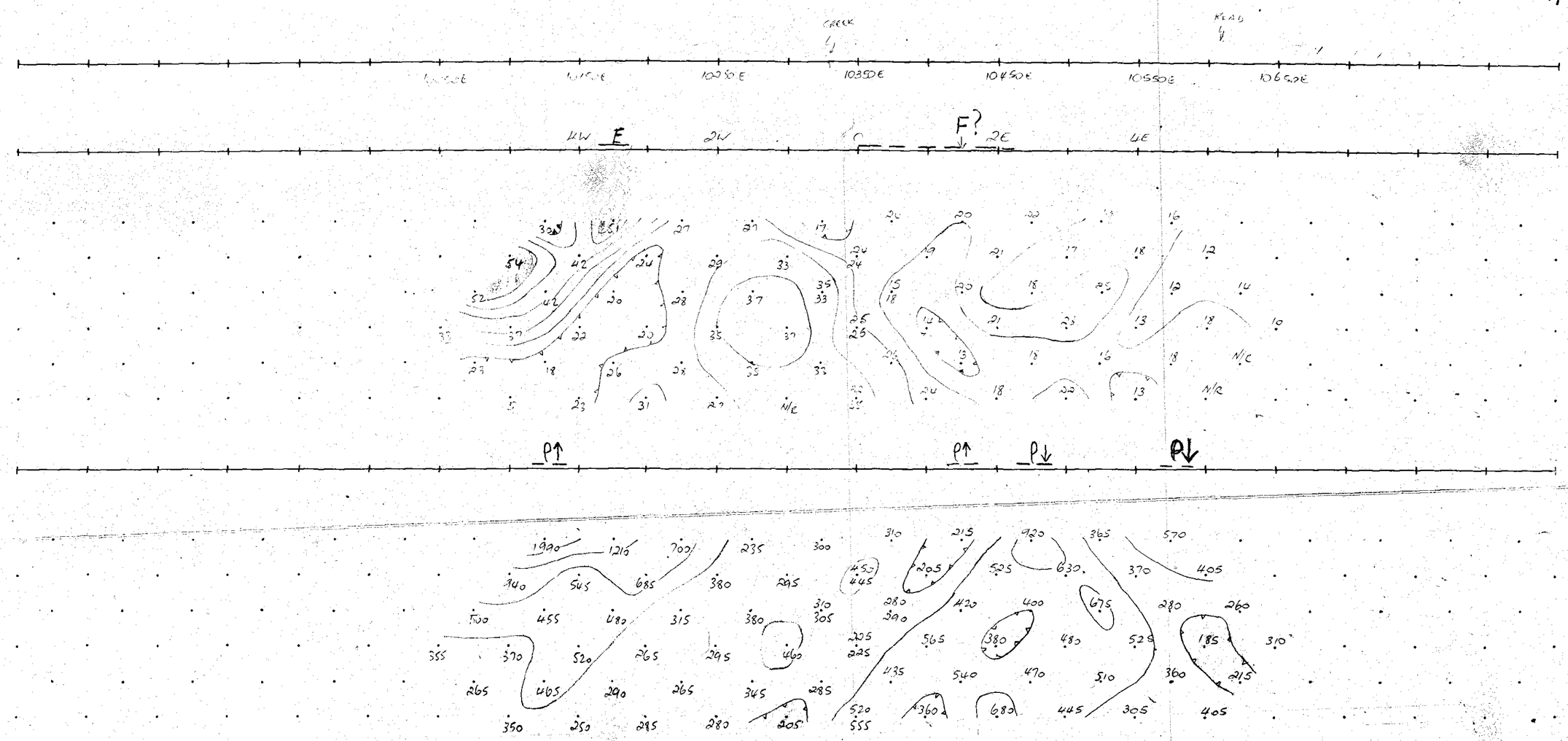
BALFOUR, TAS

LINE: 89 N

Array: Dipole - Dipole		Dipole length: 50 metres
Date: 6-7-79	Job No 85T 1149	Scale: 1:2500

027

140028 App 2 P9 of 17p



Culture Plan

Transmitter type : MINITEC 2.5 KVA
Timing sequence : 2 sec. on / 2 sec. off
Receiver type : Scintrex IPR-7
Integration time : 450 to 1100msecs after cut off
I.P. measured over one current pulse

5 cm

geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

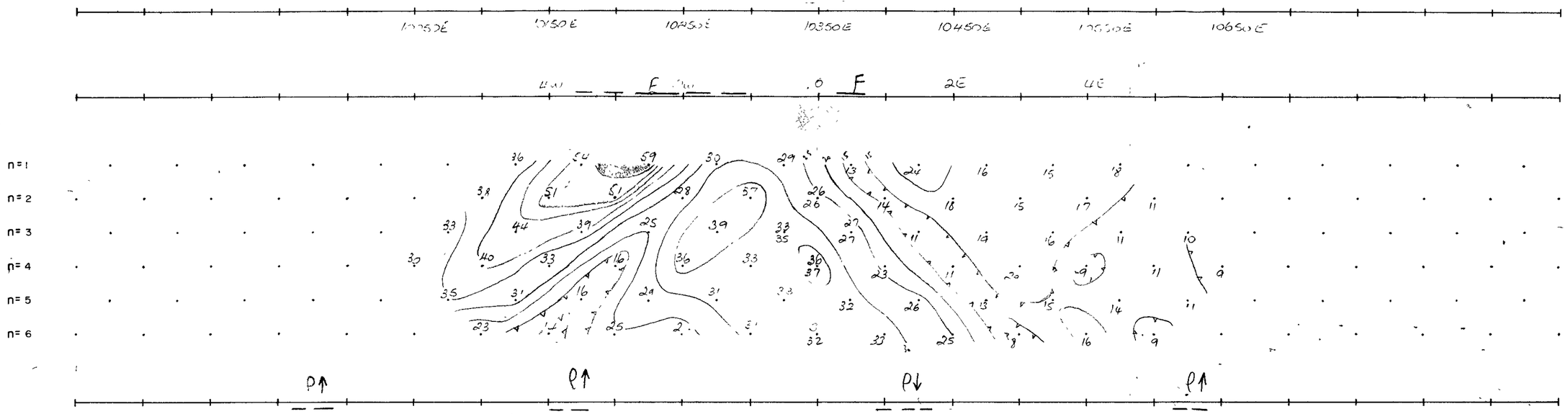
BALFOUR, TAS

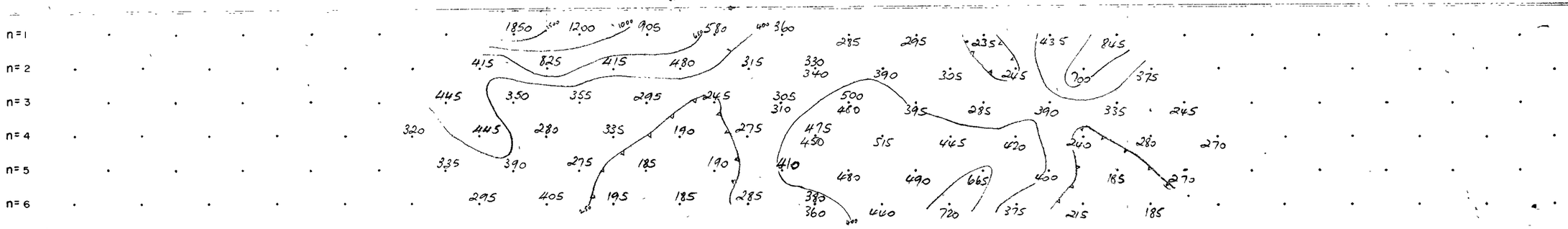
LINE: 90N

Array : Dipole - Dipole	Dipole length : 50 metres
Date : 6,7-7-79	Job No. 85-1149
	Scale : 1:2500

028

140029 App2 P10 of ITP





Transmitter type HUNTEC 2.5 KVA
Timing sequence - 2 sec. on / 2 sec. off
Receiver type Scintrex IPR-7
Integration time 450 to 1100msecs after cut off
IP measured over one current pulse

5 cm

geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TAS

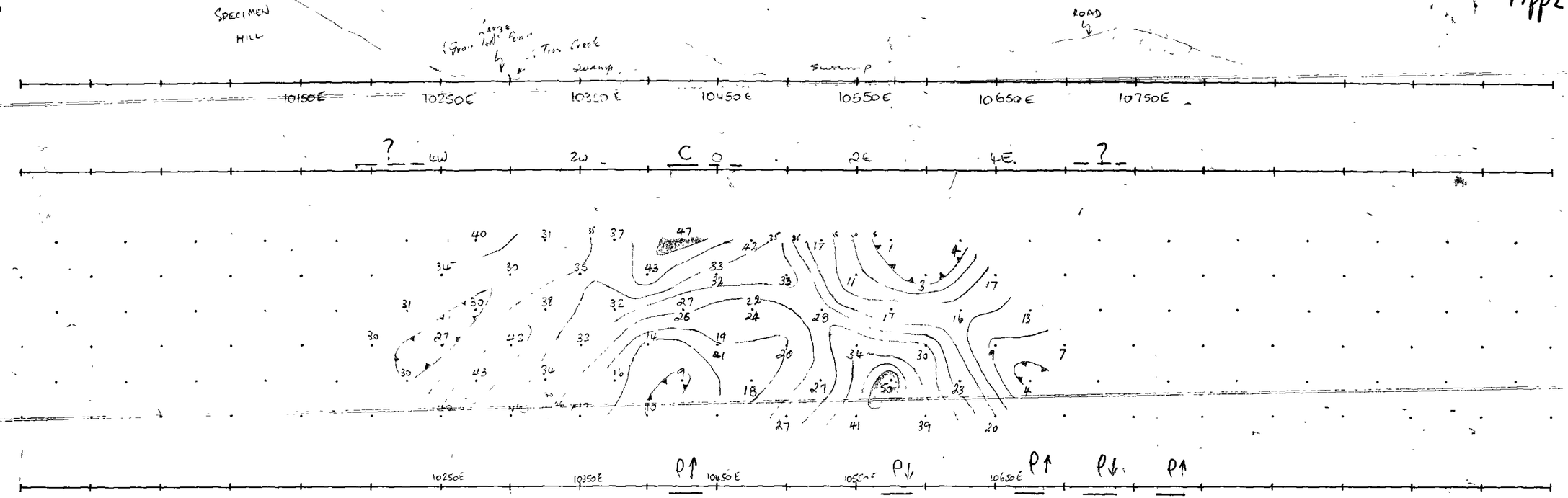
LINE: 9/N

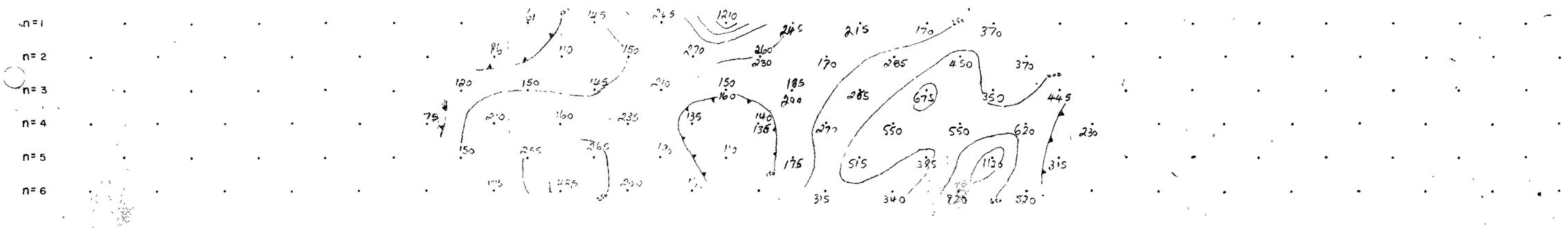
Array: Dipole - Dipole		Dipole length: 50 metres
Date: 7,8/7/79	Job No. 85-1149	Scale 1:2500

029

140030

App2 P11 of 17p





Transmitter type	HUNTEC 2.5 KVA
Timing sequence	2 sec on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100 msecs after cut off
IP measured over one current pulse	

5 cm

SURVEYED, COMPILED & INTERPRETED BY
geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TAS

LINE: 95 N

Array	Dipole - Dipole	Dipole length	50 metres
Date	1-7-79	Job No 85-1149	Scale 1:2500

030

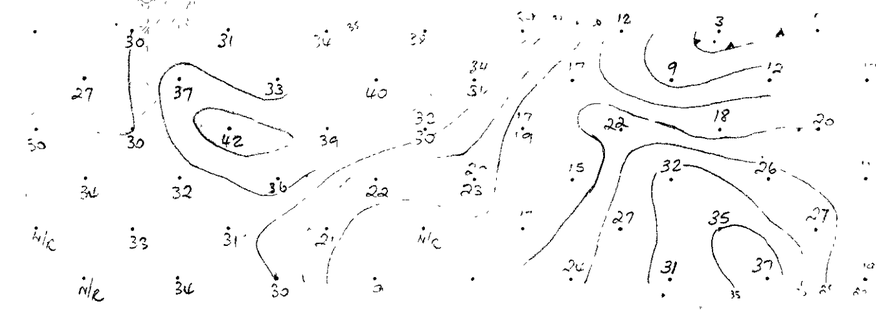
140031 App 2 P12 of 17p

Creek

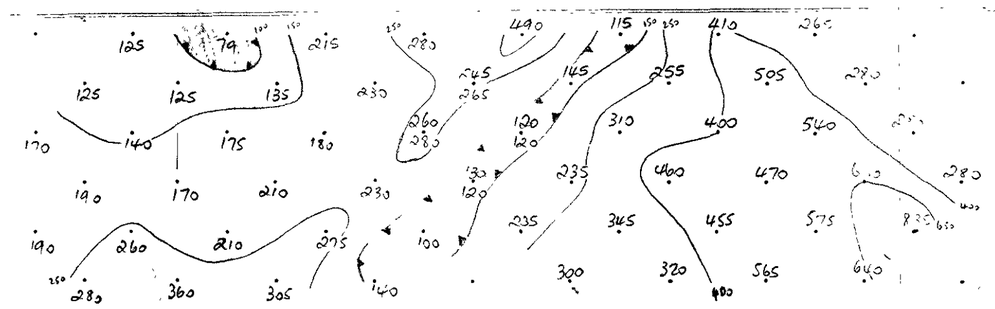
10150E 10250E 10350E 10450E 10550E 10750E

D 3W 2W 1W C 0 1E 2E 3E 2

n=1
n=2
n=3
n=4
n=5
n=6



P↓ P↑ P↑ P↓



Apparent Chargeability (msecs)

Apparent Resistivity (ohm m)

Culture Plan

Transmitter type	HUNTEC 2·5 KVA
Timing sequence	2 sec. on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100 msecs after cut off
IP measured over one current pulse	

5 cm

geoterrex Limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

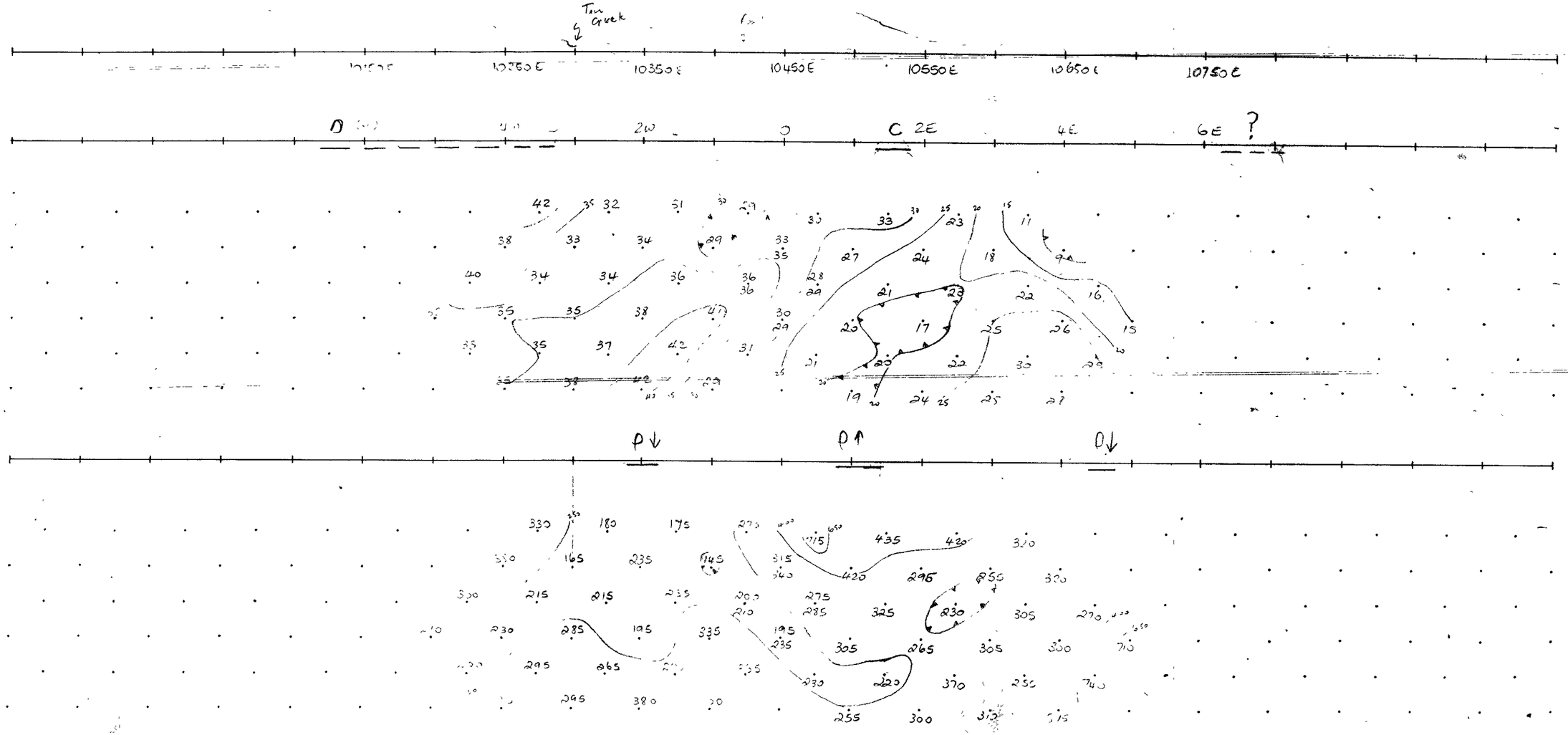
BALFOUR TAS

LINE: 96 N

Array	Dipole - Dipole	Dipole length	50 metres
Date:	30-6-79	Job No.	85-1149
Scale	1:2500		

031

140032 App 2 P13 of 17p



Transmitter type HUNTEC 2·5 KVA
Timing sequence 2 sec on / 2 sec off
Receiver type Scintrex IPR-7
Integration time 450 to 1100 msecs after cut off
IP measured over one current pulse

5 cm

POWERED, SUPPLIED & INTERPRETED BY
geoterrex limited
SYDNEY

CRA EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TAS

LINE: 97N

Array Dipole - Dipole		Dipole length 50 metres
Date 27-6-79	Job No 85-114-7	Scale * 1:2500

032

140033 App 2 p 14 of 17 p

Matrix Creek

Road

9600E 9700E 9800E 9900E 10,000E 10,100E 10,200E

5W 4W 3W 2W 1W 0 1E

B

Proposed drill target

n=1 n=2 n=3 n=4 n=5 n=6

Culture Plan

Apparent Chargeability (msecs)

P↓ P↑

O.P.B.b

Apparent Resistivity (ohm m)

Transmitter type	DINEC 2.5 KVA
Timing sequence	2 sec on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100msecs after cut off
IP measured over one current pulse	

5 cm

compiled, supplied & interpreted by
geoterrex limited
SYDNEY

CRA EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TAS

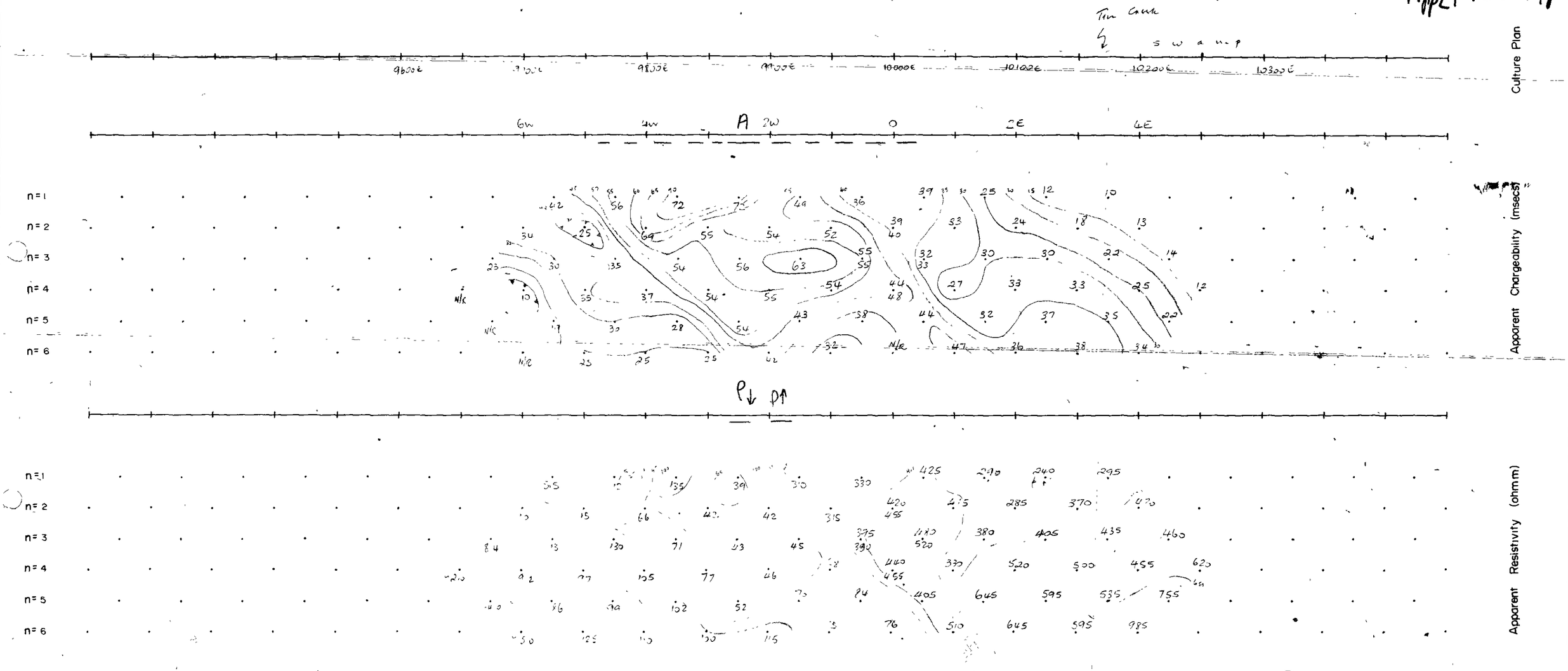
LINE: 100 N

Array	Dipole - Dipole	Dipole length	50 metres
Date	22-6-79	Job No 85-114-9	Scale 1:2500

033

140034

App2 P15 of 17p



Transmitter type	Huntec 2·5 KVA
Timing sequence	2 sec on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100 msecs after cut off
IP measured over one current pulse	

5 cm

geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TAS

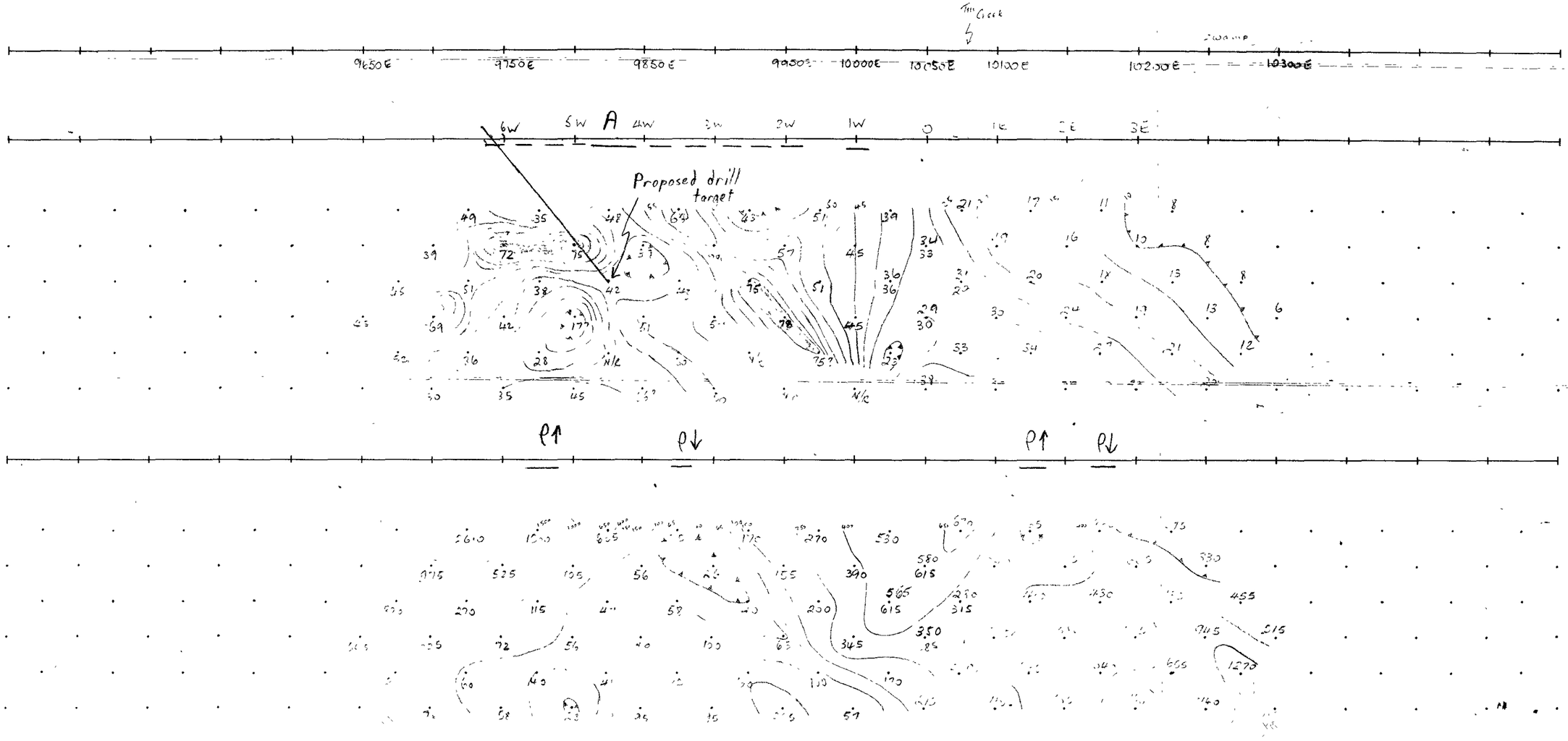
LINE: 107 N

Array: Dipole - Dipole		Dipole length: 50 metres
Date: 26-6-79	Job No. 85-1149	Scale: 1:2500

034

140035

App 2 P16 of 17p



Transmitter type	5 KVA
Timing sequence	2 sec on / 2 sec off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100 msecs after cut off
IP measured	over one current pulse

5 cm

PLOTTED, COMPILED & TYPESCRIPTED BY
geoterrex limited
SYDNEY

CRA EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR AREA

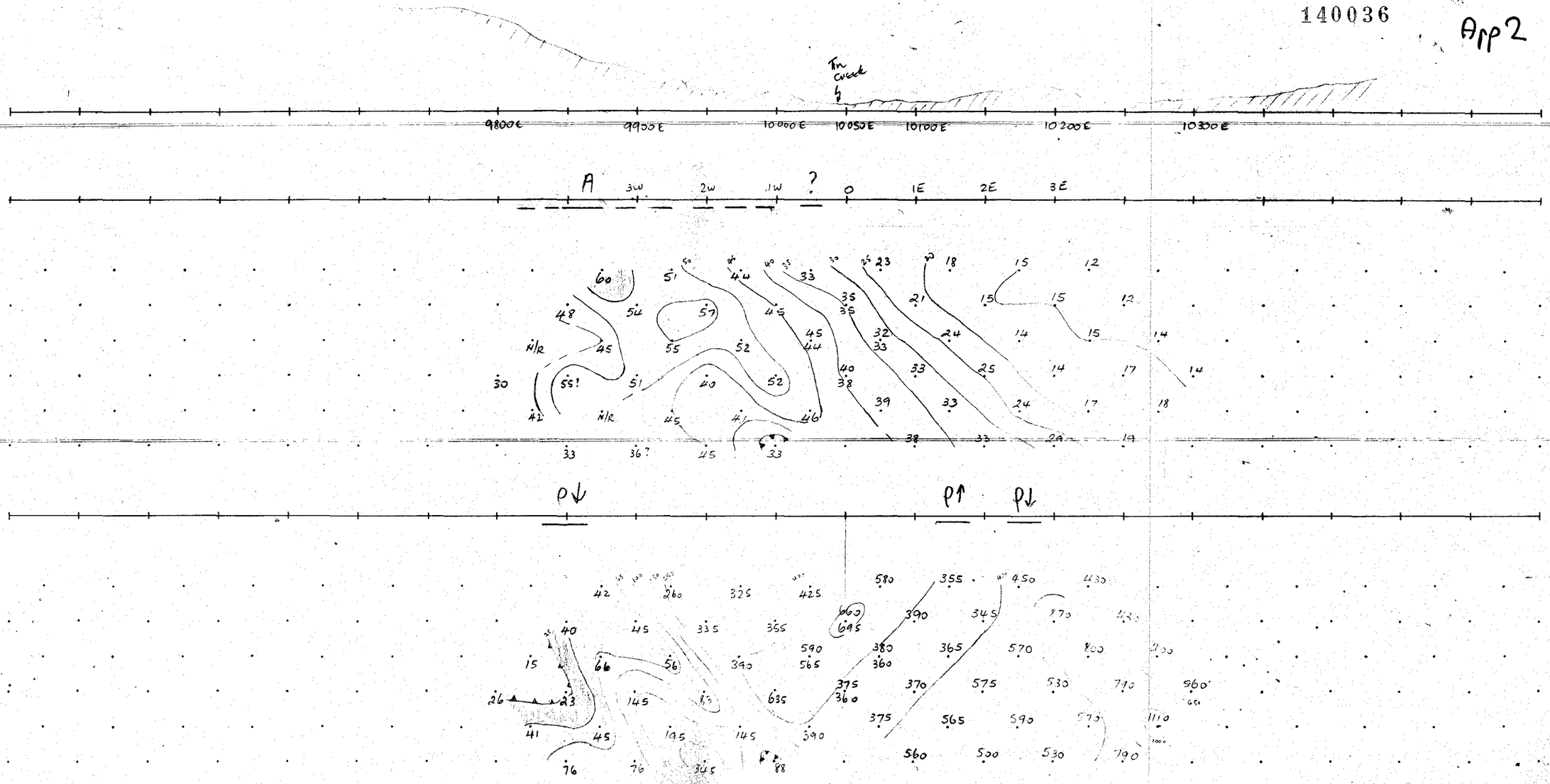
LINE: 168N

Array	Dipole - Dipole	Dipole length	50 metres
Date	25-6-79	Job No	85-149
Scale	1:2500		

035

140036

App 2 P17 of 17p



Transmitter type	HUNTEC 2.5 KVA
Timing sequence	2 sec. on / 2 sec. off
Receiver type	Scintrex IPR-7
Integration time	450 to 1100 msecs after cut off
IP measured over one current pulse	

5 cm

SURVEYED, COMPILED & INTERPRETED BY
geoterrex limited
SYDNEY

C.R.A. EXPLORATION

INDUCED POLARIZATION and RESISTIVITY SURVEY

BALFOUR, TASMANIA

LINE: 109 N

Array: Dipole - Dipole		Dipole length: 50 metres
Date: 24-6-79	Job No. 85-149	Scale: 1:2500

APPENDIX 3

Geochemical Rock Sampling Ledger Sheets

37

GEOCHEMICAL ROCK SAMPLING LEDGER 140038 Page No. 1

TENEMENT SPL 781 D.P.O. No. 408

AREA/PROSPECT Sherwin Hill SAMPLE No's. 716431 → 465 GEOLOGIST N R L. DATE Mar 79

PLAN REFERENCE ANALYSED BY AMDEL

Sample No.	Grid Coord.	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Cd / Bi	W	Sn.	APPENDIX 3 PAGE 1 Geological observations
716431	98N 10285E	3 / <5	2 / <5	2 / 12	<1 / <10	<10 / 6	25	310	50% siltite 50% pyjama rock.
32	98N 10280E	11 / <5	2 / <5	5 / 18	<1 / <10	<10 / 14	30	140	" pyjama "rock
33	98N 10240E	26 / 5	2 / <5	25 / 10	1 / <10	<10 / 26	35	720	" pyjama" rock, minor siltit.
34	98N 10220E	12 / <5	2 / <5	<2 / 12	<1 / <10	<10 / 4	10	100	pyjama rock.
35	98N 10200E	5 / <5	5 / <5	2 / 22	1 / <10	<10 / 8	25	160	Pyjama rock 20% siltite
36	98N 10180E	8 / <5	5 / <5	10 / 18	1 / <10	<10 / 30	15	360	Pyjama rock
37	98N 10160E	12 / <5	5 / <5	2 / 10	<1 / <10	10 / 14	10	60	"Pyjama rock" 20% siltite
38	98N 10140E	12 / <5	2 / <5	2 / 18	<1 / <10	10 / 14	15	250	"Pyjama rock"
39	98N 10120E	12 / 5	8 / <5	8 / 42	1 / <10	<10 / 10	35	100	Pyjama rock.
40	98N 10100E	10 / <5	5 / <5	20 / 20	1 / <10	<10 / 14	35	140	" pyjama rock
716431	98N 10080E	11 / <5	8 / <5	170 / 18	1 / <10	<10 / 4	50	85	" pyjama rock"
42	98N 10060E	3 / <5	8 / <5	5 / 20	<1 / <10	<10 / 14	25	400	Pyjama rock
43	98N 10040E	5 / <5	5 / <5	<2 / 18	<1 / <10	10 / 14	35	500	Pyjama rock
44	98N 10020E	<2 / <5	8 / <5	2 / 22	<1 / <10	<10 / 14	30	200	Pyjama rock minor grtz
45	98N 10000E	<2 / <5	5 / <5	<2 / 22	<1 / <10	<10 / 14	30	46	pyjama rock minor siltite.
46	98N 09980E	3 / <5	5 / <5	<2 / 18	<1 / <10	10 / 14	20	180	Pyjama rock
47	98N 09960E	4 / <5	5 / <5	<2 / 18	1 / <10	<10 / 14	25	150	"
48	98N 09940E	<2 / 5	10 / <5	2 / 50	<1 / <10	<10 / 14	20	70	"
49	98N 09920E	7 / <5	15 / <5	2 / 60	1 / <10	<10 / 14	15	46	Black siltstone
716450	98N 09900E	2 / <5	8 / <5	2 / 32	<1 / <10	<10 / 14	25	80	Pyjama rock
51	98N 09880E	3 / 5	12 / <5	5 / 80	<1 / <10	<10 / 6	25	48	Pyjama rock
52	98N 09860E	<2 / <5	15 / <5	2 / 45	1 / <10	<10 / 4	40	110	Pyjama rock minor blacksilts
53	98N 09840E	5 / 5	15 / <5	15 / 60	1 / <10	10 / 6	50	75	50% pyj. 50% blacksilts
54	98N 09820E	4 / <5	18 / <5	8 / 85	1 / <10	<10 / 6	30	85	Pyjama rock
55	98N 09800E	5 / 5	25 / <5	8 / 190	1 / <10	<10 / 8	30	140	pyjama rock
56	98N 09780E	<2 / <5	15 / <5	<2 / 50	<1 / <10	10 / 14	<10	130	black silts
57	98N 09760E	<2 / <5	25 / <5	<2 / 130	1 / <10	<10 / 6	<10	70	Pyjama rock
58	98N 09740E	19 / <5	170 / <5	600 / 15	<1 / <10	<10 / 4	<10	30	" Pyjama rock - brown alt.
59	98N 09720E	11 / 5	8 / <5	100 / 20	1 / <10	<10 / 4	20	110	"
716460	98N 09700E	8 / <5	10 / <5	65 / 28	1 / <10	<10 / 8	15	130	Pyjama rock.
61	98N 09680E	13 / <5	8 / <5	5 / 15	1 / <10	<10 / 12	25	24	"
62	98N 09660E	8 / <5	5 / <5	2 / 12	<1 / <10	<10 / 6	15	70	Grey silts
63	98N 09640E	7 / <5	15 / <5	2 / 70	1 / <10	<10 / 14	15	50	Pyjama rock
64	98N 09620E	3 / <5	5 / <5	2 / 58	1 / <10	<10 / 14	55	190	Pyjama rock
65	98N 09600E	<2 / <5	2 / <5	5 / 8	<1 / <10	<10 / 4	50	130	Pyjama rock

U38

GEOCHEMICAL ROCK SAMPLING LEDGER 140039

Page No. 2

TENEMENT SPL 781 D.P.O. No. 108

AREA/PROSPECT Spectacle Hill SAMPLE No's. 716466 - 500 GEOLOGIST NRL DATE Nov 79

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 2

Sample No.	Grid Coord.	Metal Content in ppm. Pb/Co	Zn/Ni	Cu/Mn	Ag/Cr	Ba/Bi	W	Sn.	Geological observations % 15
716466	9780N 9980E	2/25	2/25	<2/15	<1/<10	<10/<4	45	120	Silicified? Pyjama rock
67	9780N 9910E	<2/25	2/25	<2/15	1/<10	<10/<4	35	85	Pyjama rock
68	9780N 9990E	4/25	2/25	2/18	<1/<10	<10/<4	60	210	Pyjama rock
69	9780N 10010E	3/25	2/25	5/12	<1/<10	<10/<4	40	1100	Pyjama rock
70	9780N 10050E	7/25	2/25	2/18	<1/<10	<10/<4	75	290	Pyjama rock
71	9780N 10090E	5/25	2/25	5/12	<1/<10	15/<4	40	480	Pyjama rock
672	9780N 10130E	6/25	5/25	<2/18	<1/<10	<10/<4	50	220	White siltite
73	9780N 10170E	<2/25	2/25	2/10	1/<10	<10/<4	20	280	White siltite
74	9780N 10210E	<2/25	2/25	2/12	1/<10	<10/<4	35	55	50 Pyjama rock 50% siltite
716475	9780N 10250E	3/25	2/25	2/12	<1/<10	<10/<4	20	55	40 Pyjama rock 60% quartzite
76	9780N 10290E	5/25	2/25	<2/8	1/<10	<10/<4	30	90	Pyjama rock minor siltite
77	9780N 10330E	3/25	2/25	<2/8	<1/<10	<10/<4	15	70	20% siltite 80% pyjama
78	9780N 10370E	<2/25	<2/25	<2/5	<1/<10	<10/<4	<10	450	Siltite
79	9780N 10410E	<2/25	<2/25	<2/10	<1/<10	<10/<4	10	110	90% siltite 10% pyjama
80	9780N 10450E	3/25	5/25	12/15	<1/<10	<10/<4	60	170	20% siltite 80% pyjama
81	9780N 10490E	<2/25	2/25	<2/8	<1/<10	<10/<4	25	220	Quartzite
82	9670N 9490E	<2/25	2/25	2/10	<1/<10	10/<4	20	430	Pyjama rock, qtz veins
83	9670N 9530E	3/25	2/25	<2/10	<1/<10	<10/<4	35	210	Silicified? pyjama
34	9670N 9570E	<2/25	10/25	5/60	1/<10	15/<4	20	100	Pyjama rock
85	9670N 9610E	<2/25	2/25	2/10	<1/<10	<10/<4	<10	100	Pyjama rock
86	9670N 9650E	5/25	2/25	5/10	<1/<10	<10/4	20	60	Pyjama rock
87	9670N 9690E	<2/25	2/25	5/12	1/<10	<10/<4	20	55	Pyjama rock
88	9670N 9730E	<2/25	2/25	2/8	1/<10	<10/<4	20	70	Grey siltstone
89	9670N 9770E	4/25	2/25	2/10	1/<10	<10/<4	45	460	Pyjama rock
716490	9580N 9890E	3/25	5/25	20/12	1/<10	<10/<4	25	95	Pyjama rock
91	9580N 9910E	<2/25	5/25	5/10	1/<10	<10/<4	15	150	Pyjama rock
92	9580N 9930E	<2/25	10/25	<2/90	1/<10	<10/<4	25	90	Pyjama rock
93	9580N 9950E	<2/25	2/25	2/15	1/<10	<10/<4	25	70	Silicified pyjama
94	9580N 9970E	<2/25	<2/25	2/10	1/<10	<10/<4	25	220	Black siltstone
95	9580N 9990E	<2/25	<2/25	<2/10	1/<10	<10/<4	40	130	Silicified Pyjama
96	9580N 10010E	<2/25	2/25	2/10	1/<10	<10/<4	25	95	Pyjama rock
97	9580N 10030E	<2/25	5/25	2/12	1/<10	<10/<4	60	190	20% quartzite, 80% pyj
956	9580N 10050E	8/25	12/25	15/55	1/<10	<10/10	15	42	Pyjama rock
99	9580N 10090E	6/25	15/25	2/60	1/<10	<10/<4	20	130	Pyjama rock
716500	9580N 10130E	2/25	10/25	2/100	1/<10	<10/<4	10	85	Pyjama rock qtz veins

039

140040

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 3

TENEMENT SPL 781

D.P.O. No. 408 (to 716505) 409 (from 716506)

AREA/PROSPECT Spencer Hill SAMPLE No's. 716 501 – 535 GEOLOGIST NZ/TLP DATE March 79

PLAN REFERENCE

ANALYSED BY AMDEL

APPENDIX 3 PAGE 3 of 15

Sample No.	Grid Coord.	Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Ta / Bi	W	Sn.	Geological observations
		Metal Content in ppm.							
716501	9570E 9920E	2 / <5	2 / <5	2 / 28	1 / <10	<10 / <4	<10	75	Green siltstone.
02	9510E 9920E	<5 / <5	2 / <5	<2 / 10	<1 / <10	<10 / <4	15	110	White siltite.
03	Adit	34 / <5	28 / <5	200 / 180	1 / <10	<10 / 130	360	2200	Grey siltstone
04	"	17 / 8	18 / <5	100 / 190	1 / <10	<10 / 26	410	340	"
05	"	9 / 5	5 / <5	48 / 40	1 / <10	10 / 10	30	250	"
06	9510N 9940E	<5 / <5	2 / <5	2 / 10	<1 / <10	<10 / <4	10	30	Quartzite and siltite
07	94N 9830E	8 / <5	10 / <5	2 / 10	<1 / <10	<10 / <4	15	24	Green siltstone.
08	94N 9850N	<5 / <5	8 / <5	<2 / 42	<1 / <10	<10 / <4	20	210	Dark grey siltstone.
09	94N 9870N	<5 / <5	2 / <5	<2 / 38	<1 / <10	<10 / <4	20	24	Green siltstone and quartzite
510	94N 9940E	<5 / <5	2 / <5	<2 / 20	<1 / <10	<10 / <4	25	180	Brown siltstone.
11	94N 10020E	5 / <5	20 / <5	<2 / 22	<1 / <10	<10 / <4	15	440	Grey siltstone + quartzite
12	94N 10040E	<5 / <5	<2 / <5	<2 / 8	<1 / <10	<10 / <4	10	46	Quartzite.
13	9260N 9910E	8 / <5	5 / <5	8 / 48	<1 / <10	<10 / <4	60	310	Brown siltstone.
14	9250N 9930E	8 / <5	5 / <5	18 / 28	<1 / <10	<10 / <4	20	48	"
15	9250N 9950E	150 / <5	22 / 5	40 / 60	<1 / <10	<10 / 4	25	190	Green siltstone
16	9250N 100[illegible]	12 / <5	8 / <5	5 / 140	<1 / <10	<10 / <4	35	130	Dark grey siltstone.
17	9225N 100[illegible]	90 / <5	130 / <5	80 / 410	<1 / <10	<10 / <4	15	250	Green siltstone.
18	9230N 100[illegible]	8 / <5	12 / <5	5 / 130	<1 / <10	<10 / <4	35	450	Dark siltstone + siltite
19	92[illegible]N 100[illegible]	10 / <5	5 / <5	8 / 10	<1 / <10	<10 / 4	140	220	White clay
520	9220N 100[illegible]	15 / <5	50 / <5	10 / 110	<1 / <10	<10 / <4	15	130	Dark brown pyj
21	93N 10100E	10 / <5	5 / <5	10 / 28	<1 / <10	<10 / <4	20	160	Pyjama rock
22	93 10120E	5 / <5	8 / <5	5 / 28	<1 / <10	<10 / 4	20	110	
23	86N 10440E	8 / <5	12 / <5	<2 / 42	<1 / <10	<10 / <4	20	300	Yellow siltstones
24	83N 10420E	22 / <5	35 / 5	<2 / 150	<1 / <10	<10 / <4	15	50	Grey siltstone
25	83N 10400E	35 / <5	48 / 8	<2 / 270	<1 / <10	<10 / <4	10	85	Yellow + green siltstone.
26	83N 10380E	18 / <5	55 / 8	<2 / 400	<1 / <10	<10 / <4	10	18	"
27	83N 10360E	15 / <5	65 / 8	<2 / 330	<1 / <10	<10 / <4	10	42	"
28	83N 10340E	20 / <5	50 / 8	<2 / 400	<1 / <10	10 / <4	15	42	"
29	83N 10320E	20 / <5	60 / 10	5 / 550	<1 / <10	<10 / <4	10	90	"
530	83N 10300E	28 / <5	70 / 10	5 / 240	<1 / <10	<10 / <4	15	150	Grey siltstone.
31	84N 10540E	18 / <5	48 / 5	2 / 280	<1 / <10	<10 / <4	10	6	"
32	84N 10520E	28 / <5	42 / 5	<2 / 240	<1 / <10	<10 / <4	20	70	"
33	84N 10500E	15 / <5	55 / 10	2 / 240	<1 / <10	<10 / <4	10	30	Yellow and green siltite.
34	84N 10480E	85 / <5	60 / 12	20 / 200	<1 / <10	<10 / <4	<10	24	"
35	84N 10460E	22 / <5	45 / 10	10 / 210	<1 / <10	<10 / <4	10	130	"

048

GEOCHEMICAL ROCK SAMPLING LEDGER 140041 Page No. 4

TENEMENT SPL 751 D.P.O. No. 409

AREA/PROSPECT Spearman Hill SAMPLE No's. 716536 – 570 GEOLOGIST NRL/TLP DATE April 87

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 4 of 15

Sample No.	Grid Coord.	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Ta / Bi	W	Sn	Geological observations
716536	89N 10440E	18 / 45	42 / 5	8 / 190	<1 / <10	<10 / <4	20	310	Yellow grey siltstone.
37	89N 10420E	8 / 45	35 / 8	2 / 180	<1 / <10	<10 / <4	20	190	"
38	89N 10400E	15 / 45	45 / 8	5 / 500	<1 / <10	<10 / <4	55	130	"
39	89N 10380E	22 / 45	70 / 12	15 / 510	<1 / <10	<10 / <4	20	60	Green siltstone
540		28 / 8	75 / 10	15 / 600	<1 / <10	<10 / <4	15	220	
41	92N 9850 10040 9850E	10 / <5	35 / <5	5 / 380	<1 / <10	<10 / <4	10	12	Grey siltstone.
42	92N 10040 9850E	10 / <5	22 / <5	5 / 350	<1 / <10	<10 / <4	10	40	Grey silic. siltstone.
43	92N 10110E	52 / <5	22 / <5	18 / 880	<1 / <10	<10 / <4	10	8	Pyjama rock
44	92N 10180E	45 / <5	42 / <5	5 / 12	<1 / <10	<10 / <4	<10	10	Quartzite.
45	94N 10000E	5 / <5	2 / <5	5 / 18	<1 / <10	<10 / <4	30	310	Grey siltstone.
46	91N 10000E	5 / <5	25 / <5	5 / 260	<1 / <10	<10 / <4	15	8	Yellow silic. siltstone.
47	91N 9850E	<5 / <5	2 / <5	5 / 18	<1 / <10	<10 / <4	10	6	Grey siltstone and quartzite
48	91N 10000E	<5 / <5	42 / <5	5 / 18	<1 / <10	<10 / <4	<10	12	Grey silic. siltstone
49	90N 9850E	15 / <5	45 / <5	8 / 440	<1 / <10	<10 / 4	40	170	"
550	89N 9850E	12 / <5	2 / <5	40 / 32	<1 / <10	<10 / <4	<10	4	Quartzite
51	88N 10010E	10 / <5	18 / <5	12 / 200	<1 / <10	<10 / <4	20	40	Grey siltstone and quartzite
52	88N 10035E	12 / <5	45 / 5	2 / 380	<1 / <10	10 / <4	15	18	Yellow and green siltstone.
53	88N 10050E	15 / <5	45 / 10	22 / 420	<1 / <10	<10 / <4	10	38	"
54	88N 10065E	12 / 5	48 / 10	22 / 450	<1 / <10	<10 / <4	10	85	"
55	88N 10085E	18 / <5	45 / <5	5 / 410	<1 / <10	<10 / 4	15	38	"
56	88N 10105E	22 / <5	12 / <5	2 / 46	<1 / <10	<10 / 4	25	190	Yellow grey
57	87N 10210E	15 / 8	75 / 12	2 / 880	<1 / <10	<10 / <4	<10	85	Green siltstone
58	87N 10135E	10 / 5	40 / 5	2 / 180	<1 / <10	<10 / <4	10	10	"
59	87N 10000E	8 / <5	25 / 5	22 / 360	<1 / 10	<10 / <4	10	6	Grey siltstone
560	90N 10020E	10 / <5	15 / 8	22 / 140	<1 / <10	<10 / <4	15	32	Green siltstone
61	90N 10060E	22 / <5	48 / 12	8 / 330	<1 / 10	<10 / <4	<10	65	"
62	90N 10080E	35 / <5	42 / 8	10 / 170	<1 / <10	<10 / <4	15	22	Dark grey siltstone
63	90N 10080E	8 / <5	12 / 5	22 / 38	<1 / <10	<10 / <4	15	140	Yellow and green siltstone.
64	90N 10100E	8 / <5	20 / 8	22 / 85	<1 / <10	<10 / <4	15	640	"
65	90N 10120E	10 / <5	50 / 10	5 / 320	<1 / 10	<10 / <10	10	60	"
66	90N 10140E	10 / <5	38 / 10	2 / 250	<1 / <10	<10 / <4	105	12	Grey siltstone.
67	90N 10160E	12 / <5	45 / 15	8 / 300	<1 / <10	<10 / <4	15	140	Green siltstone
68	90N 10180E	13 / <5	60 / 12	20 / 340	<1 / <10	<10 / <4	15	140	"
69	90N 10200E	15 / <5	42 / 10	25 / 300	<1 / <10	<10 / <4	30	140	"
570	90N 10220E	10 / <5	42 / 10	5 / 340	<1 / <10	<10 / <4	15	28	Green siltstone

041

140042

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 5

TENEMENT SPL 781 D.P.O. No. Aeg

AREA/PROSPECT Specimen Hill SAMPLE No's 716571-716605 GEOLOGIST NRL/TJP DATE April 79

PLAN REFERENCE ANALYSED BY NATA

APPENDIX 3 PAGE 5

Geological observations of 15

Sample No.	Grid Coord.	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Ta / Bi	W	Sn	Geological observations
716571	9IN 10660E	5 / <5	32 / 8	5 / 380	<1 / <10	<10 / <4	<10	10	Grey siltstones.
72	9IN 10265E	<5 / <5	5 / <5	<2 / 30	<1 / <10	<10 / <4	15	310	Green grey siltstones.
73	9IN 10285E	5 / <5	8 / <5	2 / 55	<1 / <10	<10 / <4	25	160	"
74	9IN 10330E	13 / 8	65 / 15	<2 / 320	<1 / 10	<10 / <4	15	55	"
75	9IN 10350E	13 / 5	55 / 15	2 / 370	<1 / 10	<10 / <4	10	22	"
76	9IN 10415E	10 / 5	70 / 15	5 / 810	<1 / 10	<10 / <4	15	12	Yellow siltstones.
77	Scraplan	42 / <5	45 / 8	25 / 240	1 / <10	10 / 12	20	430	
78	"	18 / <5	22 / 10	5 / 80	<1 / <10	<10 / <4	20	150	
79	"	8 / <5	40 / 8	<2 / 80	<1 / <10	<10 / <4	10	160	
580	"	12 / 8	95 / 18	2 / 180	<1 / <10	<10 / <4	<10	<4	
81	"	12 / <5	55 / 12	2 / 280	<1 / <10	<10 / <4	15	4	
82	92N 10365E	25 / 5	50 / 12	35 / 390	<1 / <10	<10 / 12	250	580	Light brown siltstones.
83	92N 10345E	5 / <5	2 / <5	<2 / 10	<1 / <10	<10 / <4	10	230	"
84	92N 10310E	5 / <5	2 / <5	<2 / 10	<1 / <10	<10 / <4	20	120	Brown and green siltstones.
85	92N 10270E	8 / <5	2 / <5	<2 / 20	<1 / <10	<10 / 4	10	26	Grey green siltstones.
86	93N 10280E	25 / <5	15 / <5	28 / 65	<1 / <10	<10 / <4	15	440	Yellow siltstones.
87	93N 10340E	8 / <5	5 / <5	<2 / 22	<1 / <10	<10 / <4	20	85	Brown siltstones and quartzite.
88	94N 10330E	15 / <5	10 / <5	22 / 65	<1 / <10	<10 / <4	15	200	Yellow and brown siltstones.
589	9IN 10360E	8 / <5	5 / <5	38 / 30	<1 / <10	<10 / <4	40	190	" + quartzite.
90	95N 10420E	22 / <5	10 / <5	180 / 25	<1 / <10	<10 / 46	180	2750	Yellow clay
91	96N 10435E	12 / <5	5 / <5	<2 / 12	<1 / <10	<10 / <4	15	280	Grey siltstone + quartzite.
92	Scraplan	10 / <5	5 / <5	15 / 12	<1 / <10	<10 / 4	15	44	Yellow + brown siltstone
93	"	18 / <5	300 / 8	12 / 110	<1 / <10	<10 / <4	<10	65	Black siltstone.
94	99N 10265E	12 / <5	8 / <5	2 / 20	<1 / <10	<10 / <4	10	190	"
95	99N 10245E	<5 / <5	2 / <5	2 / 8	2 / <10	10 / <4	20	50	Brown siltstone + quartzite.
96	99N 10165E	190 / <5	18 / <5	180 / 32	<1 / <10	<10 / 22	10	65	"Pyjama" rock
97	99N 10145E	25 / <5	15 / <5	30 / 60	<1 / <10	<10 / 6	15	36	"
98	99N 10100E	32 / <5	25 / <5	30 / 60	<1 / <10	<10 / <4	10	12	"pyjama" rock
99	99N 10050E	25 / <5	12 / <5	12 / 90	<1 / <10	<10 / 6	35	44	"
600	99N 10000E	25 / <5	8 / <5	40 / 60	<1 / <10	<10 / <4	25	70	"
C1	99N 10075E	10 / <5	2 / <5	35 / 18	<1 / <10	<10 / <4	15	12	"
C2	99N 9935E	12 / <5	42 / <5	20 / 310	<1 / <10	<10 / <4	<10	150	Grey, silic. siltstone.
C3	99N 9925E	10 / <5	42 / <5	35 / 230	<1 / <10	<10 / <4	15	40	" + quartz.
C4	100N 9985E	10 / <5	2 / <5	15 / 50	<1 / <10	<10 / <4	<10	130	Pyjama rock
C5	100N 9955E	<5 / <5	2 / <5	12 / 8	<1 / <10	<10 / <4	<10	6	Grey siltstones

042

GEOCHEMICAL ROCK SAMPLING LEDGER 140043

Page No. 6

TENEMENT SPL 781 D.P.O. No. 49 (to 71662) 46 (from 71631)

AREA/PROSPECT Specimen Hill SAMPLE No's. 71666 – 140 GEOLOGIST NRL DATE April 89

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 6

Geological observations 8 of 15

Sample No.	Grid Coord.	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Ta / Bi	W	Sn	Geological observations
71666	100N 9935E	12 / <5	60 / <5	12 / 900	<1 / <10	<10 / <4	<10	1	Grey silic siltstones
7	100N 9940E	25 / 5	300 / 5	5 / 310	<1 / <10	<10 / <4	15	160	Dark grey siltstone
68	100N 9945E	10 / <5	10 / <5	5 / 95	<1 / <10	<10 / <4	20	46	Grey-green siltstones
69	100N 9950E	25 / <5	22 / <5	30 / 60	<1 / <10	<10 / <4	15	120	"
70	100N 9955E	15 / <5	25 / <5	12 / 240	<1 / <10	<10 / <4	25	130	"
71	100N 9960E	22 / 10	38 / 10	70 / 150	<1 / <10	<10 / <4	15	140	Dark grey siltstones
72	100N 9965E	35 / 5	42 / <5	240 / 720	2 / <10	<10 / 36	15	190	Silic laminated siltstone bedded
73	100N 9970E	10 / 8	110 / 5	25 / 470	<1 / <10	<10 / <4	10	120	Quartz formation + silic. siltstone
74	100N 9975E	8 / <5	15 / <5	5 / 110	<1 / <10	<10 / 4	<10	16	Yellow clay
75	100N 9980E	10 / <5	12 / <5	5 / 80	<1 / <10	<10 / <4	10	90	Grey green siltstone
76	100N 9985E	10 / <5	10 / <5	12 / 30	<1 / <10	<10 / <4	10	36	"
77	100N 9990E	12 / <5	10 / <5	12 / 50	<1 / <10	<10 / <4	<10	18	"
78	100N 9995E	8 / <5	12 / <5	12 / 75	<1 / <10	<10 / <4	<10	16	Pyjama rock
79	100N 10000E	20 / <5	35 / <5	5 / 150	<1 / <10	<10 / <4	10	10	"
620	100N 10005E	8 / <5	5 / 25	20 / 45	<1 / <10	<10 / <4	<10	75	Grey green siltstone
81	100N 10010E	<5 / <5	12 / <5	5 / 10	<1 / <10	<10 / <10	<10	38	Grey siltstone
82	100N 10015E	8 / <5	2 / <5	12 / 15	<1 / <10	<10 / <10	<10	26	Black micaceous siltstone
83	100N 10020E	5 / <5	15 / <5	15 / 200	<1 / <10	<10 / <10	10	85	"
84	100N 10025E	5 / <5	28 / <5	32 / 350	<1 / 40	<10 / <10	<10	8	Silic laminated siltstone
85	100N 10030E	<5 / <5	5 / <5	2 / 90	<1 / <10	<10 / <10	<10	80	Grey siltstone
86	100N 10035E	8 / <5	2 / <5	22 / 28	<1 / <10	<10 / <10	15	100	Grey micaceous siltstone
87	100N 10040E	15 / <5	12 / <5	12 / 20	<1 / <10	15 / <10	<10	16	Pyjama rock
88	100N 10045E	10 / <5	12 / <5	12 / 90	<1 / <10	<10 / <10	30	55	"
89	100N 10050E	5 / <5	12 / <5	2 / 35	<1 / <10	<10 / <10	15	34	White silicite + brown siltstone
690	100N 10055E	5 / <5	5 / <5	12 / 25	<1 / <10	<10 / <10	<10	14	Silicous lam siltstone
91	100N 10060E	12 / <5	2 / <5	10 / 30	<1 / <10	<10 / <10	<10	20	Brown micaceous siltstone
92	100N 10065E	12 / <5	20 / <5	10 / 95	<1 / <10	10 / <10	15	220	Yellow clay
93	100N 10070E	20 / <5	18 / <5	20 / 80	<1 / <10	<10 / <10	<10	30	"
94	100N 10075E	5 / <5	22 / <5	5 / 120	<1 / <10	<10 / <10	15	6	Brown siltstone
95	100N 10080E	50 / <5	18 / <5	15 / 60	<1 / <10	<10 / <10	<10	8	Pyjama rock
96	100N 10085E	50 / <5	82 / <5	12 / 110	<1 / <10	<10 / <10	<10	6	"
97	100N 10090E	25 / <5	28 / <5	8 / 100	<1 / <10	10 / <10	<10	14	"
98	100N 10095E	40 / <5	2 / <5	10 / 150	<1 / <10	15 / <10	<10	10	"
99	100N 10100E	60 / <5	5 / <5	15 / 100	<1 / <10	<10 / <10	<10	4	" " silicified
700	100N 10105E	120 / <5	12 / <5	25 / 250	<1 / <10	<10 / <10	<10	6	"

140044

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 7

943

TENEMENT SPL 781 D.P.O. No. 410

AREA/PROSPECT Specimen Hill SAMPLE No's. 716641 - 675 GEOLOGIST NRL DATE April 79

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 7

Sample No.	Grid Coord.	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Te / Bi	W	Sn.	Geological observations # 15
716641	[illegible]	8 / <25	8 / <25	8 / 75	<1 / <10	<10 / <10	<10	8	Yellow brown quartzite
42	[illegible]	<25 / <25	12 / <25	2 / 5	<1 / <10	<10 / <10	<10	120	Grey green siltstone.
43	[illegible]	<25 / <25	12 / <25	3 / 110	<1 / <10	<10 / <10	15	30	Grey green siltstone
44	[illegible]	5 / <25	8 / <25	3 / 65	<1 / <10	25 / <10	<10	30	Yellow clay + limonite
45	[illegible]	<25 / <25	12 / <25	2 / <5	<1 / <10	<10 / <10	<10	<4	Quartzite
46	[illegible]	10 / <25	10 / <25	28 / 55	<1 / <10	<10 / <10	10	8	Pyjama rock
47	[illegible]	<5 / <25	12 / <25	10 / 30	<1 / <10	<10 / <10	20	560	"
48	[illegible]	15 / <25	10 / <25	15 / 40	<1 / <10	<10 / <10	<10	50	"
49	[illegible]	12 / <25	12 / <25	18 / 20	<1 / <10	<10 / <10	10	240	Brown mica. pyritic siltstone
650	[illegible]	15 / <25	12 / <25	15 / 25	<1 / <10	<10 / <10	<10	110	"
51	[illegible]	30 / <25	10 / <25	15 / 45	<1 / <10	<10 / <10	10	28	Pyjama + black siltstone.
52	[illegible]	<25 / <25	8 / <25	5 / 75	<1 / <10	<10 / <10	<10	170	"
53	[illegible]	<5 / <25	10 / <25	15 / 45	<1 / <10	<10 / <10	<10	200	" + massive white qtz s.H/s
54	[illegible]	18 / <25	12 / <25	13 / 40	<1 / <10	<10 / <10	<10	48	Pyjama rock
55		25 / <25	8 / <25	18 / 20	<1 / <10	<10 / <10	10	65	Pyritic grey green sill/s
56		12 / 5	15 / 5	35 / 45	<1 / <10	<10 / <10	<10.	22	Dark brown pyr. sill/s
57		18 / <25	12 / <25	20 / 35	<1 / <10	<10 / <10	10	55	"
58		5 / 5	18 / <25	18 / 40	<1 / <10	<10 / <10	<10	44	Pyjamas + green siltstone
59		8 / <25	10 / <25	8 / 30	<1 / <10	<10 / <10	15	34	"
660	[illegible]	5 / <25	2 / <25	5 / 30	<1 / <10	<10 / <10	<10	<4	Grey ferug quartzite
61	[illegible]	<5 / <25	12 / <25	5 / <5	<1 / <10	<10 / <10	<10	4	"
62	[illegible]	5 / <25	15 / <25	5 / 220	<1 / 15	<10 / <10	<10	<4	Pyjama rock.
63	[illegible]	<5 / <25	10 / <25	2 / 100	<1 / <10	10 / <10	<10	<4	Yellow clay
64	[illegible]	8 / <25	5 / <25	2 / 45	<1 / <10	<10 / <10	10	46	Pyjama rock
65	[illegible]	12 / <25	10 / <25	5 / 85	<1 / <10	<10 / <10	<10	6	Pyjama rock
66	[illegible]	8 / <25	8 / <25	5 / 70	<1 / <10	<10 / <10	<10	6	Pyritic pyjama
67	[illegible]	5 / <25	12 / <25	5 / 150	<1 / <10	<10 / <10	<10	<4	Grey siltstone + siltite
68	[illegible]	5 / <25	10 / <25	8 / 90	<1 / <10	<10 / <10	<10	4	Siltstone + quartzite
69	[illegible]	5 / <25	8 / <25	8 / 65	<1 / <10	<10 / <10	<10	<4	Grey quartzite
670	[illegible]	5 / <25	2 / <25	2 / 20	<1 / <10	<10 / <10	<10	18	Grey siltstone
71	[illegible]	10 / <25	8 / <25	5 / 45	<1 / <10	<10 / <10	<10	<4	Pyjama rock
72	[illegible]	12 / <25	30 / <25	8 / 55	<1 / <10	<10 / <10	<10	<4	Pyritic pyjamas
73	[illegible]	12 / <25	25 / <25	8 / 150	<1 / <10	<10 / <10	<10	18	Yellow clay.
74	[illegible]	8 / <25	5 / <25	2 / 60	<1 / <10	<10 / <10	<10	10	Grey siltstone
75	[illegible]	8 / <25	8 / <25	8 / 65	<1 / <10	<10 / <10	<10	34	Dark grey siltstone.

044

GEOCHEMICAL ROCK SAMPLING LEDGER 140045

Page No. 5

TENEMENT SEL 781 D.P.O. No. 410

AREA/PROSPECT Specimen Hill SAMPLE No's 71676 - 7109 GEOLOGIST NRL DATE April 89

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 8 of 15

Sample No.	Grid Coord	Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Ta / Bi	W	Sn.	Geological observations
71676	10SN 9070E	5 / <5	10 / 5	15 / 65	<1 / 10	<10 / <10	<10	290	Dark grey siltstone.
77	10SN 9050E	130 / <5	5 / <5	30 / 25	<1 / <10	10 / <10	<10	80	"
78	10SN 9030E	<5 / <5	8 / <5	5 / 160	<1 / <10	15 / <10	<10	<4	Lam. silic. ferug siltstone.
79	10SN 10040E	<5 / <5	2 / <5	5 / 25	<1 / <10	<10 / <10	<10	4	White siltite.
650	10SN 10020E	10 / 10	10 / 5	20 / 100	<1 / <10	10 / <10	<10	<4	Pyritic green quartzite.
81	10SN 10000E	<5 / <5	8 / <5	5 / 10	<1 / 10	10 / <10	<10	<4	Yellow limonitic siltstone.
82	10SN 9980E	<5 / <5	5 / <5	5 / 10	<1 / <10	<10 / <10	10	<4	Pyritic pyjamas
83	10SN 9960E	<5 / <5	12 / <5	2 / 150	<1 / <10	<10 / <10	10	6	Pyjama rock
84	10SN 9940E	<5 / <5	15 / <5	12 / 180	<1 / <10	<10 / <10	<10	4	"
85	10SN 9920E	<5 / <5	15 / 20	5 / 130	<1 / 20	<10 / <10	<10	6	Green siltstone
86	10SN 9900E	<5 / <5	5 / <5	2 / 30	<1 / <10	<10 / <10	<10	<4	Pyjama rock.
87	10SN 9880E	<5 / <5	12 / <5	2 / 30	<1 / <10	<10 / <10	<10	20	White siltite
88	10SN 9860E	<5 / <5	8 / <5	5 / 90	<1 / <10	<10 / <10	<10	<4	Silicified grey siltstone.
89	10SN 9840E	<5 / <5	8 / <5	5 / 85	<1 / <10	10 / <10	<10	4	Pyjama rock
690	10SN 9820E	<5 / <5	2 / <5	5 / 20	<1 / <10	<10 / <10	<10	6	"
91	10SN 9800E	<5 / <5	12 / <5	5 / 15	<1 / <10	<10 / <10	<10	44	"
92	10SN 9780E	5 / 5	10 / <5	28 / 150	<1 / <10	<10 / <10	<10	38	Pyritic green siltstone.
93	10SN 9760E	15 / <5	12 / <5	5 / 25	<1 / <10	<10 / <10	<10	6	Dark grey micr. sills.
94	10SN 9740E	10 / <5	12 / <5	5 / 30	<1 / <10	<10 / <10	<10	6	"
95	10SN 9720E	5 / <5	8 / <5	8 / 65	<1 / <10	10 / <10	10	6	"
96	10SN 10170E	<5 / <5	8 / <5	2 / 95	<1 / <10	<10 / <10	<10	12	White siltite + green siltstone.
97	10SN 10220E	<5 / <5	2 / <5	2 / 15	<1 / <10	<10 / <10	<10	14	"
98	10SN 10270E	18 / <5	20 / <5	12 / 100	<1 / <10	<10 / <10	<10	36	Green pyritic silts
99	10SN 10320E	10 / <5	8 / <5	12 / 25	<1 / <10	<10 / <10	<10	12	"
700	10SN 10370E	10 / <5	5 / <5	15 / 25	<1 / <10	<10 / <10	<10	6	Pyritic Pyjamas
01	10SN 10420E	5 / 10	35 / 5	10 / 210	<1 / <10	<10 / <10	10	<4	"
02	10SN 10470E	8 / <5	2 / <5	8 / 30	<1 / <10	<10 / <10	<10	10	"
03	10SN 10520E	8 / <5	12 / <5	5 / 200	<1 / <10	<10 / <10	<10	8	Lam. silic ferug. grey silts.
04	10SN 10570E	10 / 5	20 / <5	10 / 1350	<1 / 20	<10 / <10	10	26	"
05	10SN 10620E	<5 / <5	18 / <5	5 / 55	<1 / <10	15 / <10	<10	36	Brn. & green micr. silts
06	10SN 10670E	<5 / <5	2 / <5	5 / 45	<1 / <10	<10 / <10	<10	38	Pale yellow silts
07	10SN 10720E	5 / <5	18 / 5	5 / 770	<1 / <10	<10 / <10	<10	14	Silic. dk grey pyritic silts
08	10SN 10770E	<5 / <5	12 / <5	5 / 60	<1 / <10	<10 / <10	<10	6	Dk grey micr. py silts
09	10SN 10820E	<5 / <5	12 / <5	5 / 10	<1 / <10	<10 / <10	<10	<4	"
710									

045

GEOCHEMICAL ROCK SAMPLING LEDGER 140046

Page No. 4

TENEMENT BALFOUR SRL 781 D.P.O. No. 411 to 71672

AREA/PROSPECT Specimen Hill SAMPLE No's 71670 - 744 GEOLOGIST NGL DATE MAY 74

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 9

Sample No.		Metal Content in ppm. Pb / Co	Zn / Ni	Cu / Mn	Ag / Cr	Mo / Bi	Sn	W	Geological observations of 15
71670	97N 99E	<10 / <5	3 / <5	2 / 15	<1 / 10	<10 / <10	90	20	Tourmaline pyj. rock
11	serpluto	<10 / <5	2 / <5	2 / 10	<1 / 10	<10 / <10	120	55	"
12	"	<10 / <5	2 / <5	2 / 15	<1 / <10	<10 / <10	260	80	"
13	"	<10 / <5	5 / <5	2 / 15	<1 / <10	<10 / <10	30	55	"
14	"	<10 / <5	2 / <5	<2 / 10	<1 / <10	<10 / <10	240	10	"
15	"	<5	2	5 / 10	<1	15 / <10	170	60	"
16	Add to sample	10 / <5	15 / <5	150 / 47	<1 / <10	<10 / 40	1500	60	Laminated grey siltstone
17	" "	15 / <5	15 / <5	90 / 12	<1 / <10	<10 / <10	270	160	"
18	" "	10 / <5	15 / <5	55 / 12	<1 / <10	<10 / <10	120	70	"
19	Seepton	<5	25	35 / 150	1	<10 / <10	4	<10	Green silts & yellow clays
7672	"	<5	25	150 / 110	1	<10 / <10	<4	10	"
21	"	5	15	75 / 57	1	<10 / <10	6	<10	Green lam silts & yellow interbeds
22	"	10	15	190 / 100	1	<10 / <10	<4	<10	"
23	"	<5	10	170 / 2	1	<10 / <10	<4	10	"
24		<5	5	55 / 120	1	<10 / <10	<4	<10	"
25		<5	35	35 / 140	1	<10 / <10	52	<10	Green silts, pyrite in part
26		5	25	310 / 32	1	<10 / <10	<4	10	"
27		<5	10	25 / 25	1	<10 / <10	42	10	Thinly lam green silts
28		<5	4	32 / 17	1	10 / <10	520	10	"
29		5	2	12 / 10	<1	<10 / <10	6	<10	"
7673		5	5	10 / 11	<1	<10 / <10	6	<10	Brown and green silts with
31		5	5	10 / 12	<1	<10 / <10	8	10	white siltite interbeds
32		<5	5	22 / 12	<1	<10 / <10	6	<10	"
33		<5	5	12 / 5	<1	<10 / <10	500	<10	"
34		<5	5	5 / 15	<1	<10 / <10	5	<10	"
35		5	25	2 / 110	1	<10 / <10	<4	10	Green thinly lam silts
36		5	12	5 / 25	1	<10 / <10	<4	10	"
37		5	12	5 / 40	1	<10 / <10	6	<10	"
38		5	35	140 / 12	1	<10 / <10	4	<10	Green silts, pyrite in part +
39		<5	15	42 / 120	1	<10 / <10	<4	<10	black carbonaceous silts
7640		5	5	25 / 12	1	<10 / <10	<4	<10	"
41		5	4	55 / 220	1	<10 / <10	8	<10	Thin lam green silts
42		5	10	5 / 50	1	<10 / <10	<4	<10	Pyroxenite rock
43		10	5	15 / 15	1	<10 / <10	4	10	"
44		5	15	35 / 35	1	<10 / <10	4	10	Yellow clay limonite + quartz

140047

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 10

TENEMENT BALFOUR SPR 751 D.P.O. No. 416

AREA/PROSPECT Spearmint Hill SAMPLE No's. 716745 - 764 GEOLOGIST M.G.L. DATE 14-5-94

PLAN REFERENCE ANALYSED BY FINDEL

APPENDIX 3 PAGE 10 of 15

Sample No.		Metal Content in ppm. Pb	Zn	Cu	Ag	Ba/Bi	Sn	W.	Geological observations
716745		5	68	60/90	1	<10/<10	4	<10	Yellow clay + green silts.
46		5	20	55/100	2	<10/<10	10	<10	Grey and green silts
47		5	25	50/200	1	<10/<10	24	<10	"
48		5	35	5/100	1	<10/<10	4	15	Thinly lam green silts
49		<5	15	5/15	1	<10/<10	14	<10	"
750		5	12	10/45	1	<10/<10	4	<10	" + yellow clay
51		5	35	40/110	1	<10/<10	14	<10	Yellow clay + green pyritic silts.
52		5	25	12/100	1	<10/<10	8	<10	"
53		25	15	10/80	1	<10/<10	30	20	Pyjama rock + black siltstone
54		10	10	30/40	1	<10/<10	10	20	"
55		65	22	35/65	1	<10/<10	54	20	"
56		55	30	15/80	1	<10/<10	24	15	"
57		50	50	25/30	1	<10/<10	12	10	"
58		20	25	50/60	1	<10/<10	80	35	Quartz limonite vein
59		15	8	15/35	<1	<10/<10	55	20	Silic grey pyr siltstone
760		100	18	30/20	1	<10/<10	75	25	Black rock siltstone
61		30	10	50/60	1	<10/<10	30	25	Pyjama rock
62		20	20	50/45	1	<10/<10	65	10	"
63		10	5	65/15	1	<10/10	110	20	"
64		10	10	50/30	1	<10/10	55	30	"

140048

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 11

047

TENEMENT SPL 781 D.P.O. No. 416

AREA/PROSPECT Specimen Hill SAMPLE No's. 716765 – M. GEOLOGIST NRL. DATE June '79

PLAN REFERENCE ANALYSED BY AMDEL.

APPENDIX 3 PAGE 11

Geological observations 9 of 15

Sample No.		Metal Content in ppm. Pb	Zn	Cu	Ag	Bi / Mn	Sn	W.	Geological observations
716765	Development	5	8	35	<1	<10 / 10	<4	<10	Thinly lam green silt/s.
66		5	<2	5	<1	<10 / 20	4	10	Pyjama + grey silt/s
67		5	2	18	<1	<10 / 8	10	<10	Green and grey silt/s + quartzite.
68		5	2	12	<1	<10 / 5	14	<10	Grey silt/s
69		5	10	15	<1	<10 / 60	<4	<10	Grey green silt/s
716770		<5	12	35	<1	<10 / 160	6	<10	Yellow clay
71		25	35	8100	<1	<10 / 230	4	<10	Dolomite + Cu sulphides.
72		<5	25	90	<1	<10 / 360	4	10	Dark green lam silt/s
73		<5	2	12	<1	<10 / 15	<4	<10	Quartzite + siltite.
74		<5	30	50	<1	<10 / 360	10	10	Pale green silt/s.
75		<5	10	1500	<1	<10 / 70	6	<10	" + pyrite.
76		85	110	85	<1	<10 / 60	14	<10	Pyjama rock.
77		25	10	32	<1	<10 / 15	<4	<10	"
78		<5	5	2	<1	<10 / 45	4	<10	Grey and green silt/s.
79		<5	2	8	<1	<10 / 15	14	<10	"
716780		5	5	32	<1	<10 / 32	<4	10	"
81		<5	10	65	<1	<10 / 48	<4	<10	Soft grey silt/s
82		<5	10	100	<1	<10 / 70	6	<10	Thinly lam grey silt/s
83		<5	25	200	<1	<10 / 230	<4	<10	Pale green silt/s
84		5	30	10	<1	<10 / 48	<4	<10	" + yellow clay
85		10	25	15	<1	<10 / 50	<4	<10	Green silt/s
86		10	15	25	<1	<10 / 45	<4	<10	"
87		5	5	10	<1	<10 / 40	<4	10	"
88		<5	5	25	<1	<10 / 25	<4	<10	"
89		<5	15	22	<1	<10 / 150	12	<10	Thinly lam green silt/s
716790		<5	35	60	<1	<10 / 170	22	10	Yellow clay
91		<5	20	20	<1	<10 / 120	4	10	Silic green silt/s
92		<5	25	8	<1	<10 / 190	10	10	Yellow clay + limonite
93		<5	5	5	<1	<10 / 58	<4	<10	"
94	11450N 9970E	<5	<2	8	<1	<10 / 12	6	<10	Silic grey silt/s
95	11440N 10040E	5	10	12	<1	<10 / 260	4	<10	"
96	11450N 10100E	<5	<2	5	<1	<10 / 8	24	10	Pale grey silt/s.
97	11450N 10150E	5	15	2	<1	<10 / 680	4	<10	Dark grey silt/s + limonite
98	11500N 9970E	<5	2	2	<1	<10 / 60	<4	<10	Silic grey silt/s
716799	11500N 9950E	<5	5	5	<1	<10 / 80	<4	<10	"

* All Ta – <10 except 716793-

048 140049

GEOCHEMICAL ROCK SAMPLING LEDGER

Page No. 12

TENEMENT CPL 781 D.P.O. No. 416

AREA/PROSPECT Specimen Hill SAMPLE No's. 716800–717024 GEOLOGIST NRL DATE June '79

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 12

Sample No.		Metal Content in ppm. Pb	Zn	Cu	Ag	Bi / Mn	Sn	W.	Geological observations 7 IS
716800	116N 996E	<5	15	8	<1	<10 / 180	4	10	Silc. grey silts + yellow clay.
717001	116N 1040E	<5	12	5	<1	<10 / 240	8	<10	Brown pyritic silts.
02	115N 1012E	<5	5	5	<1	<10 / 140	10	10	Grey silts.
03	1155N 988E	5	2	5	<1	<10 / 15	<4	<10	Silic grey silts.
04	116N 1035E	20	25	15	<1	<10 / 120	<4	<10	Yellow lam siltite.
05	116N 1045E	10	5	2	<1	<10 / 45	<4	<10	"
06	1155N 1025E	<5	12	2	<1	<10 / 140	10	<10	Grey silts.
07	115N 1035E	5	15	20	<1	<10 / 120	6	<10	Yellow silts.
08	115N 1015E	10	12	8	<1	<10 / 170	7	<10	Grey and yellow silts.
09	115N 1015E	10	25	5	<1	<10 / 390	<4	<10	"
717010	115N 1010E	15	8	2	<1	<10 / 48	48	15	Orange clay
11		30	28	100	<1	<10 / 130	65	50	Yellow clay + quartzite.
12		10	38	28	<1	<10 / 250	230	20	Thin lam yellow+ underca. silts.
13		10	30	15	<1	<10 / 320	500	15	" + yellow clay
14		20	15	60	<1	10 / 60	210	25	Yellow + grey silts.
15		<5	<2	2	<1	<10 / 5	10	10	White clay
16		5	<2	10	<1	<10 / 15	200	<10	Yellow clay and brown silts.
17		<5	<2	5	<1	<10 / 10	560	15	"
18		<5	22	15	<1	<10 / 270	120	15	Pyjamas + limonite
19		10	5	3	<1	<10 / 100	460	10	"
717020		<5	2	5	<1	<10 / 12	110	10	Quartzite yellow silts
21		15	8	38	<1	<10 / 90	260	10	Yellow clay
22		25	40	18	<1	<10 / 20	24	15	Pyjama rock
23		25	50	15	<1	<10 / 170	44	<10	"
24		10	<2	5	<1	<10 / 58	16	<10	Quartzite + black thin lam. silts
25		<5	2	8	<1	<10 / 70	20	<10	Black thinly lam silts
26		<5	<2	<2	<1	<10 / 15	14	<10	"
27		<5	<2	2	<1	<10 / 12	10	<10	"
28		<5	<2	2	<1	<10 / 8	8	<10	White silts / quartzite
29		10	2	8	<1	<10 / 20	26	20	" + black silts.
717030		5	<2	2	<1	<10 / 18	36	10	Black silts + yellow clay.
31		5	2	2	<1	<10 / 15	18	10	
32		5	2	2	<1	<10 / 15	70	15	
33		<5	<2	5	<1	<10 / 12	10	<10	
717034		25	2	5	<1	<10 / 15	8	<10	

All Ta <10 except 716027

GEOCHEMICAL ROCK SAMPLING LEDGER 140050

Page No. 13

TENEMENT SPL 781 D.P.O. No. 46

AREA/PROSPECT Specimen Hill SAMPLE No's. 717035-069 GEOLOGIST NSH DATE June 79

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 13

Sample No.		Metal Content in ppm. Pb	Zn	Cu	Ag	Ba/Mn	Sn	W	Geological observations of 15
717035	Airstrip Id	<5	<2	2	<1	<10/8	10	<10	Quartzite + black siltls
036	"	<5	<2	2	<1	<10/10	22	<10	"
37	"	10	38	170	<1	<10/340	<4	<10	Quartzite
38	"	<5	<2	5	<1	<10/12	4	<10	"
39	"	<5	<2	5	<1	<10/8	<4	<10	Quartzite + white siltite
040	"	<5	<2	5	<1	<10/12	6	<10	Quartzite
41	"	<5	<2	2	<1	<10/10	4	<10	Quartzite + black siltls.
42		<5	<2	2	<1	<10/8	<4	10	Black siltls.
43	Sth Area	<5	12	18	<1	<10	6	<10	Thinly lam grey siltls.
44		<5	<2	12	<1	<10	<4	<10	"
45		<5	2	30	<1	<10	<4	<10	Limonite stained siltls.
46		<5	2	15	<1	<10	4	10	Yellow clay
47		10	5	500	<1	<10	<4	10	Quartz - pyrite
48		<5	38	8	<1	<10	<4	<10	Light green siltls.
49		<5	12	2	<1	<10	4	15	Green and brown si
050		<5	30	2	<1	<10	<4	<10	"
51		<5	32	<2	<1	<10	<4	<10	"
52		<5	8	2	<1	<10	<4	<10	Yellow brown siltls
53		5	5	10	<1	<10	16	10	Spotted brown siltls
54		<5	22	2	<1	<10	10	<10	Brown pyritic siltls
55		<5	28	<2	<1	<10	6	<10	Green and brown siltls
56		<5	2	<2	<1	<10	<4	20	Soft sandy Mn rich rock
57		<5	40	2	<1	<10	6	10	Yellow green siltls
58		5	38	18	<1	<10	70	10	Khakhi siltls.
59		5	20	35	<1	<10	16	15	"
060		10	60	70	<1	<10	95	60	" + yellow clay
61		5	15	22	<1	<10	<4	10	Yellow clay
62		40	50	10	<1	<10	8	<10	Pyjama rock
63		40	15	90	<1	<10	95	15	Black siltls.
64		25	12	200	<1	<10	24	10	"
65		<5	15	30	<1	<10	18	<10	"
66		15	15	10	<1	<10	40	10	" + yellow clay
67		530	30	50	<1	<10	95	35	" "
68		80	75	50	<1	<10	85	20	Yellow siltls
069		120	30	240	<1	<10	70	15	"
			All Ta <10 except 716041.						

A 11343

050

GEOCHEMICAL ROCK SAMPLING LEDGER 140051

Page No. 14

TENEMENT SPL 781. D.P.O. No. 416

AREA/PROSPECT Spurgeon Hill SAMPLE No's. 717070 - 104 GEOLOGIST NRL DATE June 79

PLAN REFERENCE ANALYSED BY ARDL

APPENDIX 3 PAGE 14 of 15

Sample No.		Metal Content in ppm. Pb	Zn	Cu	Ag	Bi/Mn	Sn	W	Geological observations
717070		5	25	38	<1	<10	6	<10	Black siltls
71		25	32	22	<1	<10	8	10	"
72		10	48	10	<1	<10	55	20	Yellow green siltls
73		5	18	5	<1	<10	6	10	Pyjama rock + black siltls
74		5	38	2	<1	<10	<4	<10	Black siltls
75		10	2	<2	<1	<10	4	<10	Grey spotted siltls
76		<5	5	28	<1	<10	<4	10	Brown siltite
77		10	2	10	<1	<10	<4	10	Grey to black siltls.
78		<5	<2	<2	<1	<10	<4	<10	Grey siltls + quartzite.
79		10	<2	<2	<1	<10	<4	35	Soft grey siltls
080		<5	<2	2	<1	<10	<4	<10	Conglomerate
81		5	<2	<2	<1	<10	<4	45	Soft grey siltls
87		5	2	2	<1	<10	6	10	Brown siltls
83		<5	70	<2	<1	<10	10	<10	Green and yellow siltls
84		5	28	<2	<1	<10	15	<10	"
85		10	45	5	<1	<10	210	<10	"
86		30	48	15	<1	<10	26	10	Hard green pyritic siltls.
87	Airstrip Rd	<5	2	2	<1	<10	8	<10	Black siltls + quartzite
88		<5	<2	2	<1	<10	10	<10	Black and brown siltls
89	Airstrip	<5	<2	2	<1	<10	12	<10	Dark brown siltls.
070		<5	<2	2	<1	<10	6	<10	"
91		<5	2	5	<1	<10	<4	<10	"
92		<5	<2	2	<1	<10	6	<10	"
93		10	5	18	<1	<10	<4	<10	White quartzite.
94	Dev track	35	50	15	<1	<10	<4	10	Yellow clay + green siltls
95		70	60	15	<1	<10	<4	<10	"
96		10	50	12	<1	<10	<4	<10	"
97		5	60	8	<1	<10	6	<10	"
98		10	5	80	<1	<10	4	10	Black siltls.
99	N Peters Rd	<5	38	20	<1	<10	170	20	Yellow + green siltls
717100		<5	35	10	<1	<10	95	10	"
01									
02		20	8	25	<1	<10	270	15	Yellow clay
03		10	18	28	<1	<10	38	<10	" + green siltls
04		<5	5	5	<1	<10	210	10	"

051

GEOCHEMICAL ROCK SAMPLING LEDGER 140052

Page No. 15

TENEMENT SPL 781 D.P.O. No. A16

AREA/PROSPECT Specimen Hill SAMPLE No's. 717104-116 GEOLOGIST NRL DATE June 79

PLAN REFERENCE ANALYSED BY AMDEL

APPENDIX 3 PAGE 15

Geological observations of 15

Sample No.		Metal Content in ppm.							
		Pb	Zn	Cu	Ag	Bi / Mn	Sn	W.	
717104	P. Ridge	<5	5	5	<1	<10	20	<10	Yellow clay + green silt/s
05		<5	5	5	<1	<10	60	<10	Orange clay
06		<5	5	<2	<1	<10	6	<10	Yellow silt/stone.
07		25	15	840	<1	<10	14	<10	Green fine grained pyritic rk.
08		<5	5	10	<1	<10	20	<10	Limonite st. green silt/st
09		20	230	85	<1	<10	580	30	Brown silt/s
717110		25	25	18	<1	<10	150	30	White clay
11	River Road	5	10	22	<1	<10	<4	<10	Black slate
12		<5	2	<2	<1	<10	<4	<10	Sandy grey silt/s
13		10	10	15	<1	<10	<4	<10	"
14		5	<2	<2	<1	<10	10	<10	Brown silt/s.
15		<5	<2	<2	<1	<10	<4	<10	Laminated sandy grey silt/s.
16		<5	<2	<2	<1	<10	4	<10	

052

140053

322000mE

323,000mE

324000mE

325000mE

5434,000mN.

5,433,000mN.

5,432,000mN.

5,431,000mN.

5,430,000mN.

5,429,000mN

5,428,000mN.

5,427,000mN.

E.L. 1/77
S.P.L. 774

S.P.L. 774
S.P.L. 781

E.L. 1/77

S.P.L. 781
E.L. 1/77

FRANKLAND RIVER

CASSITERITE CREEK

CAMP

7/7111 x 4
7/7112 x 4
7/7113 x 4
7/7114 x 10
7/7115 x 4
7/7116 x 4

7/7105 x 60
7/7107 x 14
7/7106 x 7
7/7108 x 20
7/7102 x 270
7/7103 38
7/7104 210
7/7100 x 95
7/7099 x 170
7/7109 x 580
7/7110 x 580

7/7085 x 26
7/7086 x 210
7/7084 x 15
7/7083 x 10
7/7082 x 6
7/7081 x 4
7/7079 x 4
7/7080 x 4
7/7078 x 4
7/7077 x 4
7/7076 4
7/7075 4
7/7074 4
7/7073 x 6
7/7047 x 4
7/7048 x 4
7/7049 x 4
7/7050 x 4
7/7051 x 4
7/7052 4
7/7053 x 16
7/7054 x 10
7/7055 x 6
7/7056 x 4
7/7057 x 6

True North
Magnetic North

SCALE 1:10,000 (Approx)
(Photo Scale)

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 200 metres

LEGEND

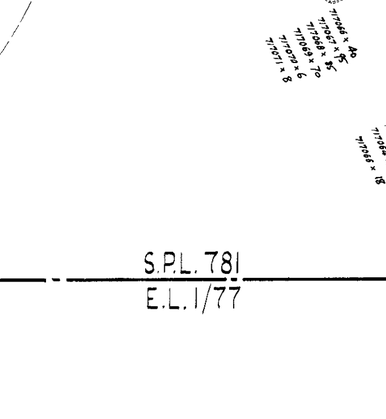
- Costean
- Major track
- Minor track
- Creek
- Licence boundary

x Rock chip sample location
7170 60 x Sample No.
x 200 Tin value in ppm

5 cm

△ MT. BALFOUR

LOCATION MAP



CRA EXPLORATION PTY LIMITED

S.P.L's. 774 & 781 - BALFOUR, N.W. TAS.
GEOCHEMICAL PLAN
Sn RESULTS

geol. ass. M.P.	scale 1:10,000	report no. 9755	
drawn T.G.D.S.	date 4.7.'79	plan no. Tc 148	

Creek

Landing Ground

Landing Ground

Landing Ground

Skinners Flat

Emmetts

CENTRAL MT. BALFOUR

MURRAYS REWARD

P. Laan & W. F. Baker 32ha

SCALE 1:5000

100 0 100 200 300 400 500m

5 cm

140054

C.R.A. EXPLORATION PTY. LIMITED

S.P.L.'s 774 & 781 BALFOUR, N.W. TAS.

LEASE PLAN

geologist: M.P.	scale: 1:5000	report no: 9755
drawn: –	date: Sept.'79	plan no: Tc 149

055

140055

5431,000 mN

10000E

116 N

115 N

114 N.

113 N.

112 N.

111 N.

110 N.

109 N.

108 N

107 N.

106 N.

105 N.

104 N.

103 N.

102 N.

101 N.

100 N.

99 N.

98 N.

97 N.

96 N.

95 N.

94 N.

93 N.

92 N.

91 N.

90 N.

89 N.

88 N

5430,000 mN.

5429,000 mN.

323,000 mE.

324,000 mE.

325,000 mE.

CLUMP ROAD

AIR STRIP

BALFOUR - TEMMA ROAD

CASSITERITE CREEK

MATRIX CREEK

PETERS RIDGE

"BLUE TIN" AREA

SKINNER'S FLAT

SPECIMEN HILL

CENTRAL MT. BALFOUR

MURRAY'S REWARD

TERTIARY BASALT

CAMP

Cu

Qtz SnO_2-W

F

Fault from photo interp.

LEGEND

"Pyjama" rock - irregularly laminated grey green siltstone. Slump and sole structures common.

Green to yellow, finely laminated siltstone. Siltstone and quartzite interbeds common.

Massive white qtzite and siltstone.

Grey hard laminated siliceous siltstones Limonitic commonly, often assoc. with yellow clays

Black micaceous carbonaceous siltstone.

Breccia zone.

Tourmaline rich zone.

Mineralised quartz vein - Sn, W, FeS_2.

/50° Dip and strike of bedding

General dip direction in areas of variable dip bedding

Vertical dip and strike of bedding

× Sn Tin occurrence.

Geological boundary.

Geological mapping by: N R Langsford.

GRID NORTH (317° Mag)

STATE METRIC GRID NORTH

MAGNETIC NORTH

SCALE 1:5000 (Approx.)
(Photo Scale)

100 0 100 200 300 400 500m

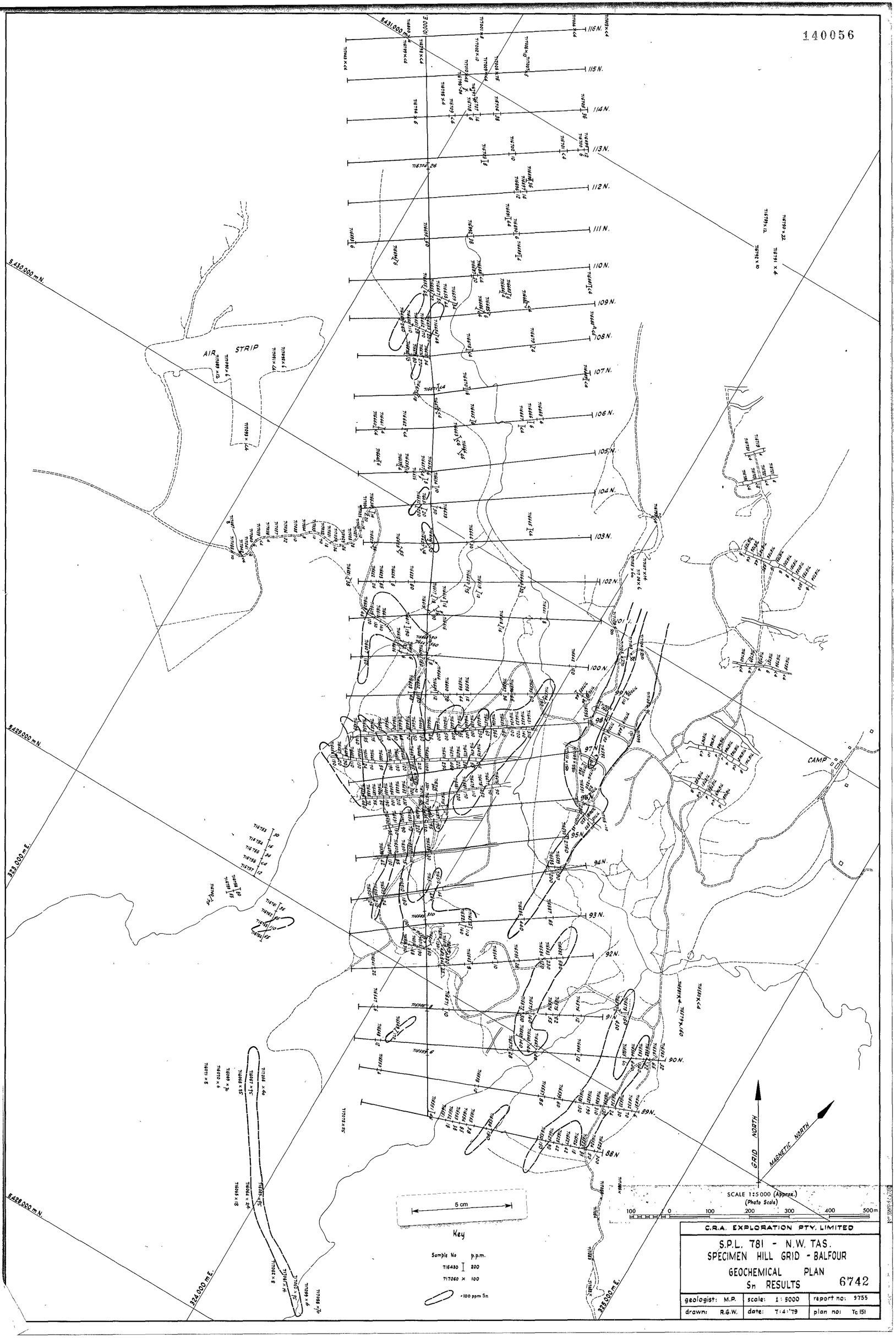
5 cm

C.R.A. EXPLORATION PTY. LIMITED

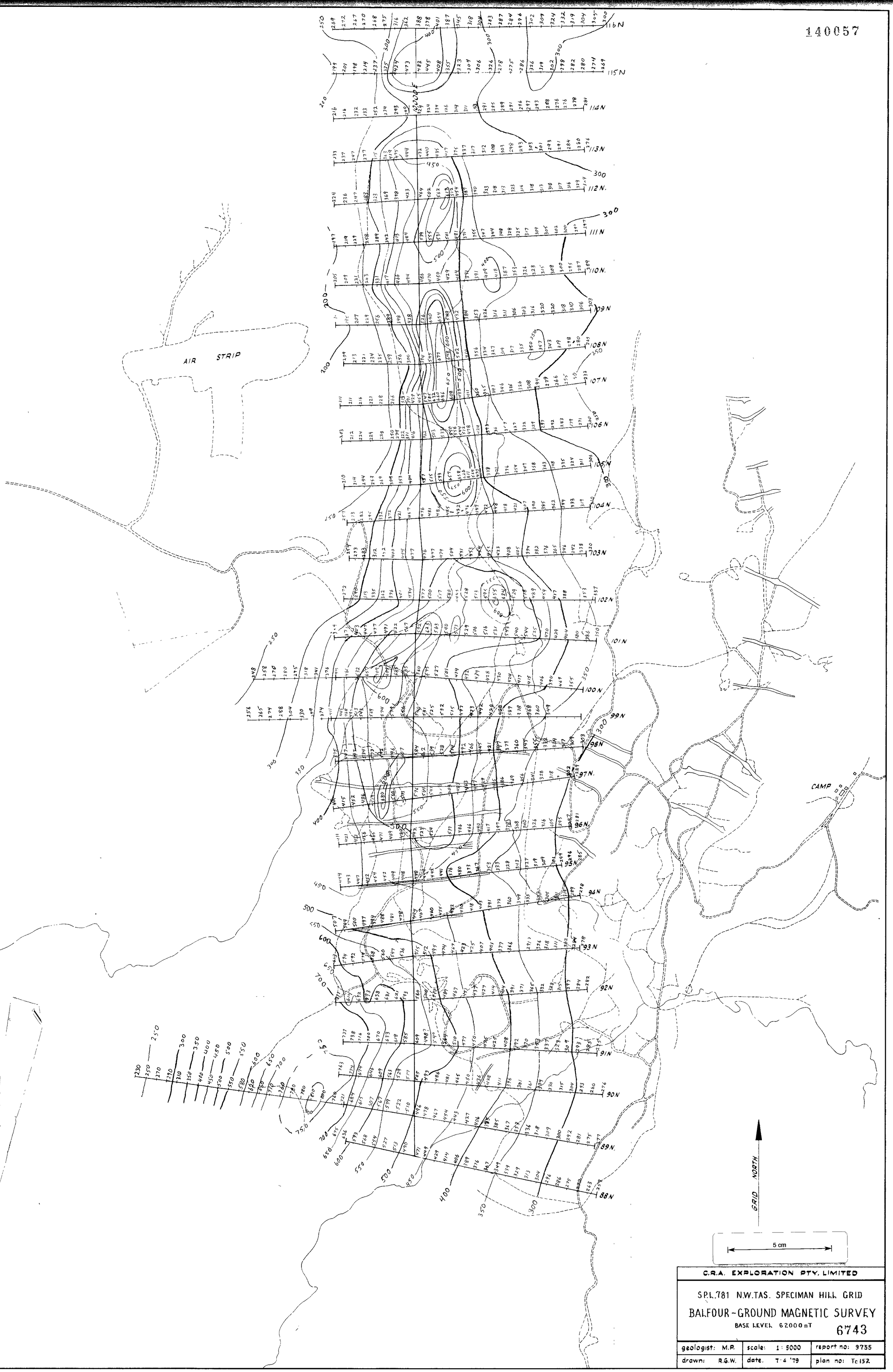
S.P.L. 781 - N.W. TAS.
SPECIMEN HILL GRID
GEOLOGICAL PLAN

geologist: TMP	scale: 1:5000	report no: 9755
drawn: T.G.D.S.	date: 10.7.'79	plan no: Tc 150

140056


5,430,000 m N.
5,429,000 m N.
5,428,000 m N.
323,000 m E.
324,000 m E.
325,000 m E.
10,000 E
AIR STRIP
CAMP
116 N.
115 N.
114 N.
113 N.
112 N.
111 N.
110 N.
109 N.
108 N.
107 N.
106 N.
105 N.
104 N.
103 N.
102 N.
101
100 N.
99 N.
98 N.
97 N.
96 N.
95 N.
94 N.
93 N.
92 N.
91 N.
90 N.
89 N.
88 N.
GRID NORTH
MAGNETIC NORTH
5 cm
Key
Sample No p.p.m.
716480 200
717060 100
>100 ppm Sn
SCALE 1:5000 (Approx.)
(Photo Scale)
100 0 100 200 300 400 500m
C.R.A. EXPLORATION PTY. LIMITED
S.P.L. 781 - N.W. TAS.
SPECIMEN HILL GRID - BALFOUR
GEOCHEMICAL PLAN
Sn RESULTS
6742
geologist: M.P.
scale: 1:5000
report no: 9755
drawn: R.G.W.
date: 7:4:'79
plan no: Tc 151

140057



C.R.A. EXPLORATION PTY. LIMITED

S.P.L.781 N.W.TAS. SPECIMAN HILL GRID

BALFOUR - GROUND MAGNETIC SURVEY

BASE LEVEL 62000 nT

6743

geologist: M.P.	scale: 1 : 5000	report no: 9755
drawn: R.G.W.	date. 7·4 '79	plan no: Tc152

140058

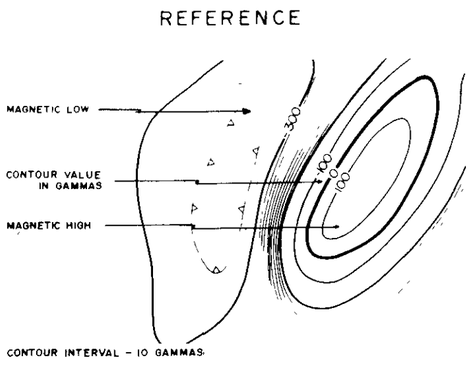
322 000mE
323 000mE
324 000mE
325 000mE

5434 000 m N
5,433 000 m N
5,432 000m N
5,431,000 m N
0,000mN
5,429,000 m N
5,428,000 m N

SCALE 1:10 000 (Approx)

200 0 200 400 600 800 1000m

REFERENCE

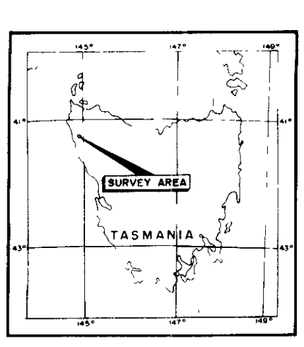


THE DATA HAS BEEN ADJUSTED FOR DIURNAL VARIATION WITH AN ADOPTED VALUE OF 52255 GAMMAS AT THE DIURNAL BASE STATION AT MYNYARD AERODROME 40°59 51·5 AND 145°43 34 E. THE SENSOR HEIGHT WAS 2 METRES
THE DATUM FOR THE TOTAL MAGNETIC INTENSITY CONTOURS IS THE INTERNATIONAL GRID REFERENCE FIELD 1979 25

SURVEY SPECIFICATIONS

AIRCRAFT	BELL 206 B
MAGNETOMETER	VARIAN 4937A PROTON PRECESSION USING TOWED BIRD CONFIGURATION WITH 37m CABLE
DIURNAL RECORDER	GEOMETRICS G826 PROTON PRECESSION MAGNETOMETER WITH RUSTRAK RECORDER & CRYSTAL CLOCK
ALTIMETER	BONZER TRN-70
ANCILLIARY EQUIPMENT	GEOEX INTERVALOMETER, GEOEX DIGITAL ACQUISITION SYSTEM
	CENTURY 444 7 CHANNEL ANALOGUE LIGHT BEAM RECORDER
	VINTEN 16 mm GROUND TRACKING CAMERA
READING INTERVAL	1.0 SECOND
NOMINAL AIRCRAFT SPEED	60 KNOTS
NOMINAL AIRCRAFT SURVEY ALTITUDE	90 METRES
	SENSOR CLEARANCE 75 METRES

LOCATION



Note Taken from Aeromagnetic Survey of Frankland River Area, Tasmania, by Geoex Pty Limited

5 cm

C.R.A. EXPLORATION PTY. LIMITED

SPL's 7748 781 - BALFOUR, N.W. TAS.

LOW LEVEL AEROMAGNETIC SURVEY - CONTOUR PLAN -

geologist M.P.	scale 1:10,000 (approx)	report no 9755
drawn R.G.Z.	date Sept. '79	plan no Te 153